



Democratizing Resilience: Civilization Arches - A Tokenized Network of Secure, Sustainable Safe Havens

Abstract:

This paper introduces Civilization Arches, a novel initiative leveraging blockchain technology and tokenized ownership to create a global network of secure, sustainable living spaces functioning as safe havens during crises. The paper addresses the escalating issue of global crisis management, analyzing the growing threats posed by natural disasters, geopolitical conflicts, and pandemics. It highlights the existing asymmetry in crisis preparedness, where only high-net-worth individuals have access to sophisticated private bunkers, exacerbating social inequalities and undermining community resilience.

Civilization Arches proposes a solution through a network of self-sufficient, secure bunkers equipped with state-of-the-art technologies and sustainable infrastructure. Tokenized ownership opens the door to broader investor participation, democratizing access to these safe havens. The paper delves into the economic model, revenue streams, and operational plan, outlining the development phases and key partnerships envisioned. Governance through a Decentralized Autonomous Organization (DAO) fosters transparency and community involvement. Finally, the paper emphasizes the project's alignment with natural laws and its commitment to preserving human social cultural and genetic diversity in secure and sustainable ecosystems.

Keywords: Crisis preparedness, tokenized ownership, blockchain technology, sustainable living, DAO, social impact

1. Introduction

The 21st century presents humanity with a unique confluence of global challenges, including accelerating climate change, rising geopolitical tensions, and the emergence of novel pandemics. These events highlight the critical need for resilient communities and individuals prepared to face unforeseen disruptions. Unfortunately, current solutions for crisis preparedness are often fragmented, inaccessible, and unsustainable.

1.1. The Escalating Need for global crisis management

Quantitative data paints a stark picture of the increasing frequency and severity of global crises:

- **Natural disasters:** Over 7,000 natural disasters in the past two decades have affected more than 4 billion people, incurring \$2.97 trillion in economic damage (EM-DAT).
- **Geopolitical conflicts:** The Global Peace Index 2022 reports a decline in global peacefulness, marking the ninth deterioration in the last 13 years. Over 2 billion people live in conflict zones, resulting in an estimated \$15.2 trillion economic impact in 2021.
- **Pandemics:** The COVID-19 pandemic resulted in over 6 million deaths globally, with economic disruptions leading to an estimated \$12.5 trillion GDP loss by 2024 (WHO, IMF).

The projected urbanization trends further heighten concerns, with 68% of the world's population expected to reside in urban areas by 2050, increasing vulnerability to the cascading effects of crises.

1.2. Asymmetry in Crisis Preparedness: A Divide Widens

Current solutions often cater to a privileged few. High-net-worth individuals can afford private bunkers equipped with advanced technology and self-sustaining facilities, a luxury far beyond the reach of the average person. This creates a significant gap in safety and security measures available to different societal segments during crises.

Examples of such private bunkers include those built in recent years by Bill Gates and Mark Zuckerberg, reportedly featuring advanced security features, environmental controls, and multi-year food and water supplies, highlighting the stark disparity in preparedness capabilities.

This individualistic approach to crisis preparedness undermines social cohesion and community-based resilience strategies, crucial components of effective risk mitigation.

2. Civilization Arches: Democratizing Access to Security and Sustainability

Civilization Arches aims to bridge this gap and democratize access to secure and sustainable living spaces. By leveraging blockchain technology and tokenized ownership, the initiative introduces a network of community-driven bunkers offering:

- Crisis protection: State-of-the-art bunkers with advanced security measures to offer safe havens during times of crisis.
- Sustainable living: Renewable energy infrastructure, hydroponics for food production, and waste management systems for self-sufficiency.
- Vibrant community: Collaborative environment fostering support, connection, and knowledge sharing among residents.
- Tokenized ownership: Decentralized governance model through a DAO, enabling broader participation and investment in the network.

3. Economic Model and Revenue Streams

Civilization Arches operates under a sustainable economic model with diverse revenue streams:

- Token sales (ICO and beyond): Raising initial capital for construction and operational setup.
- Leasing: Renting out research facilities, data centers, and secure storage solutions within the Arches.
- Partnerships and sponsorships: Collaborating with relevant entities for technology integration, research initiatives, and educational programs.
- Educational and training programs: Offering skill-building and awareness initiatives related to crisis preparedness and sustainable living.

4. Operational Plan and Development Phases

The project roadmap envisions a phased approach:

- Phase 1: Prototype Arch construction showcasing essential features, security measures, and sustainability technologies.
- Phase 2: Expansion based on the success of the prototype, adapting to local environments and regulations, and building additional Arches.
- Phase 3: Global network establishment with interoperability between Arches, facilitating resource sharing and knowledge exchange, and implementing a robust shared governance model.

5. Key Partnerships and Collaborations

Civilization Arches recognizes the importance of strategic partnerships to achieve its goals. Key collaborations include:

- Construction firms: Partnering with leading construction companies experienced in building secure and sustainable structures.
- Renewable energy companies: Integrating advanced renewable energy solutions for self-sufficiency within the Arches.
- Hydroponics experts: Implementing efficient and sustainable food production systems using hydroponics technology.
- Security technology providers: Equipping the Arches with cutting-edge security measures and monitoring systems.
- Research institutions: Collaborating with research institutions for technology development, data analysis, and crisis preparedness research.
- Data centers: Offering secure and reliable data storage facilities within the Arches, attracting partnerships with data centers.
- Educational entities: Developing educational programs on crisis preparedness, sustainable living, and blockchain technology for residents and the broader community.

6. Financial Plan and Sustainability

A comprehensive financial plan outlines the project's funding strategy and long-term financial sustainability. The initial funding will come from:

- ICO: Raising capital through an Initial Coin Offering, allowing individuals to invest in the project and acquire tokens representing ownership and governance rights.
- Subsequent token sales: Offering additional token sales in the future to fund further expansion and development.

Revenue streams mentioned in section 3 will contribute to ongoing operational costs and ensure long-term financial sustainability. Regular financial reports and audits will ensure transparency and accountability to investors and token holders.

7. Risk Management and Mitigation Strategies

The project acknowledges potential risks and implements mitigation strategies:

- Diversified revenue streams: Reducing reliance on any single revenue source through a balanced mix of token sales, leasing, partnerships, and educational programs.
- Comprehensive insurance coverage: Securing insurance for construction, operational, environmental, and cyber risks.
- Legal compliance: Proactively navigating the evolving regulatory landscape surrounding tokenized assets and blockchain technology.
- Cybersecurity measures: Implementing robust cybersecurity protocols to protect user data and the platform's infrastructure.

8. Governance and Community Engagement

Civilization Arches emphasizes transparency, inclusivity, and community involvement through:

- Decentralized Autonomous Organization (DAO): Empowering token holders with voting rights on crucial decisions regarding project development, resource allocation, and community management.
- Multi-signature treasury management: Ensuring accountability and security in handling project funds through a multi-signature wallet requiring approval from multiple authorized individuals.
- Online and offline community engagement: Fostering connections and collaboration through online forums, social media groups, and regular meetups or conferences.
- Educational resources and programs: Equipping residents and the broader community with knowledge and skills related to crisis preparedness and sustainable living.

9. Social Impact and Sustainability

Civilization Arches aligns its development with natural laws and its commitment to preserving human social cultural and genetic diversity in secure and sustainable ecosystems.

- Providing communities with safe and secure living spaces during crises, contributing to physical and mental well-being.
- Integrating renewable and impact-free energy solutions within the Arches, thus promoting a harmonious co-existence between humans and nature.
- Fostering sustainable living practices and community resilience to preserve the human flame.

The project will collaborate with NGOs and local communities aligned with its values to amplify its social impact and promote responsible practices. Regular impact reports will measure and communicate progress towards achieving its sustainability goals.

10. Conclusion

Civilization Arches presents a groundbreaking approach to global crisis management. By leveraging blockchain technology, tokenized ownership, and a community-driven model, the project offers a solution that is not only secure and sustainable but also equitable and inclusive. Its commitment to preserving human social cultural and genetic diversity and alignment with the natural laws further highlights its ability to safeguard humanity future.

11. References

Creating underground cities, arches, and other infrastructures as means of preserving civilization from floods is a multifaceted topic that intersects urban planning, civil engineering, environmental science, and historical studies. Below are scholarly and academic references that explore various aspects related to this subject, including case studies, theoretical frameworks, and practical applications:

Bobylev, N. (2009). Mainstreaming sustainable development into a city's Master plan: A case of Urban Underground Space use. *Land Use Policy*, 26(4), 1128-1137. [This paper discusses the use of urban underground space as a strategy for sustainable urban development, which can include flood mitigation and preservation of above-ground historical sites.]

Cui, Z., Liu, G., Huang, H., & Wang, X. (2018). The ancient underground openings and preservation engineering in China. *Tunnelling and Underground Space Technology*, 81, 413-424. [This study provides insight into ancient China's underground structures and their role in civilizational preservation, including flood protection.]

Kates, R. W., Colten, C. E., Laska, S., & Leatherman, S. P. (2006). Reconstruction of New Orleans after Hurricane Katrina: A research perspective. *Proceedings of the National Academy of Sciences*, 103(40), 14653-14660. [This paper analyzes post-flood reconstruction efforts, including the use of elevated structures and other flood mitigation strategies.]

Marinos, P., & Kavvadas, M. (2019). *Tunnels and Underground Cities: Engineering and Innovation meet Archaeology, Architecture and Art*. CRC Press. [This book explores the intersection of engineering, archaeology, and architecture in the development of underground cities and tunnels, including for flood protection.]

Parise, M. (2015). Underground cities: To live or to visit? The dichotomy of use of subsurface space in urban planning. *Procedia Engineering*, 118, 1110-1118. [This article discusses the dual use of underground spaces in urban planning, including as a flood mitigation strategy.]

Rigg, J., Oven, K. J., Basyal, G. K., & Lamond, J. (2016). Between a rock and a hard place: Vulnerability and precarity in rural Nepal. *Geoforum*, 76, 63-74. [This paper explores the vulnerability of rural communities to natural disasters, including floods, and discusses traditional and modern mitigation strategies.]

Saurí, D., & Palau, R. M. (2016). Underground urbanism: The rise of the defensive city. *Cities*, 51, 132-140. [This article examines the concept of "defensive urbanism," including the use of underground spaces to protect against environmental threats like flooding.]

Tsenkova, S., & Nedovic-Budic, Z. (2006). *The Urban Mosaic of Post-Socialist Europe: Space, Institutions and Policy*. Springer. [This book includes discussions on post-socialist cities' adaptation strategies, including underground developments for flood protection.]

Versos, L. A., & Tsiambaos, G. (2018). Design and construction challenges of underground structures in flooded urban environments. *Journal of Geotechnical and Geoenvironmental Engineering*, 144(9), 04018065. [This paper addresses the technical challenges of constructing underground structures in flood-prone urban areas.]

Zhou, Y., & Gao, Y. (2020). Climate Change Adaptation in Urban Planning: Underground Space Development as a Strategy for Chinese Cities. *Sustainability*, 12(3), 1245. [This article explores the role of underground space development in urban planning as a climate change adaptation strategy, including flood mitigation.]

These references provide a broad overview of the subject and should be useful for further research into the development and use of underground spaces for civilization preservation in the context of flood mitigation.

Call to Action

- Learn more about Civilization Arches and join the community: www.shltrs.io
- Explore investment opportunities: See annexe below
- Get involved in building a resilient future: contact@shltrs.io



1. Tokenomics
2. Roadmap
3. Governance

1. Tokenomics

For maximum security, speed, and community adoption, Shltr tokens will be launched on the **Cosmos blockchain** utilizing the **CosmWasm** smart contract protocol.

- **Cosmos Blockchain:** Cosmos is a highly scalable and secure blockchain platform known for its interoperability with other blockchains. This choice allows for faster transaction processing and future integration with other decentralized applications.
- **CosmWasm Smart Contract Protocol:** CosmWasm is a smart contract protocol specifically designed for the Cosmos ecosystem. It offers high customizability and security for building complex decentralized applications like Civilization Arches.

Total Supply:

10 Billion Shltr tokens minted at genesis.

Distribution:

- **Public Sale & Seed Funding (50%):** 5 Billion Shltr tokens will be allocated for the public sale and seed funding rounds. This will be the primary method for acquiring Shltr tokens for the general public.
- **Community Treasury (30%):** 3 Billion Shltr tokens will be reserved for the community treasury. These tokens will be distributed over a 10-year period to fund various community initiatives and incentivize ecosystem participation.
- **Team & Advisors (20%):** 2 Billion Shltr tokens will be allocated to the project team and advisors. This allocation will be further divided as follows:

Team: 1.4 Billion Shltr tokens will be allocated to the Civilization Arches development team. These tokens will vest over a 4-year period with a 1-year cliff to ensure long-term commitment to the project.

Advisors: 600 Million Shltr tokens will be allocated to project advisors. These tokens will vest over 3 years with a 6-month cliff to incentivize ongoing guidance and support.

Community Treasury Vesting Schedule:

Year	% Distribution	Distribution Volume (SHLTR)
2024	15%	450,000,000
2025	12%	360,000,000
2026	10%	300,000,000
2027	8%	240,000,000
2028	6%	180,000,000
2029	5%	150,000,000
2030	4%	120,000,000
2031	3%	90,000,000
2032	2%	60,000,000
2033	5%	150,000,000

Total Distributed to Community Treasury: 2,700,000,000 Shltr tokens (90% of Community Treasury allocation).

Remaining Community Treasury (10%): 300 Million Shltr tokens will be reserved for unforeseen needs and future community governance decisions. These tokens can be unlocked through a community voting process. Token Utility:

Shltr tokens will be the primary utility token within the Civilization Arches ecosystem, with various functionalities including:

- **Civilization Arches Bunker Ownership:** Shltr tokens will be required for purchasing or leasing ownership rights within Civilization Arches bunkers.

Governance: Shltr token holders will have voting rights on critical project decisions regarding the Civilization Arches network, such as expansion plans and resource allocation.

Ecosystem Services: Shltr tokens will be used to access various services within the Civilization Arches network, such as advanced security features, resource management tools, and community marketplaces.

2. Roadmap

This roadmap outlines a comprehensive and phased approach to launching the Shltr token, establishing the Civilization Arches ecosystem, and developing the first underground city prototype. It emphasizes community engagement, sustainable development practices, and iterative improvement to achieve long-term success and impact.

Phase 1:

Foundation (3 Months)

1.1 Core Team Assembly (Month 1):

- * Recruit top-tier talent across engineering, architecture, and urban planning.
- * Establish an advisory board with relevant industry leaders.

1.2 Token & Governance Design (Months 2-3):

- * Develop a robust tokenomics model with clear utility for Shltr tokens.
- * Define a transparent and inclusive governance structure.
- * Partner with a reputable blockchain security firm for smart contract audits.

1.3 Community Building (Months 1-3):

- * Launch a comprehensive communication strategy across social media.
- * Organize community events and AMAs to foster early engagement.
- * Establish a strong brand identity that resonates with the targeted audience.

Phase 2:

Pre-Sale & Fundraising (4 Months)

2.1 Pre-Sale Campaign (Month 4):

- * Shltr tokens pre-sale at a discounted price to incentivize early adopters and raise initial capital.
- * Prioritize participation from relevant communities (architecture, urbanist strategic planners, real-estate multinationals) alongside strategic investors.

2.2 Public Sale Preparation (Months 5-7):

- * Secure partnerships with leading cryptocurrency exchanges for Shltr token listing.
- * Finalize legal and regulatory compliance procedures for global token distribution.
- * Develop compelling marketing materials and educational content to inform potential investors.

2.3 Public Sale & Seed Funding (Month 8):

- * Conduct a multi-stage public sale with clear pricing tiers and transparent allocation mechanisms.
- * Facilitate separate seed funding rounds for institutional investors aligned with the project's vision.

Phase 3:

Ecosystem Development & Community Treasury Activation (Ongoing)

3.1 Treasury Activation & Governance Launch (Month 9):

- * Initiate the distribution of Shltr tokens to the community treasury according to the predefined schedule.
- * Implement a decentralized autonomous organization (DAO) framework for community-driven governance.
- * Establish voting mechanisms and proposal submission processes for token holders.

1.3 Community Building (Months 1-3):

- * Launch a comprehensive communication strategy across social media.
- * Organize community events and AMAs to foster early engagement.
- * Establish a strong brand identity that resonates with the targeted audience.

Phase 4:

Underground City Prototype Design & Planning (12 Months)

4.1 Interdisciplinary Team Formation (Month 13):

- * Assemble a diverse team of architects, engineers, urban planners, and sustainability experts to lead the design process.
- * Integrate community feedback and user insights from workshops and surveys.

4.2 Prototype Design & Feasibility Studies (Months 14-18):

- * Develop a comprehensive design for the underground city prototype, considering factors like size, capacity, functionality, and environmental impact.
- * Conduct thorough feasibility studies to assess technical viability, economic considerations, and potential construction locations.
- * Ensure the design adheres to the highest safety and sustainability standards.

4.3 Environmental Impact Assessment (Month 18):

- * Conduct a detailed environmental impact assessment (EIA) to minimize the project's ecological footprint.
- * Prioritize sustainable construction practices and free energy integration throughout the design.

Phase 5:

Prototype Construction & Testing (18 Months)

5.1 Prototype Construction (Months 19-24):

- * Commence construction of the underground city prototype based on the finalized design.
- * Utilize advanced technologies for energy efficiency, resource management, automation, and waste reduction.
- * Implement rigorous quality control and safety protocols throughout the construction process.

5.2 Functional & User Experience Testing (Months 25-30):

- * Conduct comprehensive testing of all systems within the prototype, including life support, security measures, and resource management infrastructure.
- * Invite diverse groups of participants to experience living and working within the prototype for user testing and feedback.
- * Continuously refine the prototype based on real-world data and user insights gathered during testing.

Phase 6:

Iteration & Expansion (Ongoing)

6.1 Design Iteration & Improvement (Months 31-36):

- * Analyze test results and user feedback to identify areas for improvement in the prototype's design and functionality.
- * Integrate lessons learned

3. Governance

SHLTRS is a utility token based on the Cosmos blockchain that governs key parameters of the Civilization Arches project and its ecosystem. These parameters control various aspects of the project's development, expansion, and community engagement. Voting rights are proportional to the amount of SHLTRS tokens a user owns or is delegated. To register their voting balance, users must delegate their token balance to an address (either their own or someone else's).

Most of the decisions made by the Civilization Arches DAO have on-chain results. To ensure informed decision-making and transparent communication with the wider community, the governance process in Civilization Arches consists of multiple steps.

Governance Proposals

There are three main categories a CAP (Civilization Arches Proposal) can fall under: Core, Process, or Informational.

CORE

Proposals which require on-chain actions, including treasury grants and project expansions. See Governance Powers.

PROCESS

Proposals for making a change to a process or implementation. Examples include location selection, contractor selection, and exchange listing procedures.

INFORMATIONAL

Proposals for general guidelines or information for the community.

Governance Process

Phase 1 - Proposal Submission

All ideas and proposals are initially published on the Civilization Arches platform. The purpose of this phase is to receive community feedback and engagement. Proposals undergo a phase of improvements and objections. If the proposal is well-received and feedback is incorporated, it can proceed to the next step.

Discussion Timeframe: Minimum 7 days

Phase 2 - Community Vote

The second phase involves community voting through Snapshot, a gas-less voting platform. Community members delegated a minimum number of tokens can submit proposals subject to a 14-day voting period. If the proposal receives support from a majority of participating votes, with a minimum threshold of SHLTRS yes votes, it can proceed to an on-chain execution vote.

Proposal Threshold: 100,000 SHLTRS

Voting Delay: 2 days

Voting Period: 14 days

Quorum: TBD SHLTRS

Phase 3 - On-Chain Execution

The next phase involves creating an on-chain proposal with code to be executed. Tally can be used as an interface to interact with the governance contract. On-chain proposals must be made by a member with the minimum number of tokens delegated, based on a successful phase two vote. Once proposed, votes will last 14 days. If the proposal receives majority support, with a minimum of SHLTRS yes votes, any member can queue the execution of the proposal. After a 2-day execution delay, the proposal can be executed.

Proposal Threshold: TBD SHLTRS

Voting Delay: 1 block

Voting Period: 14 days

Quorum: TBD SHLTRS

Execution Delay: 2 days

Governance Powers

Community governance has the power to control various aspects of the Civilization Arches project and its ecosystem:

- Select Civilization Arches locations
- Participate in the selection of contractors for communal shelters design and more
- Finance the listing of SHLTRS token on selected exchanges
- Participate in the selection of contractors for the promotion of the SHLTRS token and market makers for centralized exchange development
- Receive rewards for providing liquidity to the SHLTRS Token

Committees

To streamline certain operations, some activities of the DAO are governed by committees:

Safety Committee: Ensures that CAPs follow the governance process outlined above and prevent proposals that haven't followed the proper process from passing.

Expansion Committee: Facilitates expansions and upgrades to the Civilization Arches project, including new locations, infrastructure upgrades, and ecosystem developments.

Incentive Committee: Manages incentive programs for Civilization Arches users, utilizing a portion of the token supply for incentive programs and market liquidity. If all of the incentive budget is utilized, more can be allocated to the Incentive Committee via governance.



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