HOMEQUBE

Whitepaper - Final

Contents

1. What is Homeqube?

Homeqube is new stratosphere of home-building on web3. It encompasses a decentralized digital infrastructure made of strategic architecture powered by artificial intelligence (AI), and blockchain. Its tokenized infrastructure is designed to integrate and accommodate all use cases of home-building agents, from content production, design, asset ownership, procurement, assembly, and construction, in a decentralized value process delivery and extractions. Through its growing network of member manufacturers, suppliers, design engineers, fabricators, it envisages to empower the entire industry of home-building industry at scale, with deep integrations for robust service delivery, **by all, and for all.**

Homeqube aims to supplant century-old home-building practices that is why it is at the crux of Web3.0 commerce. A decentralized online platform for home-building with deep design integrations has never been done before because it also comes at the heels of global problems that the world has never experienced before: the worsening and accelerating impacts of climate change, architectural and engineering institutional inefficiencies, and a sluggard home-building process that can only bring about more shortage in the longer term.

Homeqube is comprised with 3 main platforms which can accommodate at least Design2Earn, Build2Earn, Manufacture2Earn, Deliver2Earn, and many more through agile service delivery.

- **The NFT Marketplace – For Content Creation / Open Market Talent**
- **The E-Commerce – For Supply Integration / Domestic Use Cases**
- **The dAPP – For Process Value Unifications of the first two, designed for Robust Problem Solving and in a Meta Gaming Environment.**

The NFT marketplace is a Solana Only Marketplace for 3D printed parts. It is the first NFT marketplace for this. It accepts a wide array for 3D printing files, including parametric data, and generative art. These kinds of files are accommodated to solicit more building algorithms for content creation for home – building.

The E-commerce is composed of Smart Contracts for Vendors, Merchants, Fabrication Shops, and Logistics Contractors, in a decentralized open market tokenized architecture. We are using drop

shipping but combined with decentralized architecture, and tokenized infrastructure, for full market efficiency.

The DAPP begins by plotting your lot area through optical character recognition (OCR) from where you can also design your home using our "user-centric-robust controls" that we call "knobs". These "knobs" are parametric functions that are tied up to real manufacturing/supplier data that are essential in building your pre-construction documents until full construction and move-in. Our Knobs dissolve all architectural and engineering issues empowering the user to install these suggested pre-engineered parts post-selection thereof. Information on costs, mobility, ergonomics, and other architectural precepts would be readily available in a design cockpit. This gives the user the power to make informed decisions when it comes to life-changing commitments such as having the ideal home that fits their requirements.

Homeqube is being developed by a team of multiple disciplines with years of experience in architecture, engineering, manufacturing, and construction. We aim to demystify and redistribute knowledge to an on-demand service and product delivery for all home-building needs. One of our main postulates is that most built homes were built using top-down processes. Our infrastructure introduces a bottom-up approach which we see as the next legacy of building processes which is made possible by emerging technologies such as blockchain, and Machine Learning. Our mission is to make the home-building processes accessible to all to serve humanity's aggregated requirements for long-term sustainability: a 'socio-techno-economy" perspective.

Our Core Values remain simple, yet also robust:

1. Above Board & Corporate Transparency.

2. Love for God and Neighbor.

2. Problems to be Solved

We believe that Homeqube solves many of the recurring problems confronting the home-building industry. These challenges include:

Long Lead Time

Lack of Knowledge Transparency in Architecture and Engineering

No direct connection to the manufacturer in the design process

No linkage between e-commerce and Home-Building

High Carbon Emissions from current Construction Materials

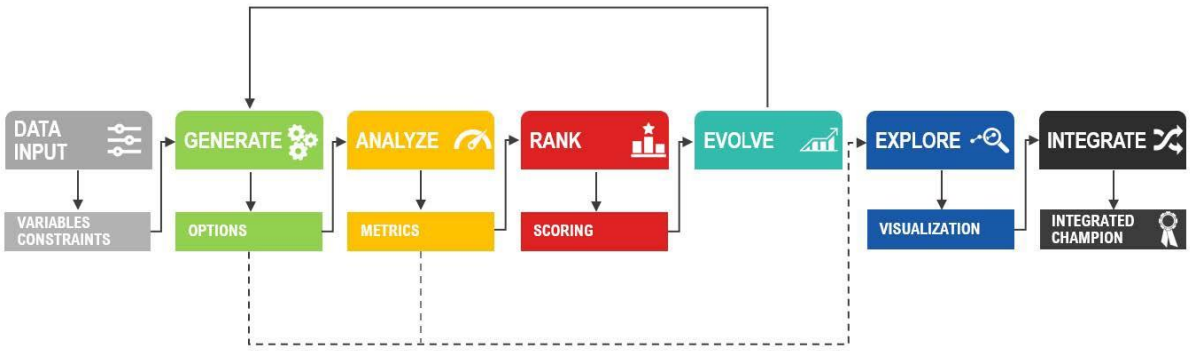
Inefficiencies of Skilled Labor and Design Process.

Low Resilience of Residential Structure against strong winds and Earthquake

Industrial Challenges in Industry 4.0 in Construction Industry

AI / ML for Generative Design

Before the popularization of machine learning, computational design approach is used in making design models. This approach is based on running algorithms and codes to make a parametric family representation of shapes and sizes. With the introduction of machine learning and AI, optimization and exploration of different designs were added. This additional step in the design process gives users different possible design combinations, and come up with the most optimal design.



We will harness the power of AI and ML to make different possible combinations of home designs and provide the most optimal design based on the users' needs. Also, as the system generates more data,

more home design styles could be unearthed. Our system will push both the human and machine capacity in generating creative ideas.

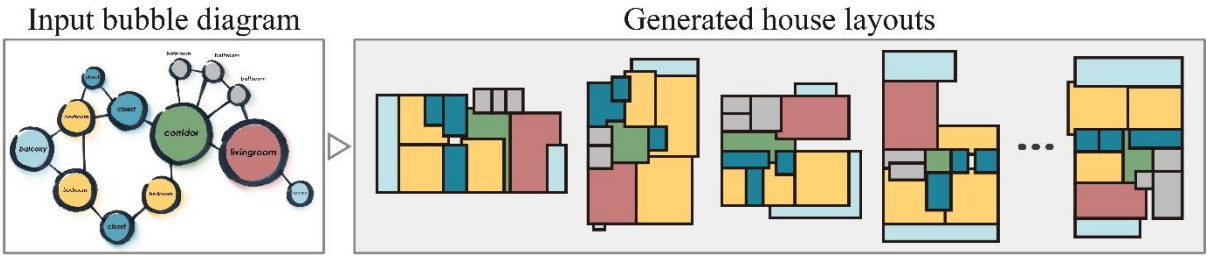
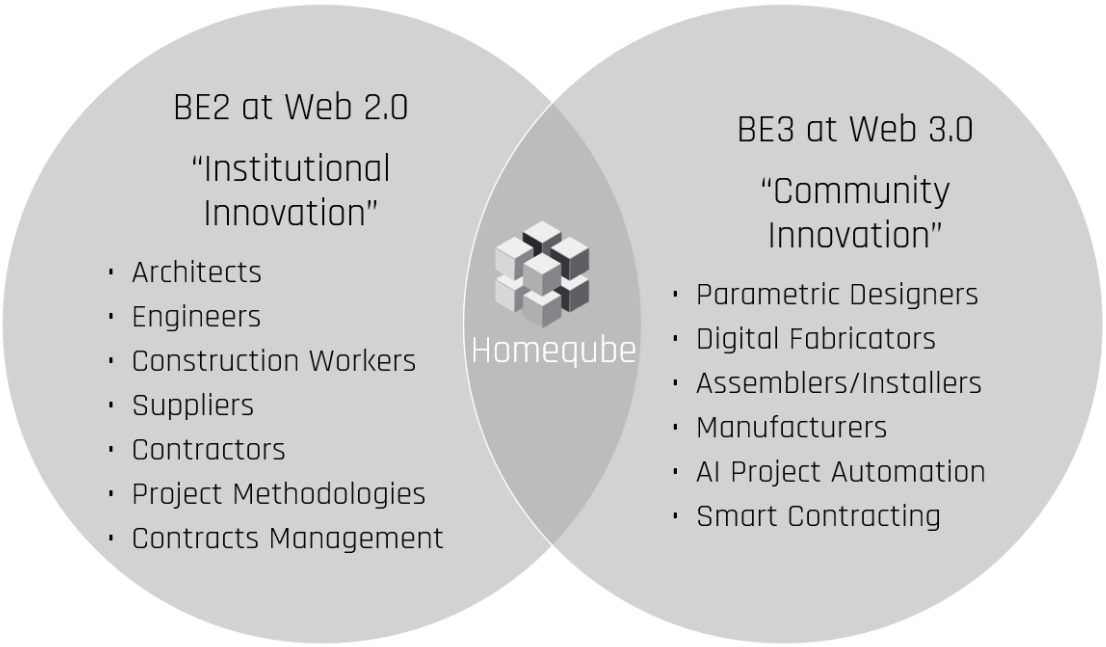


Image extract from: https://ennauata.github.io/housegan/page.html

3. Stakeholder Ecosystem Development

a. Sphere of Web 2 and Web 3 Players

Homeqube offers an end-to-end building solution process in designing and building your homes using cloud computing, blockchain, and AI capabilities with stakeholder inclusion, hence the Building Environments (BE) shall be deployed on web 3.0 to capture process innovations at different types of contributory-participation stages. By considering the transition of the two ecosystems, the Built Environment (BE) will be synergized into a semantic portal that can reach a new industrial revolution: Industry 5.0.



b. Call to Action Ecosystem Matrix, and DAO for System Architecture

Homeqube offers options on how you could earn and use Tokens we call (QUBE) inside the platform. These calls to action are the most rudimentary paths to get the most out of our infrastructure. But more sophisticated robust user paths will be possible when we have reached stakeholder and product maturity.

- Submit Your Parts into our Platform.
- Submit Your E-Shop as a Manufacturer into our Platform.
- Participate on several opportunities into our dAPP such as: Design to Earn (D2E), Built to Earn (B2E), Manufacturer to Earn (M2E).
- Sell your own NFT.
- Submit your Lot Information, for Market and Service Opportunity Matching.

Our DAO is based on Ontological Planning on System Architecture. System Architecture at the very least, is the basis of the behavior of components within a system domain. And at its most, system architecture can accommodate limitless kinds of new beings and new domains not just limited to parts and components, but also knowledge models on how sensemaking abilities become a precursor in the design process.

Stakeholder Action Matrix

Lifecycle Process	Earn Tokens from	Use Tokens for
Initiation / Identification / Submission	Parts Membership / Generative Art for Possible Knob Creation / Manufacturing Membership 2. To produce parts	Advertising / DAO Design Membership 4. To play and Build
Evaluation / Acceptance / Building	Dapp Game / Manufacturing Matching	Knob Usage
Production / Distribution / Main Output	2. To produce parts New Knob from Generative Art New Sellers of Parts	5. Admin Participation Lease Knob earnings through NFTs / Building Docs for Building

1. To design parts, knobs

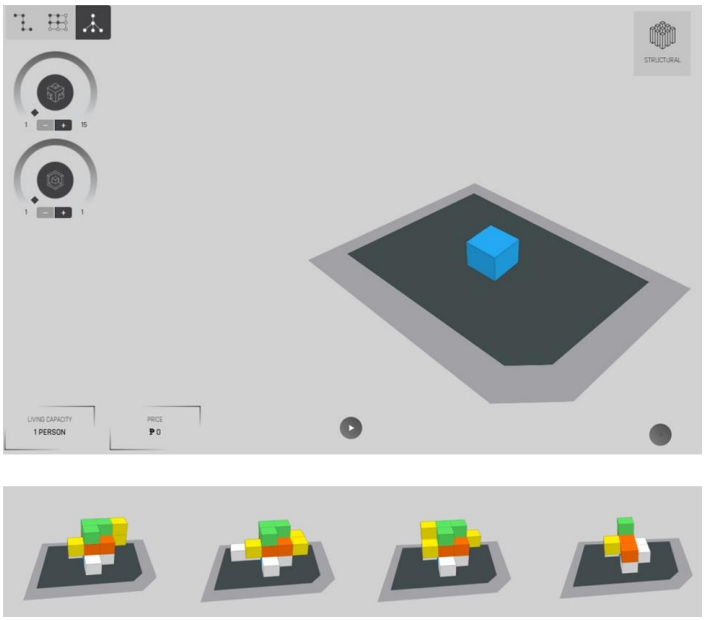
3. To procure parts

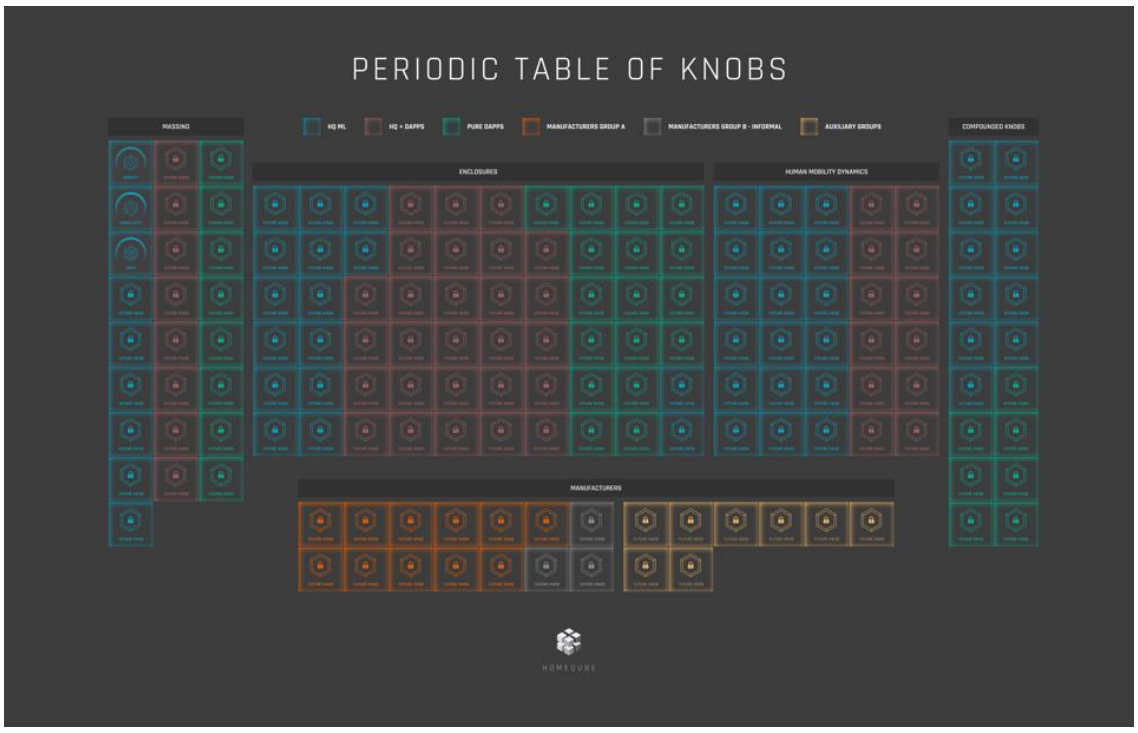
c. Robust Process Integrations.

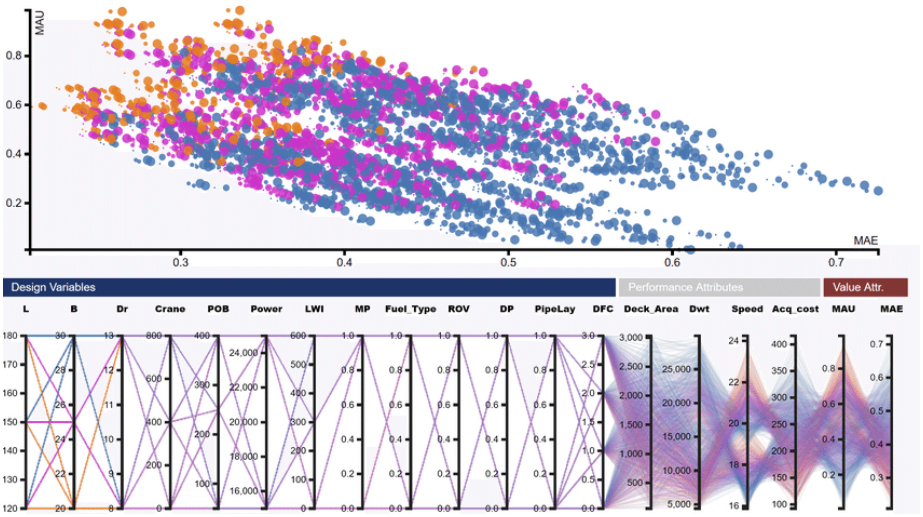
The dAPP will function as our back-end platform to unify the compounded data value of our perimeters. At the heart of the dAPP are the "Knobs". These are based on deconstruction philosophies where different combinations of designs can be produced from the basic parts of the system. These

Knobs are operated to modify the design of the house based on the users' preferences. As you turn the Knobs you will see real-time implications in the cost of your home, lifestyle metrics, mobility metrics, and other value-precepts to guide you in the design-decisions.

We intend to develop CI/CD of Knobs which we coin as "System Products" for the BE's full optimization use cases which encompasses engineering, architecture, and construction multi-stakeholders.







d. Our Building Journey Call for Actions

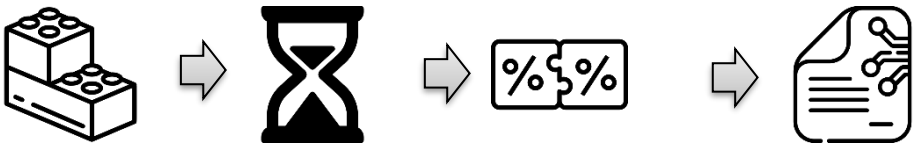
i. To Design and Earn (D2E)

You can participate in our dAPP games using your QUBE tokens, using your own designs. These parts can also be sold in NFT marketplaces. Your parts will have deep integrations into our system architecture platform (SAP.), which is the point for market efficiency and alignment.

Generative Designers' Path - A generative designer is a type of user that uses computational and algorithmic techniques in creating geometrical arts. Generative concepts are with time and motion and algorithm embeds that could directly be used for Home Building design-build processes. If you are a generative designer, the recommended path for you is:

Submit your Generative Art → Wait for Knob Integration → Sell your Generative Art to Marketplace

Parts Designers' Path - A Parts designer is a type of designer that can build assembly parts of a house. If you have talents in creating furniture, home mechanisms, and innovative parts Kit-Of-Parts, this path is for you. As a parts designer, the recommended path for you is:

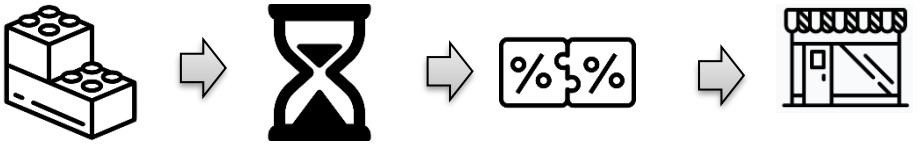


Submit your part design → Wait for Knob Integration → Wait for Manufacturing Match Ups → Apply for Smart Contract Royalties for Parts Sold through NFTs.

The creation of Non-Fungible Tokens, or NFTs, give freedom to graphics artists, generative designers, to sell their digital work of Generative Art and protect their intellectual properties. By augmenting decentralized apps and blockchain you can earn Tokens every time your created part and design are recognized and accepted by the Homeqube system. In addition, you will have ownership of that part thru NFT. In this way, you can also create your digital intellectual property for other designers.

ii. Print Parts (Manufacture2Earn)

Being an additive manufacturer to us doesn't require you to have a factory. You can create your portfolio of parts and have an E- shopfront in your backyard. You can also 3D print parts and designs available in the NFT store and start your fabrication business and sell to community members. The suggested path for it would be:



Submit your part geometry you intend to Print

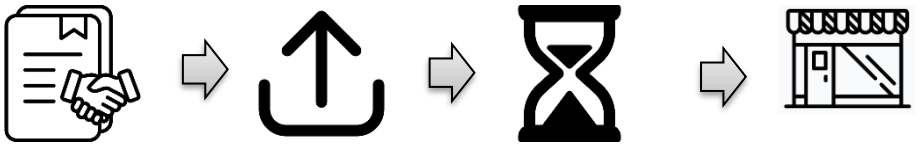
Wait for Knob Integration

Wait for Manufacturing Match Ups

Get Ready to Sell from your E-Shopfront

iii. Enlist Your Factory

You can contribute to the growth of our Ecosystem under our formal Manufacturing community. Open to all manufacturers, suppliers, and distributors who would want to include their products inside the dApp. These products include architectural, structural, electrical, mechanical, plumbing, and interior design parts, among other things to say the least. Products entered inside the dAPP will give more options for users in designing their homes to decide optimally. This is the recommended path for selling your parts under the use case program:



Join our Basic Smart Contract Program

Load your products inside the dAPP

Wait for Knob Integration

Get Ready to Sell from your E-Shopfront

iv. Play and Build: For Homebuilders (Build2Earn)

The mixture of the game environment and AEC (Architectural, Engineering, Construction) logics of the dAPP is a viable solution in designing and building your homes. For users who want to build their homes in the dAPP, this is the recommended path.

Register to Homeqube as User

Explore the Dashboard

Input your Minimum Launching Data (MLD)

Design with microsystem Knobs

Get your documents and Collect your Parts > DIY Assemblies

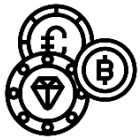
v. Just Play and Earn: For Gamers (Play2Earn)

The decentralized ecosystem makes it possible for gamers to contribute to the power of the dAPP. Gamers can earn Tokens by participating in the games provided by the dAPP to develop more interesting Knobs.

Join game challenges

Show your house in a VR environment

Sell your house design as NFT

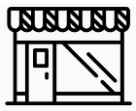


Earn Tokens by selling your parts design

4. Design for Manufacturing Franchise (DFM Franchise)

By investing in a franchise manufacturing with us, you will be able to manufacture Homeqube's main parts, which are economically friendly, cheaper, but still has the same structural integrity compared to traditional materials like steel and concrete. In addition, the parts that you will be produced will be certified thru our authentication system via QR codes. In this way, you are sure that the products produced will be viable to users. Our franchise includes Equipment Supply and Training, Supply Agreements, and Manufacturing Technology Transfer. We have service options available for different volumes. The path would be:

Product Loading



E-Shop to Sell Products

Knob Integration with Product Authentication

Promotion and Advertisement In the dAPP

5. Qube Transactions and Value Exchange

The standard token currency of Homeqube is QUBE. The QUBE can be used in a variety of ways, depending on the user's goal. A major thing to remember about web3 is the role of community. As a web3 company, we are focused on the ***customers' of our community, and the community of the customers'.*** We don't have direct customers.

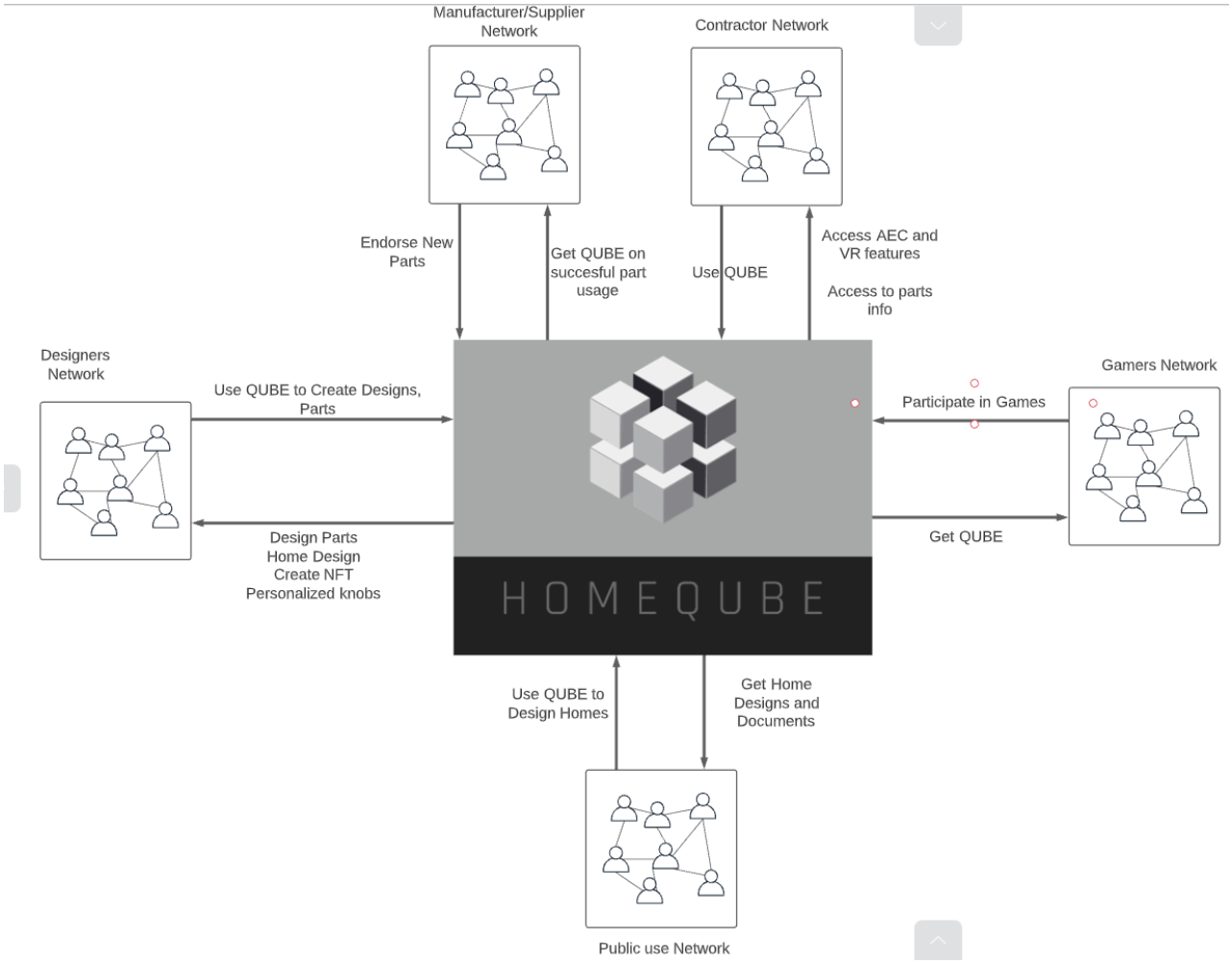


Figure 7: Value Exchange Map

6. $QUBE Tokenomics

This section talks on the allocation of the tokens, the initial coin offering (ICO), the platform that will be used in the exchanges of tokens, and the long-term value justifications.

a. Token Distribution

Allocations	Tokens	Share
Seed	70,000,000	7%
Strategic Sale (Launchpad)	60,000,000	6%
Private Sale	5,000,000	0.50%
Public Sale	5,000,000	0.50%
ESG Initiatives	30,000,000	3%
Ecosystem Reserve Support	250,000,000	25%
Ecosystem Activities	320,000,000	32%
Team	140,000,000	14%

Partners / Advisors	20,000,000	2%
Marketing	50,000,000	5%
Liquidity	50,000,000	5%
TOTAL	1,000,000,000	100%

Table 2: $Qube Token Allocations

b. First Batch of Release

The more home parts purchased through our platform the higher will be the value of $QUBE over time since the Carbon Credit value will be authenticated to a CER body to document the amount of carbon emission savings. In this way users will be more confident that their home building efforts result to a more environment friendly world scenario. The cumulative number of tokens that will be minted will be pegged at one billion (1,000,000,000) tokens which represents the total potential Kilograms gathered from 200,000,000 Homes. (A home is pegged at an average of 100 sq.m. plot in a single story) Carbon Credits is expected to reach 100 dollars per / Kg in the open market. We will be releasing worth 700,000 Homes of carbon credit, which is about 3,500,000 Kilograms which is which is based on the first geographic region of service: Philippines. Hence 3,500,000 $QUBE Tokens will be first released.

c. The Solana Platform

We have chosen Solana as the most efficient and low energy blockchain technology by far. Solana is a web-scale blockchain that provides fast, secure, scalable, decentralized Apps. This blockchain platform is considered a top contender because of its lower costs and higher transaction speed. Its TPS (transaction per second) is at 50,000, compared to Ethereum at 13TPS, and Bitcoin at 5TPS. Solana has also prioritized smart contracts and this move allows it to take advantage of the emerging NFT markets.

d. The Carbon Credit Exchange Market

Carbon trade dates back to the Kyoto Protocol in 1997, which was replaced by the Paris Climate Agreement of 2015, to reduce greenhouse gas emissions. Each nation is allocated a certain number of permits to emit defined carbon dioxide levels. Any unused permits can be sold to other nations that want to emit more carbon dioxide than its allocated permits. Carbon credits are required by the government to permit a company to emit a regulated amount of carbon dioxide. There is no fixed price of carbon credit worldwide, as it depends on the jurisdiction and by market supply and demand. The weighted average price per ton for credits from forestry and land-use projects rise from $4.33 per credit to $5.60 in 2020. As per EU ETS (European Union Emission Trading Systems), there is a steady increase in the price of carbon. As of January 10, 2022, the benchmark EUA futures price is at €80.09, per tonnes, or US$90.73 On a long term (EU ETS)

Figure 8: Price of CO2 from EU ETS from February 2008 to July 2021

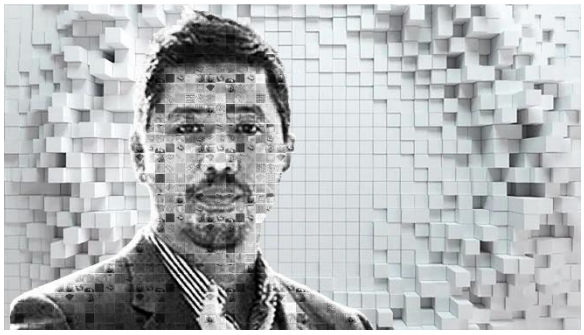
7. Technology and Country Roadmap

- Philippines
- Indonesia
- India
- Nigeria
- Brazil

Figure 9: Roadmap

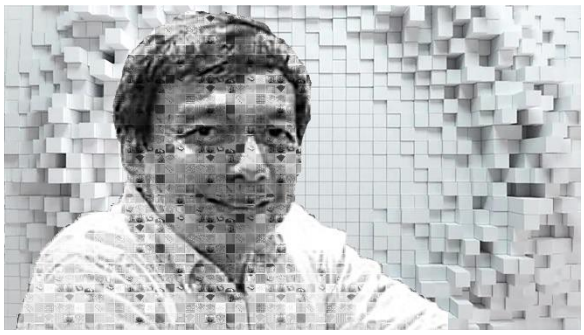
8. The People Bio

System Architect / Founder / CEO



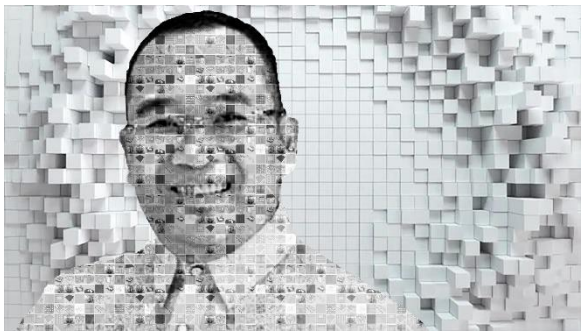
JP Calma is responsible for setting the overall technical direction and execution of the product/service strategy for the company. He was the CEO of MDCC, the pioneer and founder of Interior Construction in the Philippines since 1975. He resigned himself from the position to pursue this startup. He finished finance, entrepreneurial, and construction engineering research studies at the De La Salle University Philippines 2002, Asian Institute of Management Philippines 2004, and MIT Cambridge USA 2006 respectively.

Director of Service & Logistics / Partner



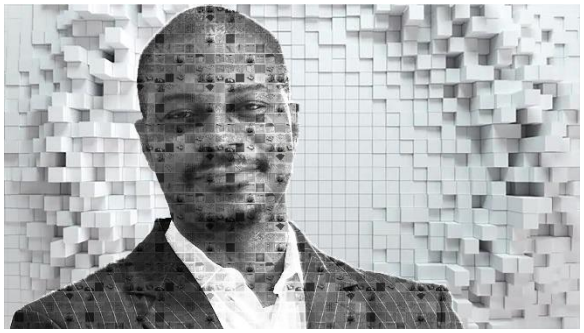
Max Aton, Jr. is a project construction management professional with 28 years of experience. He was involved in several projects from residential & commercial buildings to huge engineering projects like hydropower plants. He graduated Bachelor of Science in Civil Engineering from the University of San Carlos, the Philippines in 1989 and a Master of Construction Management from the University of New South Wales, Sydney last 1992. Long years of troubleshooting projects involving multi-disciplines have enhanced further his knowledge in management. He effectively synthesized theories in project implementation to proactively manage issues related to quality, cost, and time.

Director of Commercial & Legal Affairs / Partner



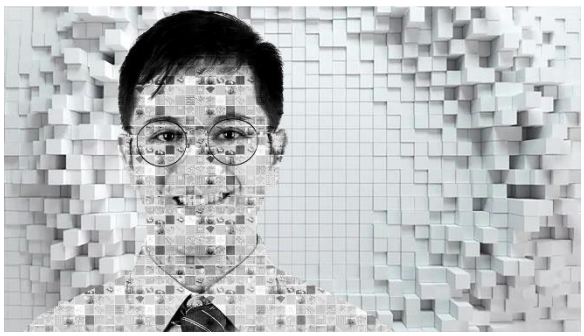
Alex Christopher Subijano is a practicing lawyer and a civil engineering graduate who hailed from San Beda University-Manila and Mapua University respectively. His growing professional passions are focused on the disruption of traditional operative models on the Built Environment and synergize the spheres of Legal industry, Engineering Education, and management through emerging technologies of today. With his legal and technical background all rolled into one, Alex's 15 year-experience in both fields will surely make him a pillar in commercializing this industry into a new category of project delivery.

Regional Advisory for Africa Region



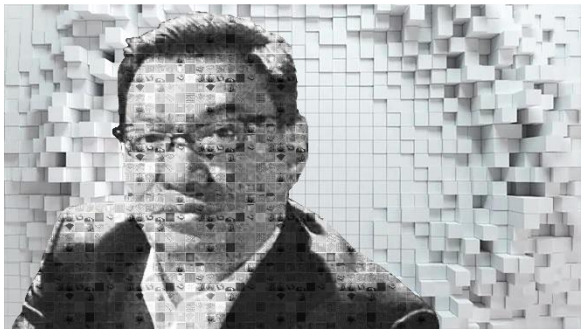
Gbadebo P. Rhodes-Vivour is the creative director at Spatial Tectonics, Nigeria. His specialty includes alternative design and construction systems that increase affordability and access to "affordable luxury". To this end, he has designed and worked with state governments on policy for modular buildings using repurposed containers and alternative construction materials. He is also the design lead for commercial and large-scale urban projects such as the Delta International commercial city. Before founding Spatial Tectonics, he worked in Nigeria's top architecture firms and Franklin Ellis architects in the United Kingdom. He also worked with the Chinese government on affordable housing design in anticipation of the Beijing Olympics as well as the American government in rebuilding New Orleans after Hurricane Katrina. He has a master's in Architecture from the Massachusetts Institute of Technology, USA, and a Bachelor's from the University of Nottingham, UK.

Director of Operating Systems (COS) / Partner



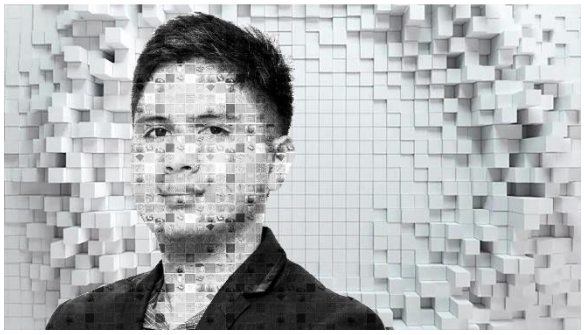
Luis S. Silvestre Jr., Ph.D. obtained his Bachelor of Science 2015, Master of Science 2017, and Doctor of Philosophy in Mathematics 2021, from Ateneo de Manila University, Philippines. His research interests include mathematical physics and graph theories, Information Technology and Machine Learning.

Advisory on Information Technologies



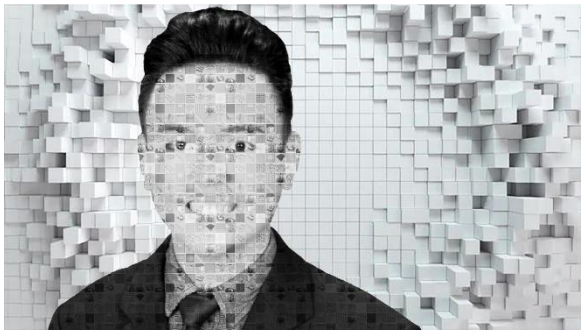
Sappy Saplala is the Solution Engineering Director of the Philippine subsidiary of Oracle Corporation, a global leader of enterprise software that spans a portfolio of cloud, applications, software, and hardware. Before being part of Oracle, his career has spanned the telecommunications and financial services industries. This gives him the credentials to be the trusted advisor of various C-level executives both from the line of business and technology. His engagements with organizations of various industries and sizes have allowed him to design several technology solutions that provide the benefits of digital transformation. Sappy takes pleasure in realizing visions into reality with the power of data and technology.

Director of Data Systems (CDO) / Partner



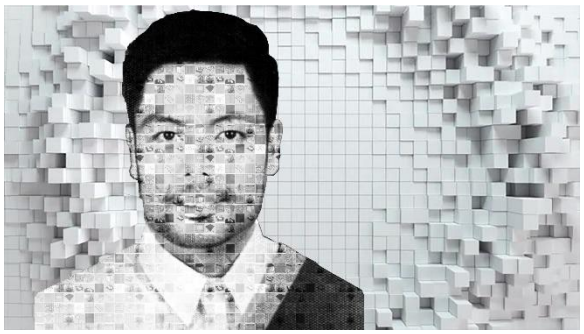
Kristoffer Dave Tabong is the Construction Systems Director of Multi-Development & Construction Corporation (MDCC). His eight years of experience in the civil engineering industry involves structural engineering design, BIM coordination, and project management. Kris is a Magna Cum Laude graduate of the University of Santo Tomas, and a board top notcher in Civil Engineering and Master Plumber, with a Master's of Science in Data Science at the Asian Institute of Management, Philippines.

Research Advisory on Global Sustainability



Kristopher Ray S. Pamintuan, Ph.D. is a licensed Chemical Engineer currently working as a full-time Associate Professor at Mapua University. He teaches undergraduate courses and graduated in Chemical Engineering programs. Ray has specialized in renewable bioenergy research, particularly in applications of Plant-Microbial Fuel Cell technology to concurrently generate green electricity and produce food in integrated agricultural systems while lowering methane emissions at the same time. He also dabbles in other fields of research such as 3D-printing electrochemistry applications, water, and wastewater treatment, insect biomass production for waste-to-FFF (food, feed, fuel), aquaculture, and preparation of Life Cycle Assessments.

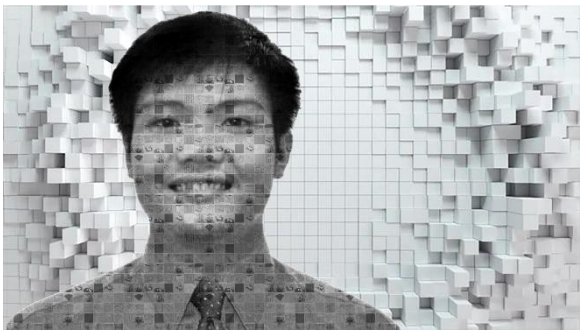
Advisory on Technology Development



Anthony Seumal is an IT professional throughout most of his career, He has always been passionate about building relationships and adopting new concepts that better himself, his team, organization, and the IT community.

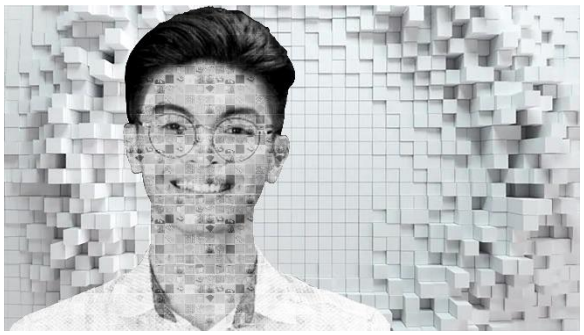
He has had the experience of working as a Software Developer, Software Tester, Business Analyst, and Agile and Project Management. He was involved in different projects and underwent Digital, Agile, CX/UX, Data Science, and Design Thinking certification training to build his capabilities in the changing business landscape. He is also an Executive MBA graduate at Asian Institute Management with a specialization in Digital Transformation (awarded in IE Business School in Madrid, Spain), Management Development Progam graduate in the same institution with Superior Performance award, and a recent Cambridge University Judge Business School – Grand Winner in Venture Creation Program in the UK. Presently, he works for Cambridge University Press as Head for Software Quality. Cambridge University Press's mission is to unlock people's potential with the best learning and research solutions.

Composite Design Engineer / Partner



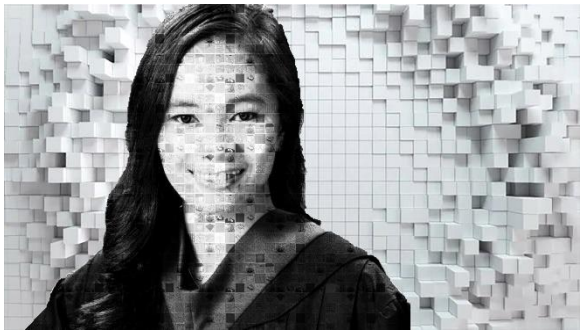
Jazneil Bello is a licensed Civil Engineer currently working as a full-time Composite Design Engineer and researcher at Multidevelopment Construction & Corporation. Jaz has specialized in Structural Design & Analysis of structures such as buildings & towers. Jaz has also specialized in Steel Connection Design that focusing on how to connect the steel assemblies using steel connectors, bolts, and welds. Using his Knowledge in Composite, Jaz is also doing Boat Design Calculation, Assessment, and Fabrication Process planning.

Generative Designer/ Parametric Modeler



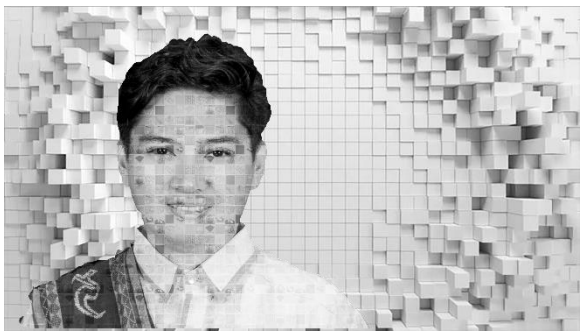
John Rey Lingad is currently working as a full-time parametric programmer in MDCC. Specializes in digital modeling and parametric modeling, primarily using grasshopper with some experience using C# and python. Also dabbles in other fields of research such as generative design, computational design, 3d printing for generic fabrication, woodworking, digital sculpting, and animation.

Design Architect / Partner



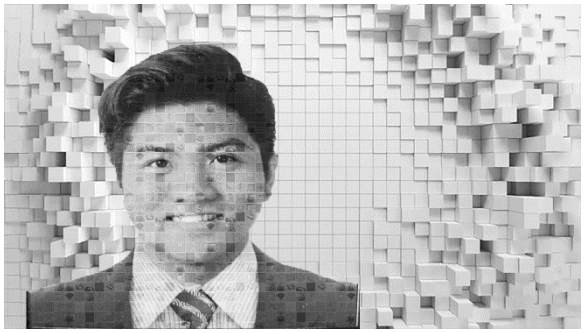
Nasuha Hyrene Ranain is a graduate of Architectural Technology and BS in Architecture. She is currently working as BIM CUM Project Architect at Multi-Development Construction and Corporation. She focuses on the production and coordination of FCD Drawings (2D and 3D drawings and references) among the internal and on-site team, Virtual Design and Construction Department's BIM Team, and Domain Specialists. She also is committed to the developments of other design and planning schemes of other projects including Pre-Engineered Buildings (PEB), Engineering-Production and Construction (EPC), Trailer Truck Designs, and other design innovations. She also helps in the research for building and construction materials.

Chief Finance Officer



Kier Allan Ferriol is the current chief finance officer of Multi-Development & Construction Corporation (MDCC). He is a Certified Public Account with 7 years work experience being in the private sector, focusing on quality assurance and control, and financial analysis. He graduated Cum Laude from University of the East with a degree of Bachelor of Science in Accounting Technology. He completed his Accountancy Degree at Emilio Aguinaldo College. He earned his Master's Degree in Business Administration at the University of the Philippines and completed his training for CFO Leadership Program at Asian Institute of Management (AIM).

Chief Token Officer



Xyz Fiegalan An economic strategist in the Web-3 space specializing in Tokenomics, Game Theory, and Business & Revenue models within the DeFi and GameFi space, since late 2020s. Xyz views Blockchain technology as a tool to optimize multiple sectors in the economy including, but not limited to, Financial Markets, Banking & Finance, International Trade, Healthcare, Agriculture, Asset Ownership, and Digital Identity. He completed his Bachelor's degree in Business Economics, Cum Laude, at Central Luzon State University. He's currently taking his Master of Arts in Economics at the University of the Philippines Diliman.