



H O M E Q U B E

Whitepaper -  
Updated

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## Contents

1.	What is Homeqube? .....	3
2.	Home-building For All / Problems to be Solved .....	3
3.	Stakeholder Ecosystem Development .....	5
3.1.	Sphere of Web 2 and Web 3 Players.....	5
3.2.	Call to Action Ecosystem Matrix by Being a DAO MEMBER.....	6
3.3.	Our Building Journey Experiences Calls for Actions .....	8
3.3.1.	Be a member of our DAO community to Design and Earn (D2E) .....	8
3.3.2.	Produce Parts: Join Our Addititve Manufacturing Community .....	9
3.3.3.	Sell your Parts: Be amember of the Manufacturing Community.....	10
3.3.4.	Play and Build: For Home-Builders.....	10
3.3.5.	Admin Participation.....	10
4.	Corporate Agenda: Design for Manufacturing Franchise.....	11
4.1.	We match them to the real world manufacturers.....	11
4.2.	We share NFT royalties on our knobs.....	11
4.3.	We promote 3D printing communities.....	11
4.4.	We promote generative design/generative art to other marketplaces.....	11
4.5.	We are a decentralized Deep Tech/Home Tech.....	11
5.	Qube Transaction and Value Exchange.....	12
6.	Qube Tokenomics .....	12
6.1.	Token Distribution.....	13
6.2.	Initial Coin Offering and First Batch of Minting .....	13
6.3.	The Solana Platform .....	13
7.	Carbon Credit Issuance for Building Homes .....	13
7.1.	The Carbon Credit Exchange Market.....	14
8.	Technology and Country Roadmap.....	14
	The People Bio.....	15

## 1. What is Homeqube?

Homeqube is a home-building application powered by artificial intelligence (AI) that empowers the user to take part in home-building. Through its built-in network of manufacturers, suppliers, design engineers, fabricators, the DAPP empowers the entire industry of home-building at scale.

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.

What makes our home design experience unique is that 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 a the ideal home that fits their requirements.

The Homeqube DAPP 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 process inefficiencies, and a sluggish home-building process that can only bring about more shortage in the longer term.

Homeqube is being developed by a team of experts from multiple disciplines with years of experience in architecture, engineering, manufacturing, and construction, and the emerging knowledge integration from decentralized communities, building, and design knowledge that can be demystified, leveraged, redistributed, for constant delivery for everyone. One of our main postulates is that the majority of built homes were built on top-down processes. We want to introduce a bottom-up approach which we see as the next legacy building processes which is only possible by emerging technologies such as blockchain, and Machine Learning.

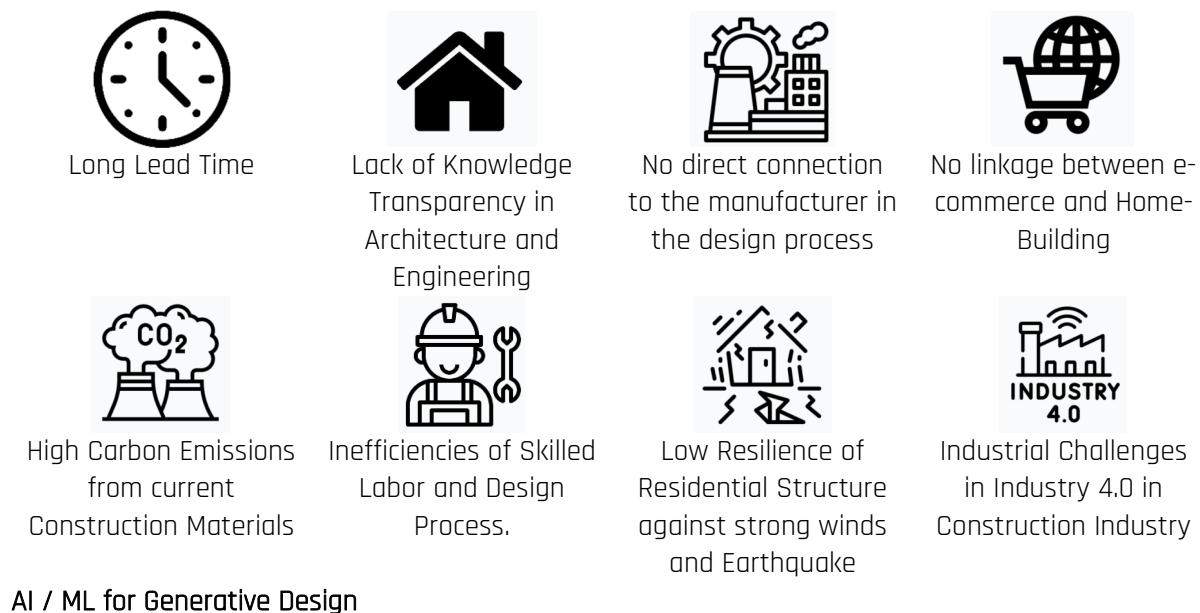
Our mission is to make the home-building processes accessible to all to serve humanity's aggregated requirements for long-term sustainability. Our vision is to provide a better Home-Building Industry through our decentralized 'socio-techno-economy' APP that will create more justice, liberty, creativity, for posterity.

Our Core Values:

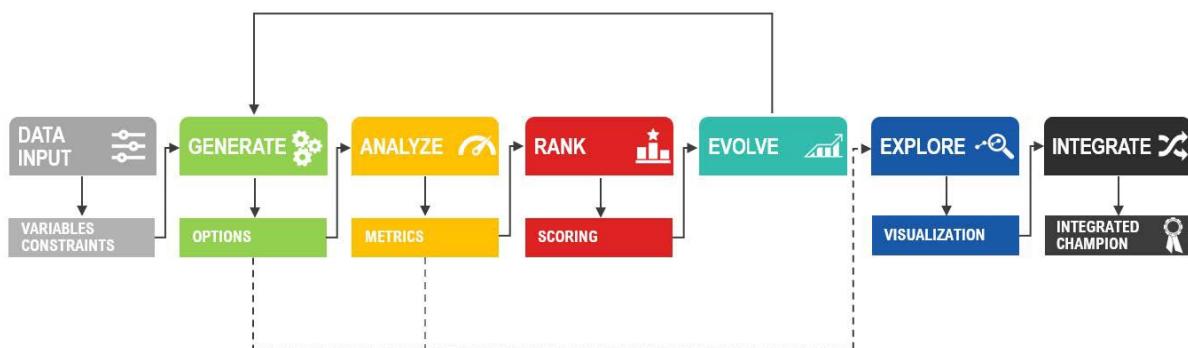
1. Above Board & Corporate Transparency
2. Love for God and Neighbor.
3. Home-building For Everyone.

## 2. Home-building For All / Problems to be Solved

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



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 give users different possible design combinations, and come up with the most optimal design.



Here are homecube we'll 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 will be unearthed. Our system will push both the human and machine capacity in generating creative ideas.

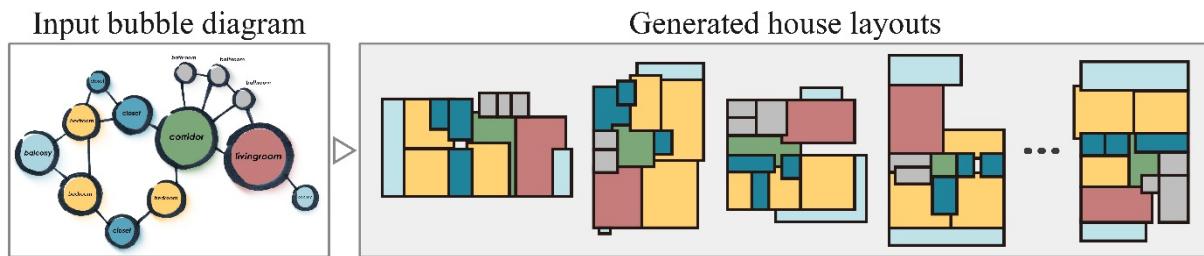
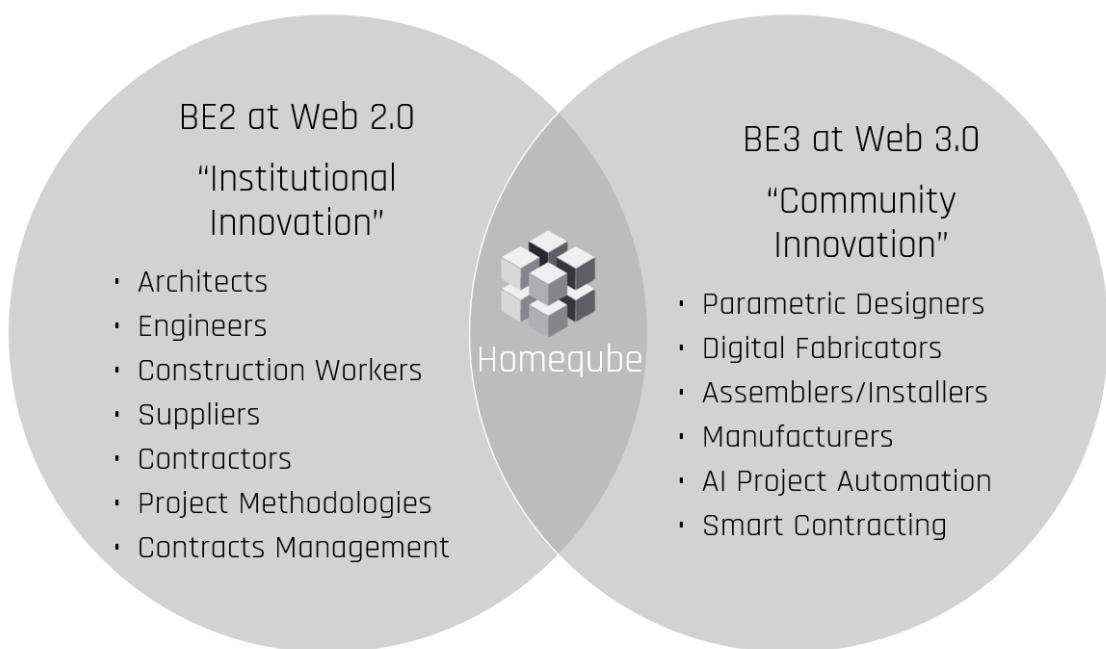


Image extract from: <https://ennauata.github.io/housegan/page.html>

### 3. Stakeholder Ecosystem Development

#### 3.1. 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 both web 2.0 and web 3.0 to capture process innovations at different types of contributory-participation. By combining the two ecosystems, the Built Environment (BE) will be synergized into the future creating a semantic web that can serve at an industrial-revolutionary scale.



### 3.2. Call to Action Ecosystem Matrix by Being a DAO MEMBER

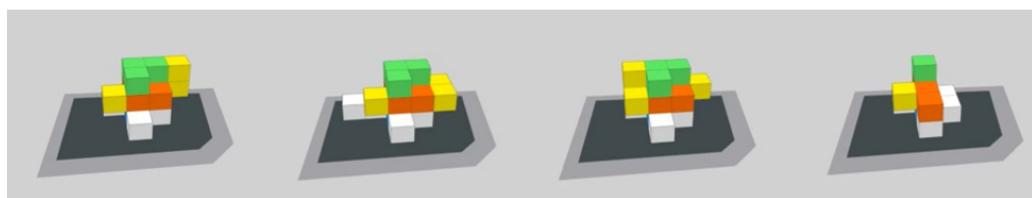
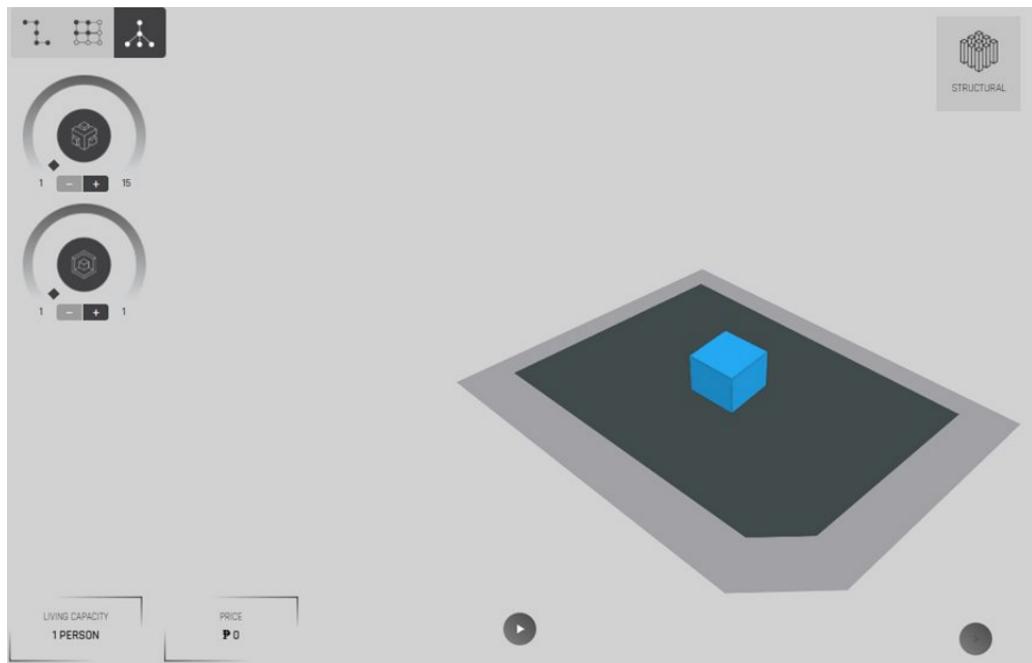
Our DAO is based on Ontlogical Planning on Sytem Architecture. System Architecture at the very least, is the basis of the behaviour of components within a system domain. And at its most, system architecture can accommodate limitless kinds of new beings and new domains not just limited to parts and components, but also models on how it is sensemaked invariably.

Homeqube offers options on how you could earn and use Tokens we call (QUBE) inside the platform. These calls to action are the recommended paths to get the most out of our product:

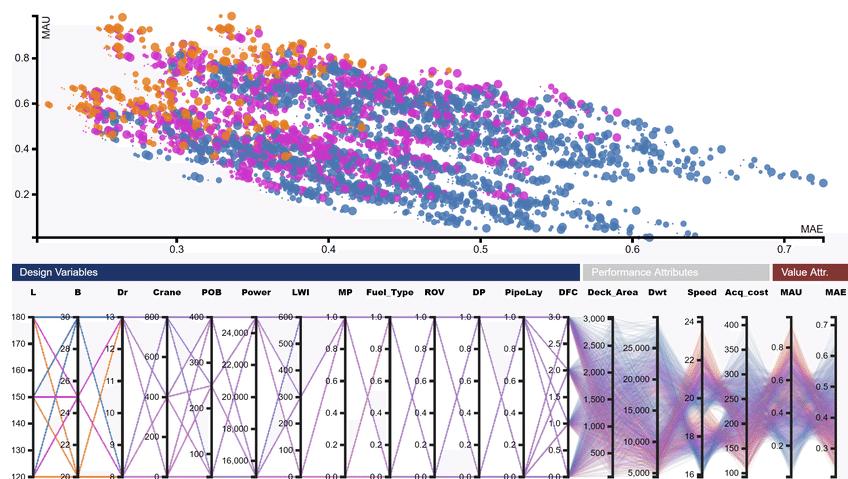
- To Submit Your Parts into our Platform.
- To Submit Your E-Shop as an Manufacturer into our Platform.
- To Participate on several opportunities into our DAPP such as: Design to Earn (D2E), Construct to Earn (C2E), Manufacturer to Earn (M2E),
- To Sell your own NFT.
- To Submit your Lot Information.

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	1. To design parts, knobs  New Knob from Generative Art New Sellers of Parts  2. To produce parts  3. To procure parts	5. Admin Participation  Lease Knob earnings through NFTs / Building Docs for Building	

At the heart of the Dapp are the "Knobs" to build the houses. 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 others value-precepts to guide you in the design-decisions. As the App's name implies, the massing of the home is based on cubes which represent a volumetric representation of a proposed system.



We intend to develop CI/CD of Knobs which we coin as "System Products" for the BE's full optimization case uses which encompasses engineering, architecture, and construction multi stakeholder case uses. Our first Proof of Concept (POC) of the DApp, which will be available to the public, will have the first set of Knobs which can produce the first massing structure. Users can have various arrangement combinations of the cubes which are constrained within the allowable buildable area and a maximum number of stories indicated in the input for your lot information.

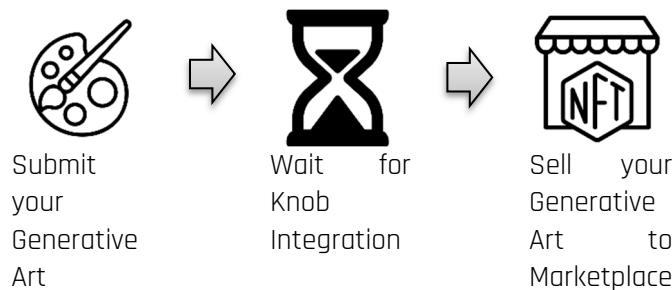


### 3.3. Our Building Journey Experiences Calls for Actions

#### 3.3.1. Be a member of our DAO community to Design and Earn (D2E)

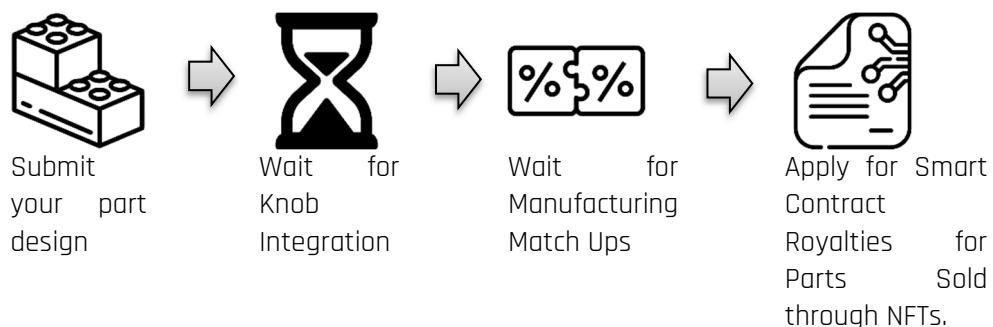
You can participate in our DAPP games using your QUBE tokens, using your own designs. In return, these parts can be sold in NFT marketplaces. Further, your parts will have deep integrations into our system architecture platform (SAP.)

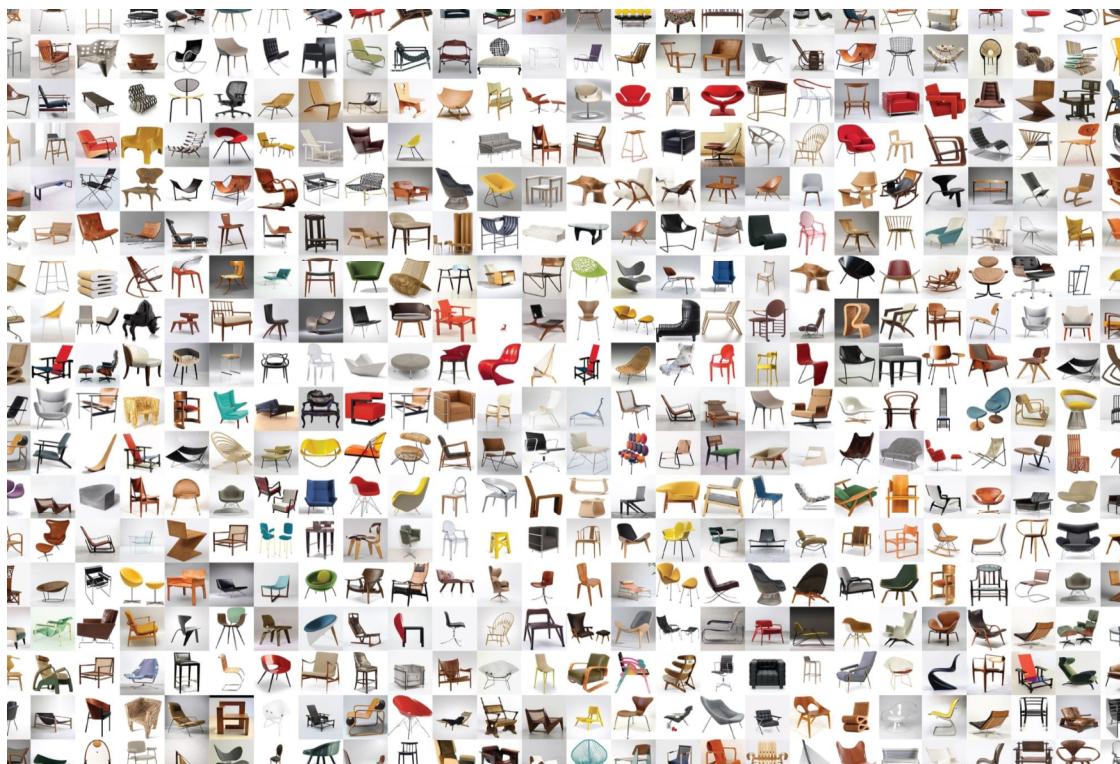
**A. Generative Designers' Path** - A generative designer is a type of user that uses computational and algorithmic techniques in creating geometrical arts. Generative concepts are with time and motion and algorithm embeds that could directly be used for Home Building design-build processes. If you are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



#### B. 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:

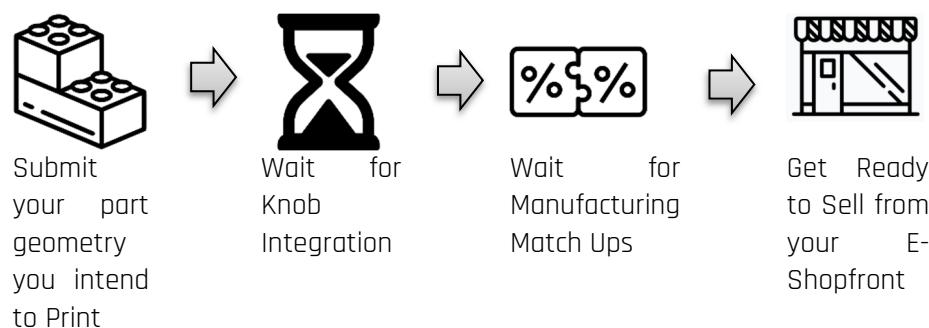




The creation of Non Fungible Tokens, or NFTs, give freedom to graphics artists, generative designers, to sell their digital work of Generative Art and protect their intellectual properties. By augmenting decentralized apps and blockchain you can earn Tokens every time your created part and design are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

### 3.3.2.Produce Parts: Join Our Addititve Manufacturing Community

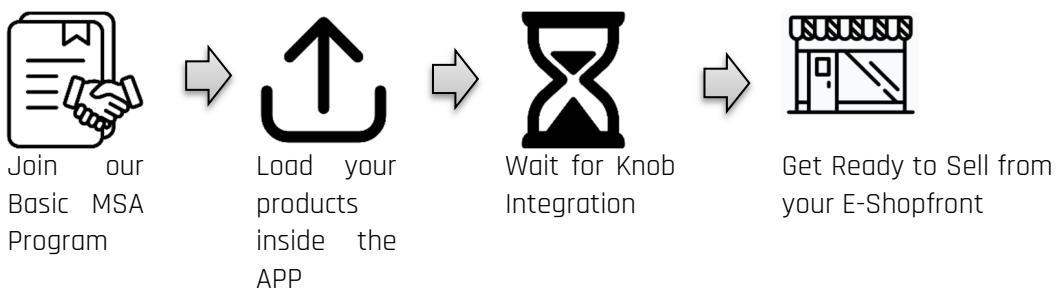
Being an additive manufacturer to us doesn't require you to have a factory. You can create your ecosystem of parts through our DAO community and have an E- shopfront in your backyard. You can also 3D print parts and designs available in the App, and start making your business. The suggested path for it would be:



### 3.3.3.Sell your Parts: Be a member of the Manufacturing Community

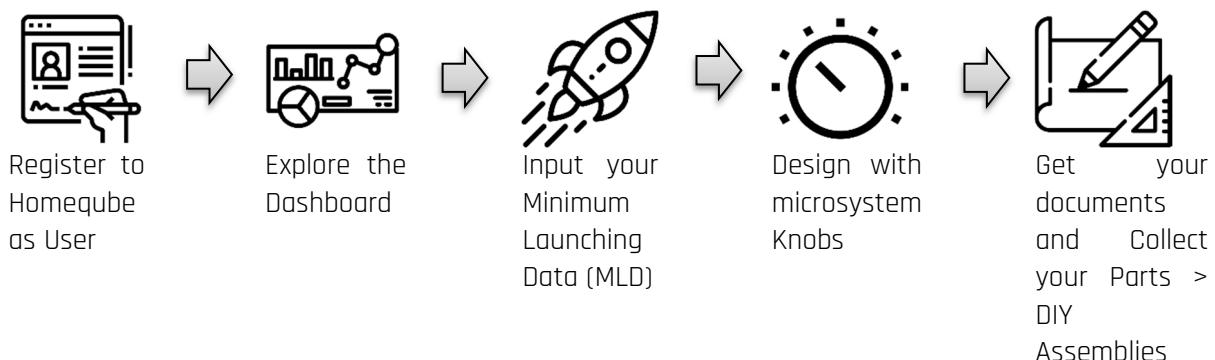
You can contribute to the growth of our Ecosystem under our formal Manufacturing community. Our MSA (Master Service Agreement) program will be open to manufacturers, suppliers, and distributors who would want to include their products inside the Dpp. These products include architectural, structural, 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. Our approach will remove the strenuous process of canvassing and searching for the right product the user need in their home building design, and most of all, all products that will be showcased are for sure to be Knob integrated.

This is the recommended path for selling your parts under the MSA program:



### 3.3.4.Play and Build: For Home-Builders

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 Homecube DApp, this is the recommended path.



### 3.3.5.Admin Participation

The administrator's role in this ecosystem is to monitor and apply measures to ensure the fluidity of tokenomics. We aim to maintain the continuous usage of the app, trust in the value of the token, and the balance usage of tokens for different uses. These can be done by applying control mechanisms in the number and value of the QUBE tokens. These mechanisms include the following

- Controlling the QUBE token required per service

- 
- Controlling the amount of QUBE earned per service
  - Minting and burning of tokens in events of undersupply and oversupply of tokens.
  - Detecting loopholes and exploits in the system.

## 4. Corporate Agenda: Design for Manufacturing Franchise

### 4.1. We match them to the real world manufacturers

With Homeqube, Home Parts Designers and Manufacturers have never been this close to each other. Create parts models and the application will find the best match among manufacturers who are nearby, with available capacity, and who are already producing parts similar to your 3D models.

### 4.2. We share NFT royalties on our knobs

While NFT only has one owner at a time, NFT royalties can be shared. Likewise, our knob royalties are also shared among parts designers who had their design successfully accepted by the Homeqube system.

### 4.3. We promote 3D printing communities

Be a member of additive manufacturers using **3D printing**, giving you the freedom to introduce your products through our parts ecosystem. Start with finding the best machine for printing through our recommendations.

### 4.4. We promote generative design/generative art to other marketplaces

Generative arts designers do not only need an environment to create. They also need to secure ownership and access to a marketplace. This is possible through converting arts into a Non-Fungible Token (NFT). This enables access to secure marketing and selling. All of these happen in the Homeqube app.

### 4.5. We are a decentralized Deep Tech/Home Tech

The decentralized ecosystem of Homeqube makes it possible for stakeholders to use the power of blockchain and web 3.0 features in the app. With the power of decentralized apps (Dapps), smart contracting, and blockchain, stakeholders are assured that their works are securely stored and have ownership. Furthermore, users can earn tokens by participating in the games provided by the app.



Join game challenges



Show your house in a VR  
environment



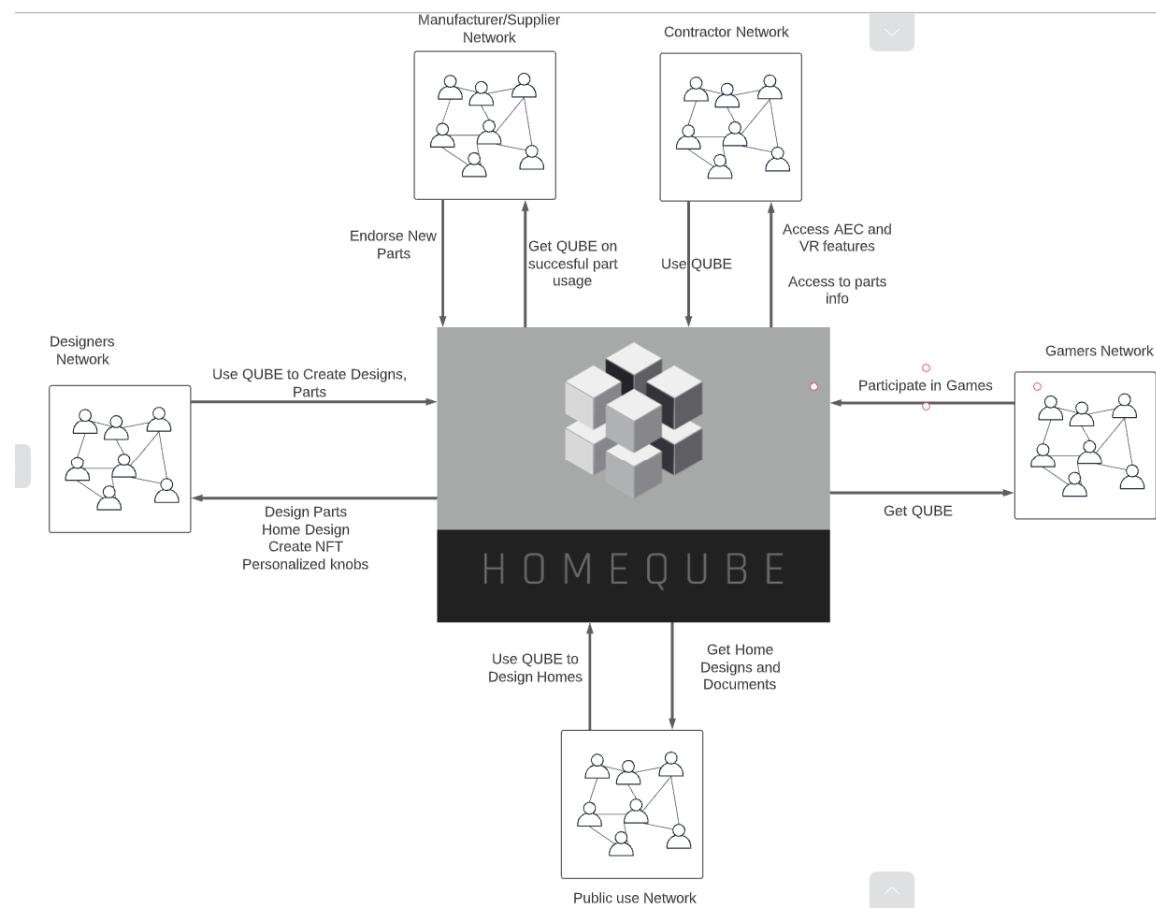
NFT



Earn tokens by selling  
your parts design

## 5. Qube Transaction and Value Exchange

The standard token currency of Homecube is QUBE. The QUBE can be in a variety of ways, depending on the user's goal. Each of the stakeholder network communities will be handled by decentralized autonomous organizations or DAO. This DAO will make the community transparent, and controlled by the organization members' transactions wthin the ecosystem framework.



## 6. Qube Tokenomics

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

## 6.1. Token Distribution

Type	Token Amount	% of total supply
Technology Development Seed - 7 year plan	15,000,000	1.5%
(Launchpad) Strategic Sale	50,000,000	5.0%
Private Sale	120,000,000	12.0%
Ecosystem Activities (Deep Public Architecture Games, NFT and Metaverse Economies User Cases)	320,000,000	32.0%
ESG Initiatives	5,000,000	0.5%
Ecosystem Support Reserve	320,000,000	32.0%
Public Sale	160,000,000	16.0%
Partners / Advisors	5,000,000	0.5%
Marketing/Listing	5,000,000	0.5%
Total	1,000,000,000	100%

You may see the tabulation in the excel file by clicking [here](#).

## 6.2. Initial Coin Offering and First Batch of Minting

The ICO token offer rate will start less than 3 dollars (TBA) per Carbon Credit (CC) which will be equivalent to the rate of 1 Qube token. The value of a Qube token is expected to reach 100 dollars in the longer-term mirroring the (CC) Carbon Credit Exchange Market. We will be releasing 700,000 Homes worth of CC for five years in the Philippines. The estimated CC worth of 700,000 Homes would be 3,500,000 Tons., hence 3,500,000 Qube Tokens will be first released. 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 of 200,000,000 Homes worth of CC. (A home is pegged at an average of 100 sq. m. plot at a single storey).

## 6.3. 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.

## 7. Carbon Credit Issuance for Building Homes

The Qube Token price is based on the Apps' accumulated carbon credit (CC) Tonnage from parts purchased compared to Reinforced Concrete and Steel counterparts. The more home parts purchased through the App, the higher will be the value of Qube over time. Homeqube will be registered to a CER body to document the amount of carbon emission savings by using the App's parts inventory. In this way users will be more confident that their home building efforts result to a more environmentally friendly world scenario.

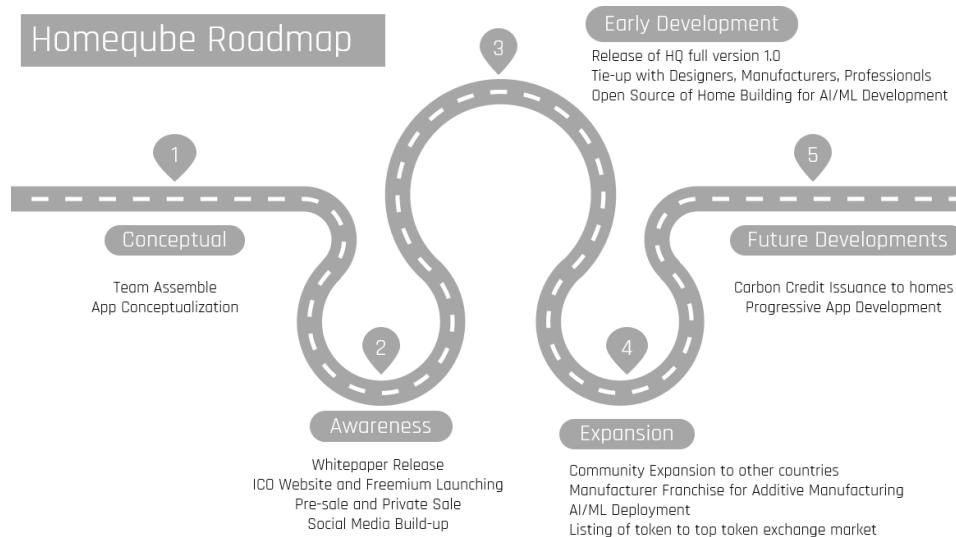
## 7.1. The Carbon Credit Exchange Market

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)



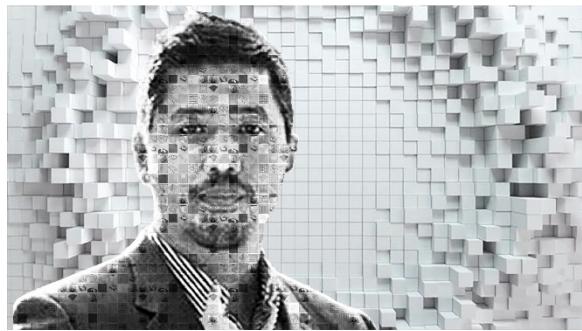
## 8. Technology and Country Roadmap

- Philippines
- Indonesia
- India
- Nigeria
- Brazil



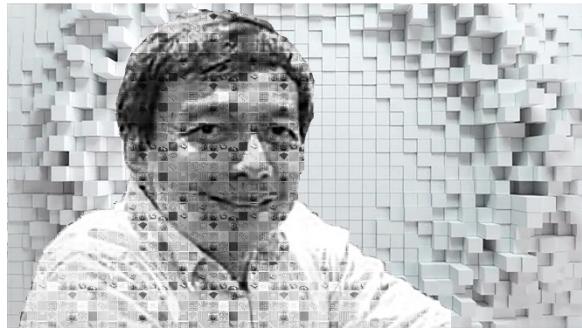
## The People Bio

Director of Business & Enterprise 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

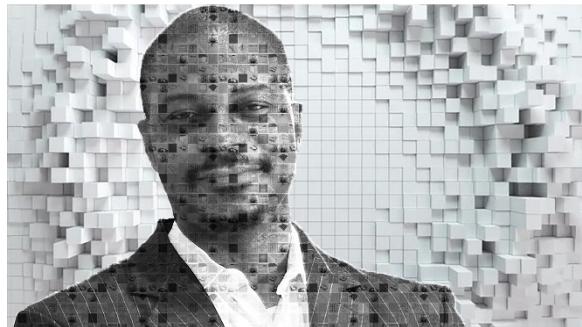
knowledge in management. He effectively synthesized theories in project implementation to proactively manage issues related to quality, cost, and time.

Director of Commercial & Legal Affairs / Partner

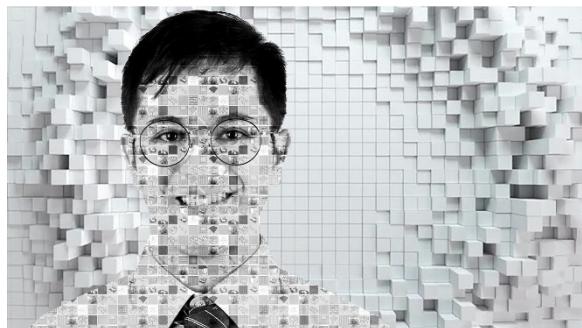


**Alex Christopher Subijano** is a practicing lawyer and a civil engineering graduate who hailed from San Beda University-Manila and Mapua University respectively. His growing professional passions are focused on the disruption of traditional operative models on the Built Environment and synergize the 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

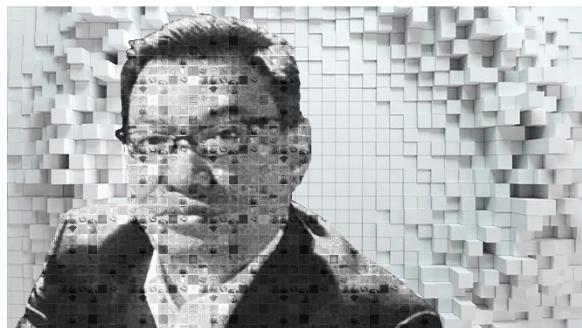
pillar in commercializing this industry into a new category of project delivery.

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.

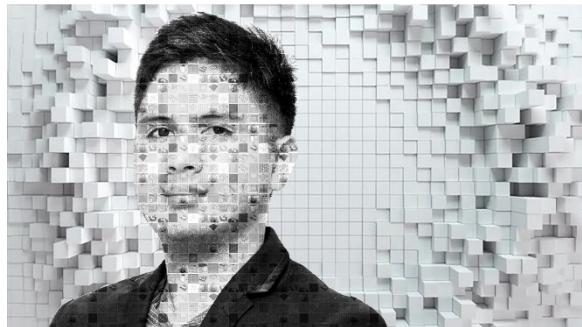
Director of Operating Systems (COS) / Partner

**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.

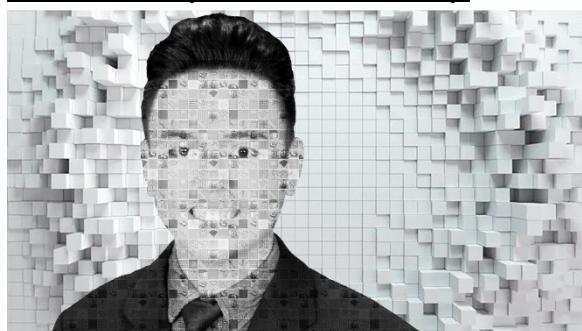
Advisory on Information Technologies

provide the benefits of digital transformation. Sappy takes pleasure in realizing visions into reality with the power of data and technology.

**Sappy Soplala** 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

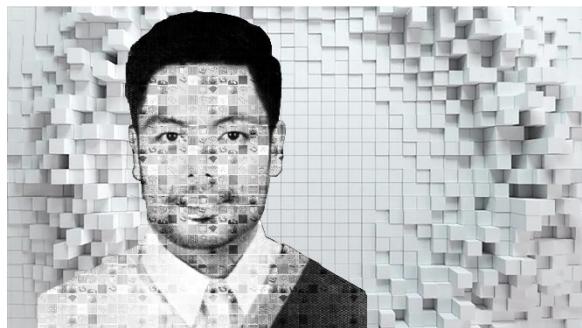
Director of Data Systems (CDO) / Partner

**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

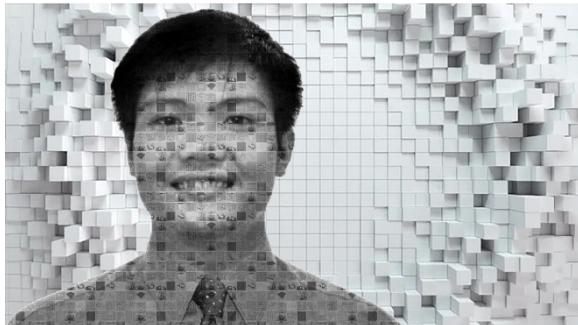
research such as 3D-printing electrochemistry applications, water, and wastewater treatment, insect biomass production for waste-to-FFF (food, feed, fuel), aquaculture, and preparation of Life Cycle Assessments.

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.

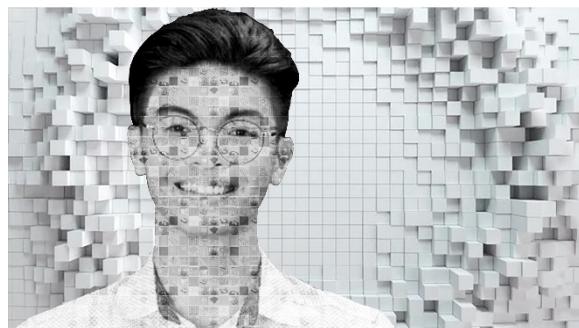
He has had the experience of working as a Software Developer, Software Tester, Business Analyst, and Agile and Project Management. He was involved in different projects and underwent Digital, Agile, CX/UX, Data

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 Program 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

Calculation, Assessment, and Fabrication Process planning.

**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

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

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.

**Nasuha Hyrene Randain** 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-