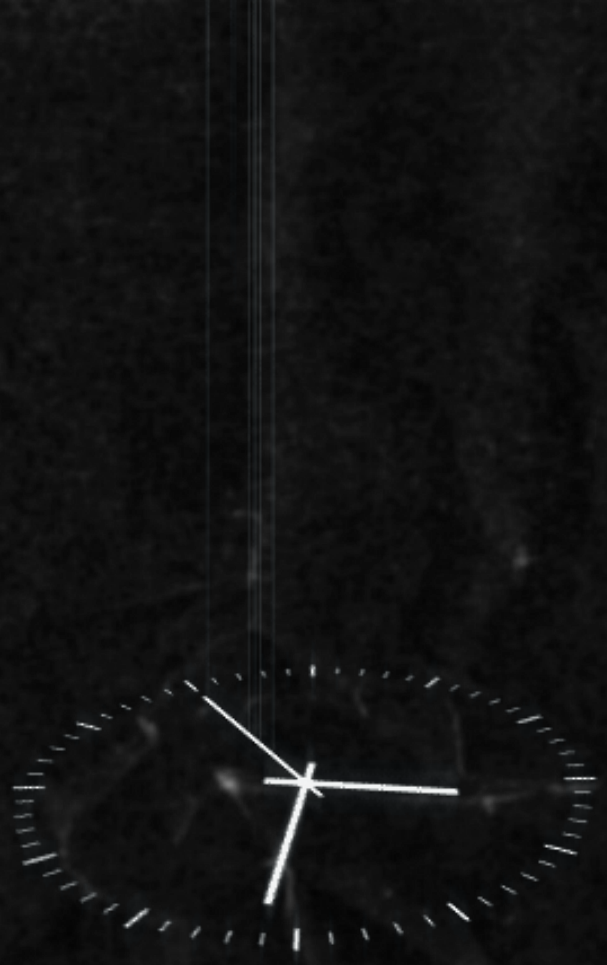
META-NAEUM


META-NAEUM
A Platform - For Architects, By Architects
Creativity without Constraint
Aadya Garg



“As an architect, you design for the present, with an awareness of the past, for a future which is essentially unknown.”

— Norman Foster, Architect & Designer

IN THE METANAEUM

TIME & SPACE

The Metaverse and Architecture

DECODE TECTONICS

Integration /
Ideation

DECODE PLATFORM

Context / The Tangible

ARCHITECTURE & SPACE

Operation

DECODE PROGRAM

Programmatic Delineation /
Topology

COLLATE & COMMUNICATE

Design Collation /
Testing

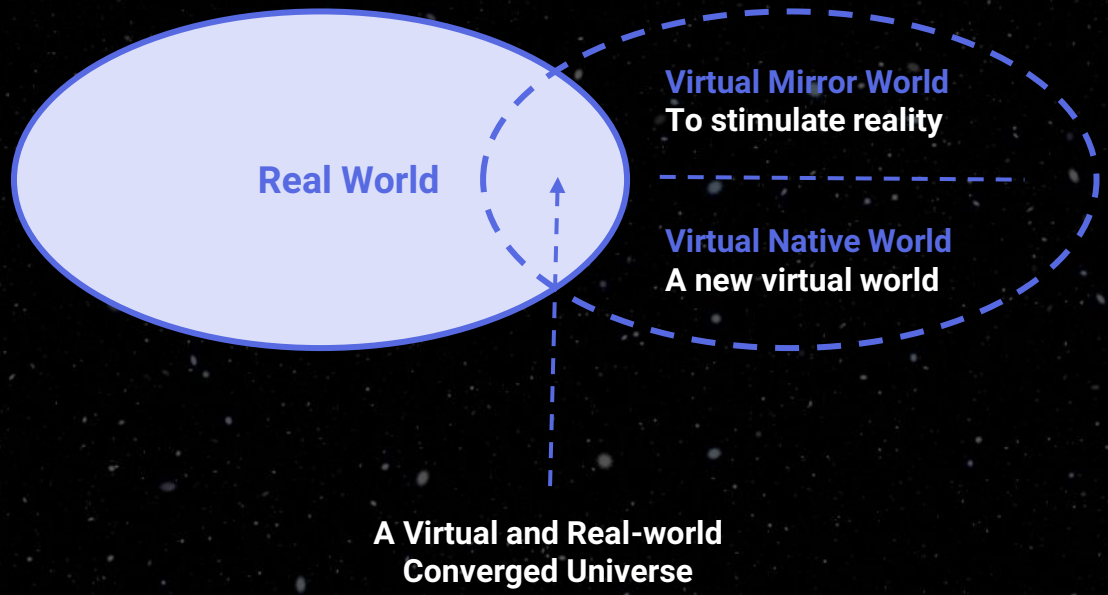

01 / TIME & SPACE:
The Metaverse &
Architecture

WHAT IS THE METAVERSE?

"Meta" comes from the Greek meta, which means *across or after or something transcending,* and the word “verse” comes from the *universe*. Metaverse is something that transcends the universe.

It is an evolution of the internet and an immersive virtual realm that merges with the physical world. It is considered to be Web 3.0, a shared three-dimensional digital platform where people can shop, work, play, and hang out together in real time.

METAVERSE

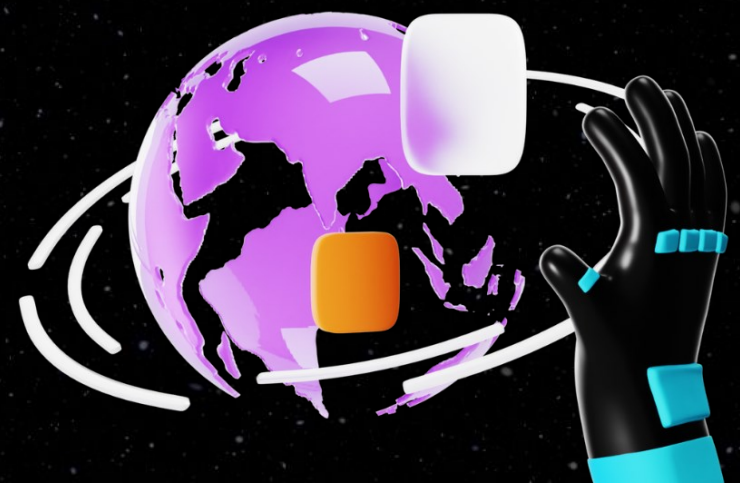


ELEMENTS OF THE METAVERSE

Digital Currency
Marketplace
NFTs
Infrastructure
Device
Independence
Gaming
Digital Assets
Social Events
Recreational
Spaces
Online Shopping

Workplace
Institutions
Social Media
Digital Humans

Social
Interactions



METAVERSE 101

/ KEY POINTERS FROM BASE RESEARCH

What is the Metaverse?
How did it originate?

Meta Worlds

How does Meta work?

How do you access Meta?
What is the meta economy?

Meta Architecture

Meta Architects

Social
Interactions &
Shifting Notions

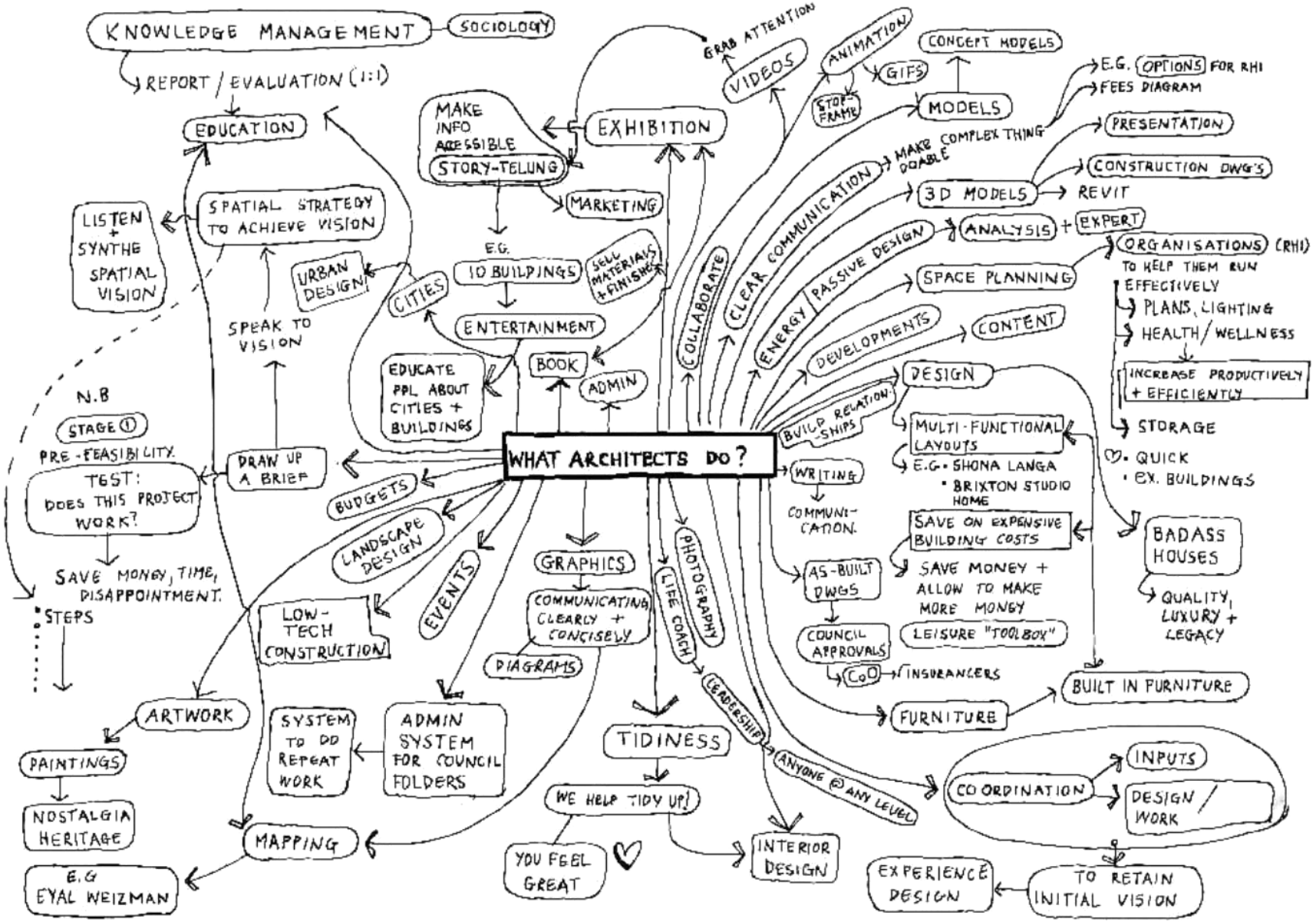
Land in Meta

Tools to design Meta

Technologies
Powering Meta

- Athenaeum has a rich history in promoting learning and knowledge sharing.
- Originated from the temple of Athena in ancient Athens where poets read their works.
- Athenaeum was a cultural institution that promoted learning, culture, and knowledge sharing.

COLLABORATIVE ARCHITECTURE: Enabling Exchange and Innovation



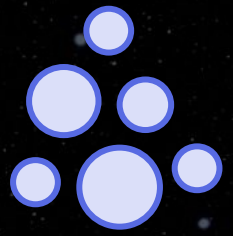
Source: *Thorsten Deckler via Instagram @thethinking_hand*

WHAT IS OPEN-SOURCE ARCHITECTURE?

Originally referring to open source software (OSS), the term "open source" denotes code that is intentionally *created to be accessible to the public.*

"Open source" refers to code intentionally accessible to the public. In architecture, it promotes collaboration in designing virtual and physical spaces through shared tools, enabling professionals and citizens to work together.

OPEN SOURCE ARCHITECTURE



Like-Minded Architects & Designers

Sharing a common goal

Brought together

Built Environment can be designed, constructed, operated, and recycled

With increased
COLLABORATION, TRANSPARENCY & AN ETHICAL APPROACH

ASPECTS

STANDARDS - Encourages the growth of networks of non-monetary exchange (knowledge, parts, components, ideas) and remote collaboration.

ENGAGEMENT - Typically democratic, enshrining principles of open access and participation

DESIGN - Mass customization replaces standardization as algorithms enable the generation of related but differentiated species of design objects.

CONSTRUCTION - Enables sharing of and collaboration on the hardware involved in designing kinetic or smart environments that tightly integrate software, hardware, and mechanisms.

OPEN SOURCE ARCHITECTURE 101

/ KEY POINTERS FROM BASE RESEARCH

Processes

Acceptance

Obstacles / Vulnerability

Promotion

MEET

INSPIRE

COLLABORATE

DEVELOP

02 / THE METANAEUM:
A Vision for an Open and Collaborative Platform for Architecture and Beyond

WHAT IS THE META-NAEUM?

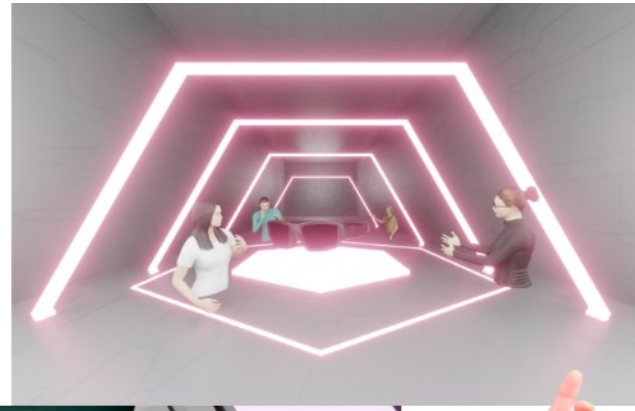
The Meta-naeum is imagined to be an assemblage entity where the multiplication of knowledge and ideas takes place with different media, such as the actualization of ideas or simply the visual interaction similar to that of a museum or gallery.

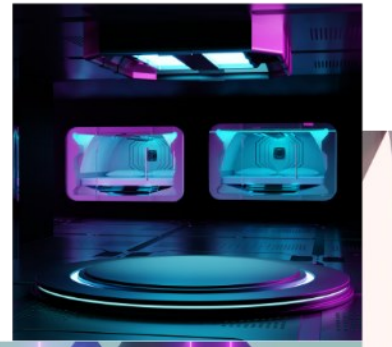
A Platform for Architects, by Architects –

- **Test-drive Unbuilt Buildings in *real-time***
- **Design spaces, forms, and functions for Artistic Interest**
- **Design without limitations**
- **Get feedback and have discussions leading to Enriching Dialogues, Collaboration, and Exponential Development.**

META-NAEUM

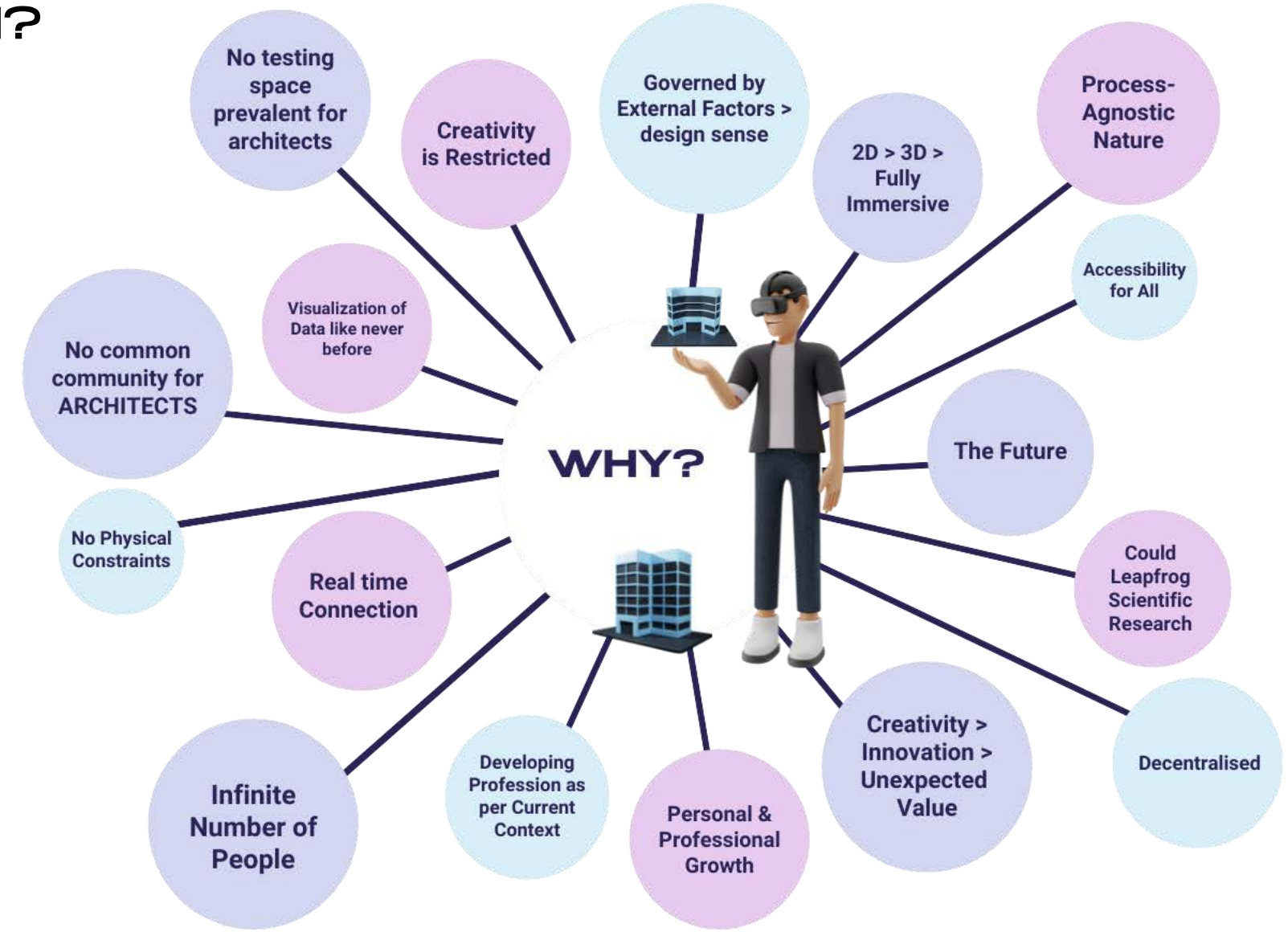
Metaverse **Athenaeum**





WHY META-NAEUM?

- **Lack of real-time, proportionate testing ground for Architects**
- **Inaccurate design evaluation leading to multiple revisions**
- **Simulations are costly and not to scale**
- **Risks and need for changes associated with construction**



HOW WOULD THE META-NAEUM WORK?

A Virtual Space in the Metaverse –

- Functioning as a platform
- For Architects, By Architects
- Where they are able to test-drive projects in Real-time
- Design without limitations

No Budget
No Height Restrictions
No Material Constraints

Social interactions

Personal & Professional Development

Creative Freedom

Limitless Resources

Endless Possibilities

A virtual world with possibilities of stimulations directed by the user as per defined parameters.

IDEOLOGICAL FRAMEWORK

01

FLEXIBILITY

- Flexible to accommodate various design ideas + configurations
- A wide selection of building tools, materials, and textures
- Highly customizable to meet individual preferences + design needs
- Adaptable to different skill levels and user requirements

02

SCALABILITY & BUILDABILITY

- Scalable for large-scale projects
- Capacity to support a growing user base
- Robust infrastructure to handle complex design and simulation algorithms
- Buildable for exporting and testing designs in the real world

03

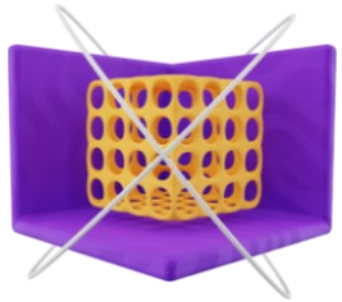
OPEN SOURCE & THE VIRTUAL WORLD (+ Sensory Technologies)

- Open source for collaboration, innovation, and customization
- Transparency + Accountability
- Simulates real-world conditions for testing designs under different scenarios
- Built with advanced sensory technology, (AR, VR, or XR) that can simulate different lighting conditions, weather patterns, + user interactions.
- Easily navigable and intuitive
- Accurately represents physical properties of materials for informed design decisions
- Simulates sound, touch, and smell, as well as visual aspects like lighting and shadows.

How would the Meta-naeum work?

IDEOLOGICAL FRAMEWORK

04



ARCHITECTONICS

- Knowledge of architectonic principles, including space, form, and function
- Provides tools for designing functional, efficient, and aesthetically pleasing spaces
- Simulates real-world conditions and constraints, such as building codes, structural limitations, and environmental factors.

05

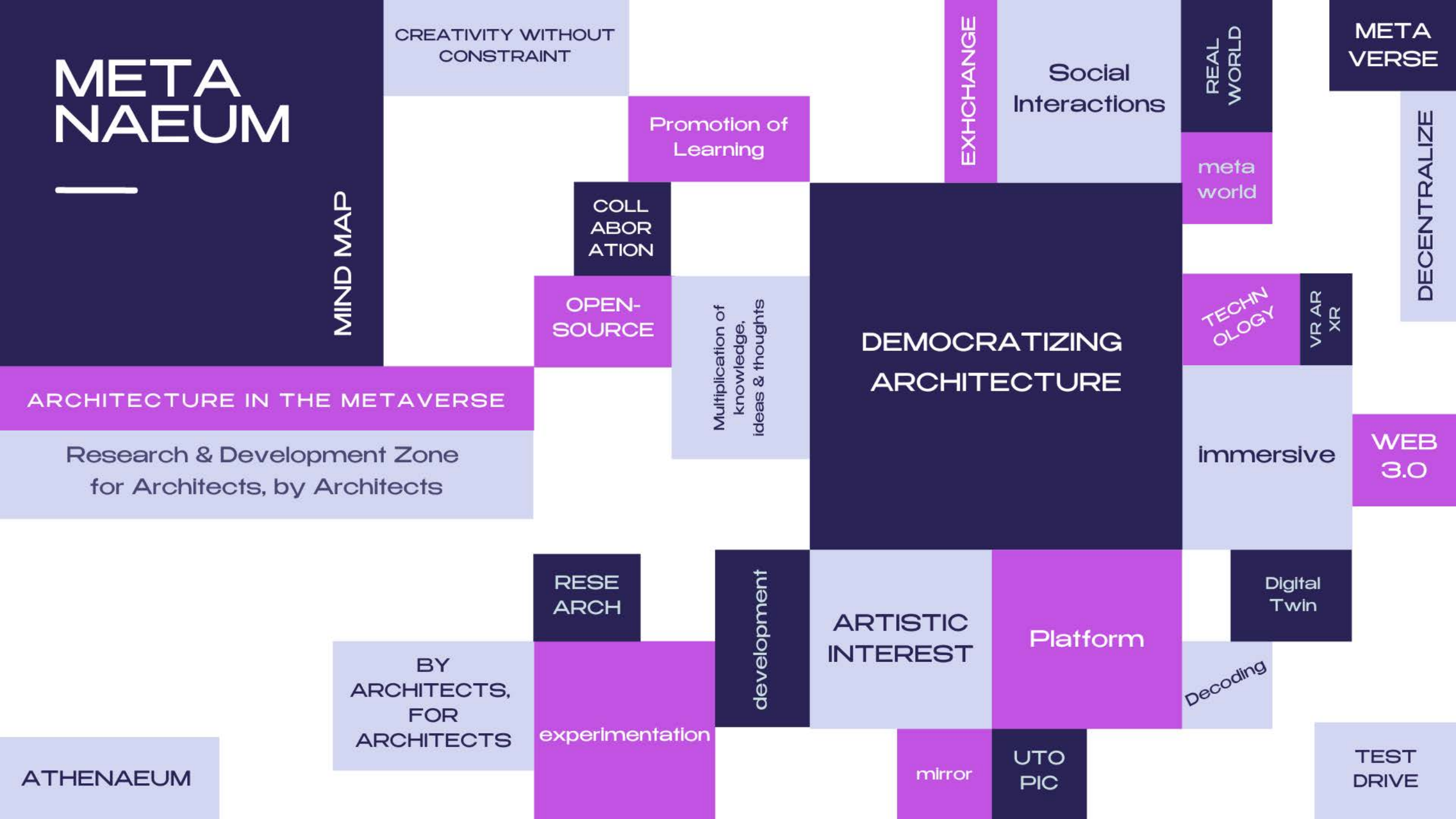
EFFICIENCY

- Designed with principles of the economy for efficient resource use
- Provides tools for designing sustainable and energy-efficient buildings
- Offers insights and data on cost-effectiveness for informed design decisions that balance aesthetics with practical considerations.
- Opportunities for revenue generation

06

EASE OF USE

- Intuitive, accessible to architects with varying levels of technical expertise.
- Clear instructions, easy to navigate, and simple for architects to upload their designs and move around the space.
- The controls should be easy to use and remember, and consistent throughout the platform.
- Architects should be able to customize their settings.
- Should be responsive to user needs, with regular updates and improvements based on feedback.


META NAEUM
MIND MAP
CREATIVITY WITHOUT CONSTRAINT
Promotion of Learning
COLL ABOR ATION
OPEN-SOURCE
Multiplication of knowledge, ideas & thoughts
EXHCHANGE
Social Interactions
REAL WORLD
meta world
META VERSE
DECENTRALIZE
DEMOCRATIZING ARCHITECTURE
TECHN OLOGY
VR AR XR
ARCHITECTURE IN THE METAVERSE
Research & Development Zone for Architects, by Architects
immersive
WEB 3.0
RESE ARCH
development
ARTISTIC INTEREST
Platform
Digital Twin
BY ARCHITECTS, FOR ARCHITECTS
experimentation
Decoding
ATHENAEUM
mirror
UTO PIC
TEST DRIVE

To create a *democratic platform* for architects, made by architects in the *Metaverse* that allows testing of ideas, simulation of environments, and experimentation beyond current limitations, in REAL-TIME facilitating architects in conceptualizing experiences that mirror, improve, and even evolve real-world designs.

VISION FOR THE META-NAEUM

OBJECTIVES

Designing a Decentralized Platform with an Immersive Environment in the Metaverse for

Testing Architecture

- *Areas to test + experience in real time*
- *Simulators*

Exchange of Architectural Knowledge

- *Congregational Spaces*
- *Educational Programs*
- *Innovation Centers*

Fostering Collaboration

- *Areas to test in groups*
- *Collaborative spaces*
- *Networking*

Exchange & Development of Ideas

- *Areas to test in groups*
- *Collaborative spaces*
- *Networking*

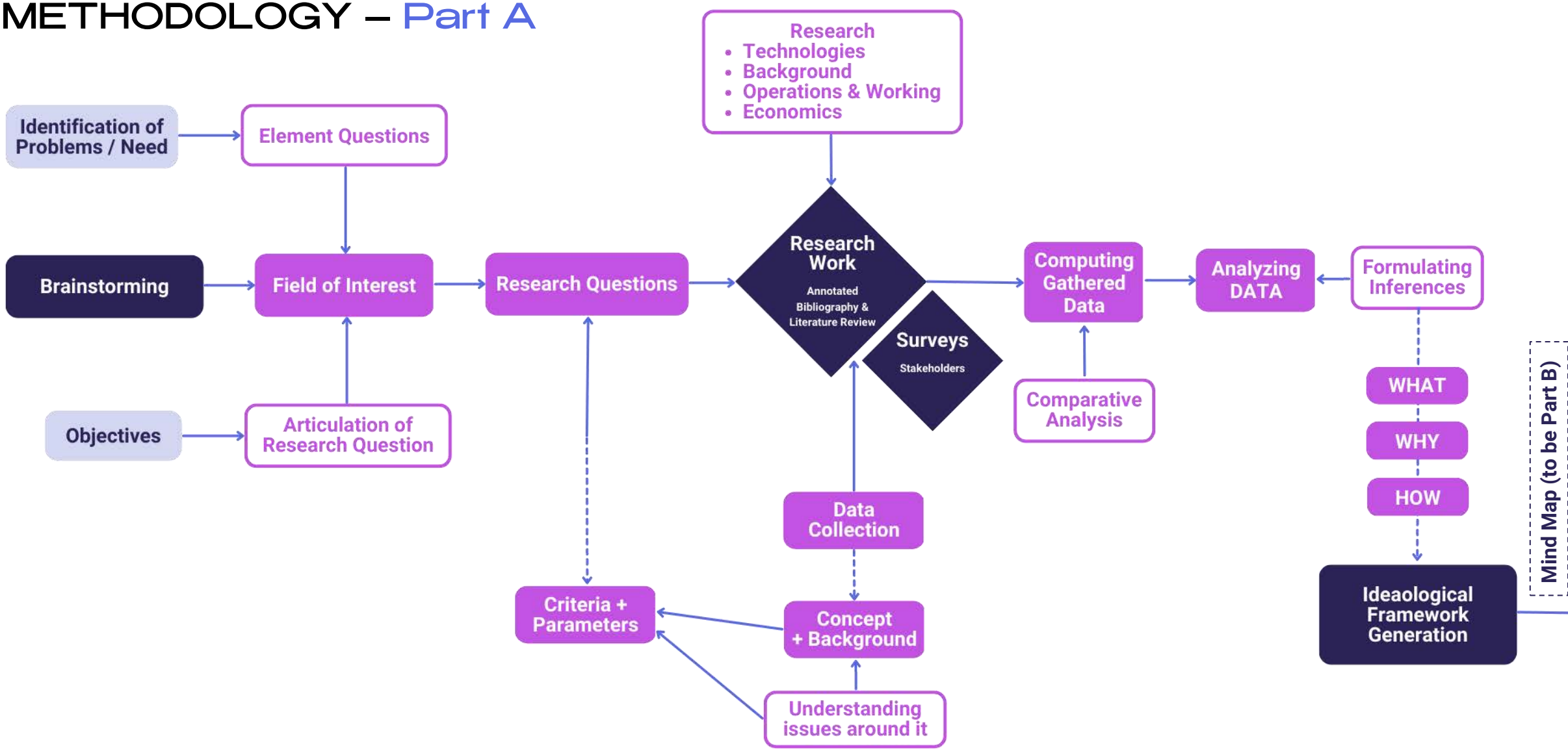
Way Forward

- *Gallery spaces*
- *Educative spaces*
- *Economic System*

Open & Accessible

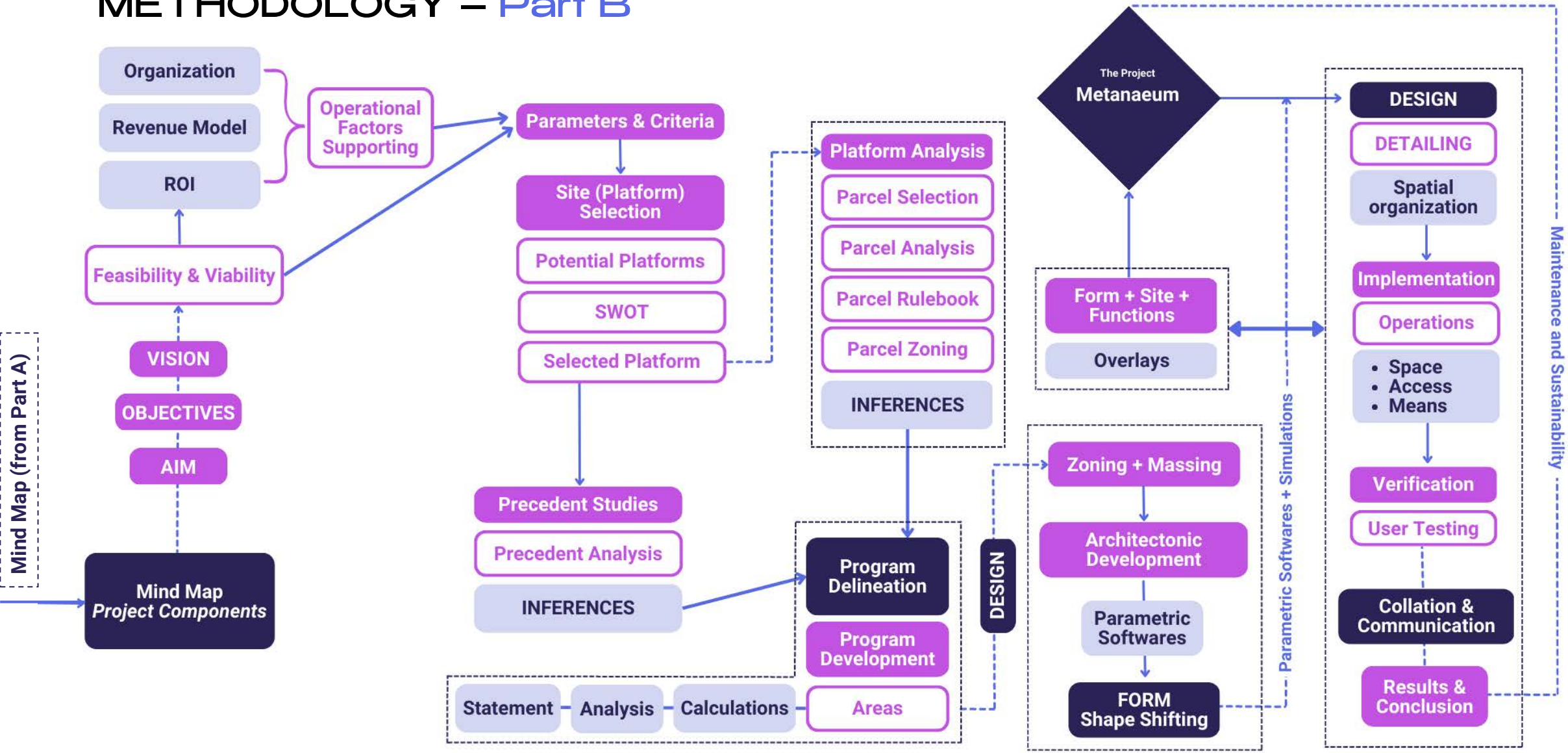
- *Incubators*
- *Dynamic Spaces*

METHODOLOGY – Part A



Approach + Process

METHODOLOGY – Part B



DESIGN PROCESS & APPROACH

Background

Identifying the need for a testing ground for architects, by architects and proposing the concept of a "Metanaeum" as a solution.

Reserach & Analysis

Conducting extensive research on existing knowledge systems, analysing them, and synthesizing findings into a problem statement.

Concept Development

Developing a concept and design strategy for the Metanaeum, identifying design principles and goals, such as testing, simulation, open source, and innovative technologies.

Design Development

Refining the concept and design strategy, developing detailed design solutions that integrate physical and digital technologies.

Evaluation and Refinement

Evaluating the design solutions and their effectiveness in meeting project goals and objectives, including user testing and feedback, and iterating and refining the design.

Communication

Communicating the final design solution for the Metanaeum, using appropriate mediums and visualizations.

Researching Metaverse and Open-Source Architecture to understand the current state and the challenges it faces.

Defining the design problem and identifying project goals and objectives, including creating a testing zone for architects.

Developing a concept and design strategy that responds to the identified problem and goals, incorporating principles of open-source architecture and testing.

Refining the design concept and strategy based on feedback from stakeholders, including architects, technologists and users.

Developing detailed design solutions that integrate physical and digital technologies to enhance the idea.

Evaluating the design solutions and their effectiveness in meeting project goals and objectives, including the ability to foster interdisciplinary collaboration.

Iterating and ***refining*** the design based on evaluation feedback, until a feasible solution is achieved.

PREMISE

Meta-naeum is a proposal
By an Architect, For Architects

to drive the proposal + make it feasible & viable

An Organization / Investor **is required to develop, fund, and operate the Meta-naeum**

SOTHEBY's INTERNATIONAL REALTY

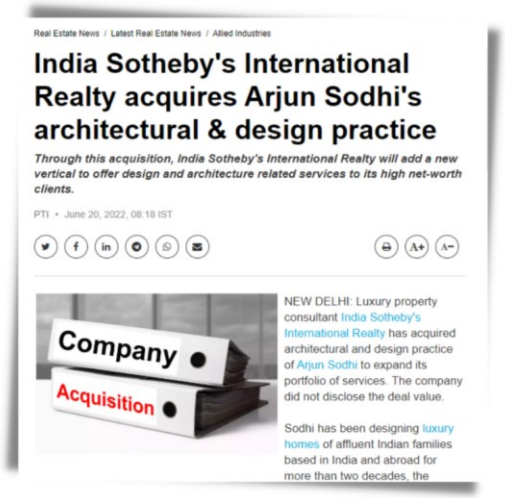
A potential and mutually beneficial partnership > could help drive the *success* of the platform.

What is Sotheby's?

Sotheby's is a British-founded multinational corporation auction house specializing in high-end art and valuables. Sotheby's International Realty is a luxury real estate brand with a global network of affiliates that focus on selling high-end residential properties.

Why Sotheby's is suitable as an organization for Meta-naeum?

- **Strong Brand Recognition**
- **Expertise in Real Estate**
- **Access to a Wide Network**
- **Investment Potential**
- **Commitment to Innovation**



Real Estate News / Latest Real Estate News / Allied Industries

India Sotheby's International Realty acquires Arjun Sodhi's architectural & design practice

Through this acquisition, India Sotheby's International Realty will add a new vertical to offer design and architecture related services to its high net-worth clients.

PTI • June 20, 2022, 08:18 IST

NEW DELHI: Luxury property consultant India Sotheby's International Realty has acquired architectural and design practice of Arjun Sodhi to expand its portfolio of services. The company did not disclose the deal value.

Sodhi has been designing luxury homes of affluent Indian families based in India and abroad for more than two decades, the

"Arjun will lead the virtual design-led initiative in the newly emerging metaverse landscape."

Via E-Realty June 20, 2022, 08:18 IST

How would the partnership work?

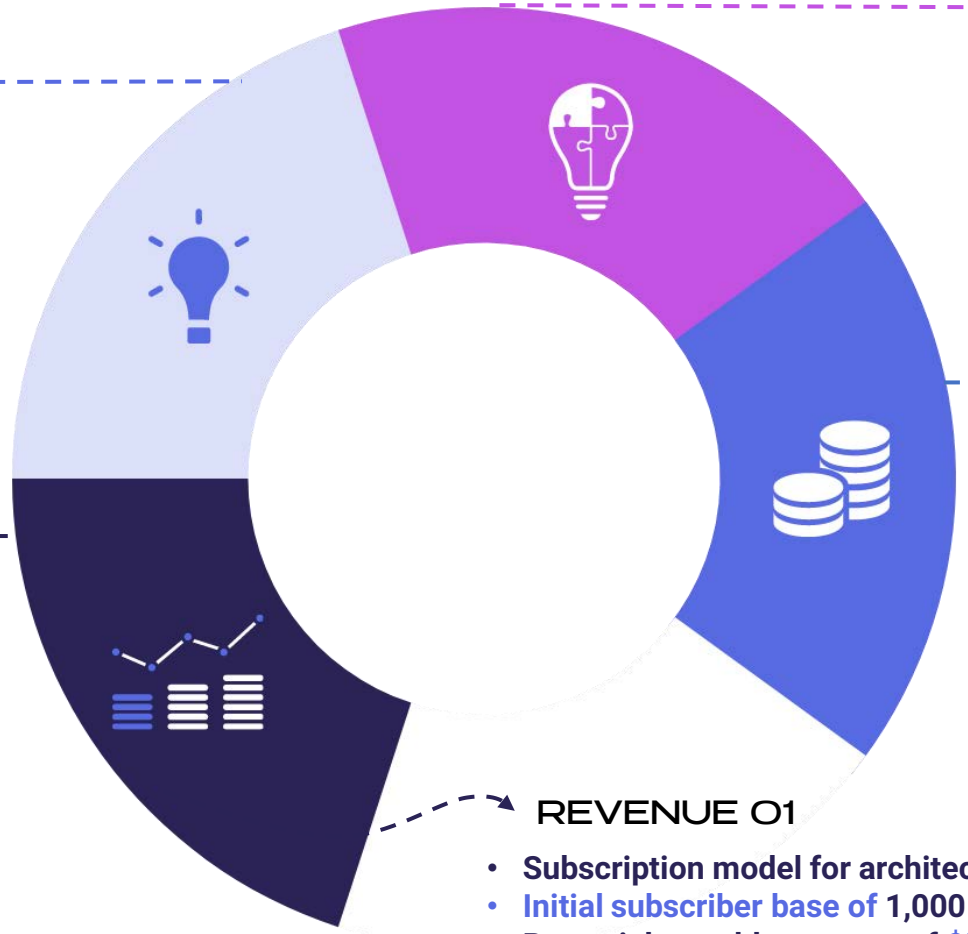
Through a revenue-based model

Feasibility & Viability / DOES THE META-NAEUM WORK?

DOES THE META-NAEUM WORK?

BACKGROUND

- Architects can continuously evolve their work by leveraging technological advancements
- Through a virtual platform that enables them to create, experience, and monetize content and applications.



IMPLEMENTATION

- Virtual world simulates real-world conditions
- Faster evaluation and revisions
- Collaborations lead to better designs
- Reduce risks and changes in construction

COSTS

The initial costs include hiring a team of developers and designers to build and maintain the platform and acquiring the virtual land.

Estimated Initial Costs = Approx. $500,000 to $1,000,000 (4-8 Cr.)

REVENUE MODEL

- A subscription-based model, architects pay a fee to access the platform and test their projects.
- Additional revenue generation through galleries and NFTs

REVENUE 01

- Subscription model for architects, priced at $50 to $100 per month (4-8 K)
- Initial subscriber base of 1,000 architects
- Potential monthly revenue of $50,000 to $100,000 (40-80 L), and yearly revenue of $600,000 to $1,200,000 (5-10 Cr.)

DOES THE META-NAEUM WORK?

REVENUE 02

- **Revenue generated from galleries and NFTs**
- **Transactions conducted using cryptocurrency**
- **E.g., Decentraland - Based on the current market value of its native cryptocurrency, MANA, and assuming a 1% transaction fee, the platform could generate an additional $50,000 to $100,000 (40-80 L), per year.**

RETURN ON INVESTMENT

- **Estimated payback period of 3-4 years for an initial investment of $500,000 to $1,000,000 (4-8 Cr.)**
- **Potential revenue of $3,000,000 to $6,000,000 (25-50 Cr.) over a 5-year period**
- **Net profit of $2,000,000 to $5,000,000 (17-42 Cr.) after deducting operational and maintenance costs**
- **ROI of 200% to 500% over a 5-year period.**

The "Metanaeum" platform for architects in the metaverse provides a powerful tool for design visualization, testing, and collaboration while generating significant revenue and ROI. With estimated payback periods of 3-4 years and returns of 200% to 500% over a 5-year period, the project is FEASIBLE.

WHO ALL COULD THE META-NAEUM IMPACT?

Stakeholder	Interests	Needs	Expectations	Influences	Potential Impact
ARCHITECTURE STUDENTS	Access to learning resources, networking opportunities	Access to high-quality educational materials, exposure to new ideas and design concepts	A platform that offers educational content and opportunities for collaboration with other students and architects	Curriculum requirements, access to funding and scholarships	Can help shape the future of architecture through their education and practice
YOUNG ARCHITECTS	Professional development, job opportunities, networking	Access to educational and professional resources, opportunities for career advancement	A platform that offers opportunities for learning, collaboration, and networking	Employment trends, job market competition	Will shape the future of architecture through their work and leadership
SENIOR ARCHITECTS	Professional development, staying current with industry trends, networking	Access to educational and professional resources, opportunities to mentor and lead younger architects	A platform that offers opportunities for continued learning, networking, and mentorship	Competition for clients and projects, staying current with technology and trends	Will shape the future of architecture through their work and leadership
CONSULTANTS	Professional development, networking, job opportunities	Access to industry-specific resources and information, opportunities to expand their skillset	A platform that offers networking and collaboration opportunities with architects and other consultants	Client demands and expectations, competition for projects	Provide specialized expertise and can offer valuable insights and advice
INTERIOR DESIGNERS	Professional development, job opportunities, networking	Access to industry-specific resources and information, exposure to new design concepts and trends	A platform that offers opportunities for collaboration with architects and other interior designers	Competition for clients and projects	Can provide specialized expertise and contribute to the overall success of the project
INVESTORS	Financial return on investment, potential for growth and scalability, alignment with personal values or interests	Detailed project plans and budget, clear timeline for ROI, confidence in project management and leadership	A successful project that meets financial targets and aligns with their values or interests	Market trends, risk assessment	Provide the necessary funding for the project to be completed
LOCAL COMMUNITIES	Access to cultural and educational resources, economic growth and development	A platform that offers opportunities for engagement and participation in the project, potential job opportunities	A project that positively impacts the local community and offers opportunities for growth and development	Zoning laws and regulations, community input and feedback	The success of the project may depend on support and engagement from the local community
GOVERNMENT AGENCIES	Economic development, job creation, regulatory compliance	A project that aligns with local and national economic development goals, compliance with zoning and building codes	A successful and compliant project that contributes to local economic growth and development	Zoning laws and regulations, building codes and permits	Can provide funding, regulatory support, and necessary approvals for the project to proceed

WHO IS THE META-NAEUM FOR?

ARCHITECTURE STUDENTS

AGE 18-25

TIME

Type of Work
Academic / Explorative

Primary Issues
- Learning from scratch
- Long hours
- Need for continuous testing

Spatial Needs / Wants
Design / Explorative / Small Scale / Educational

Potential to use Meta-naeum

YOUNG ARCHITECTS

AGE 25-35

TIME

Type of Work
Professional / Site / Explorative

Primary Issues
- Developing knowledge
- Long hours
- Understanding real world conditions

Spatial Needs / Wants
Design / Explorative / Collaborative / Observational

Potential to use Meta-naeum

SENIOR / PRINCIPAL ARCHITECTS

AGE 35 Onwards

TIME

Type of Work
Professional / Site / Explorative

Primary Issues
- Coordination
- Long hours
- Evaluation & Revisions to design

Spatial Needs / Wants
Design / Collaborative / Simulative / Networkable

Potential to use Meta-naeum

CONSULTANTS (Engineers, MEP)

AGE 25 Onwards

TIME

Type of Work
Professional / Site

Primary Issues
- Imagining the design and overlaying it with services
- Accurate Visualization

Spatial Needs / Wants
Simulative / Collaborative / Networkable

Potential to use Meta-naeum

SPATIAL DESIGNERS (Interior, Set, etc.)

AGE N/A

TIME

Type of Work
Professional

Primary Issues
- Imagining Spaces & Organization
- Creating the right “feel”
- Evaluation & Revisions to design

Spatial Needs / Wants
Design / Small Scale / Explorative

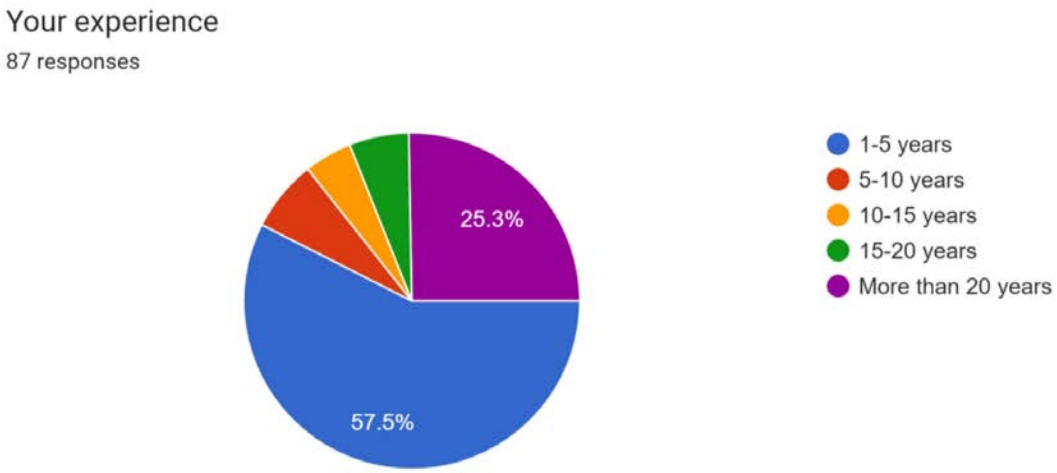
Potential to use Meta-naeum

Stakeholders

DO THEY WANT THE META-NAEUM?

A survey was conducted amongst architects from different stages (Students, Young Architects, Experienced Architects) along with consultants (engineers, MEP) to understand if a gap exists if they would be keen to use a platform like the Metanaeum and would they be willing to pay for it or not?

The results were as follows:



The majority (84%) of the architects who took the survey agreed that such a platform could be beneficial. Most (65%) were also willing to pay the amount equal to or more than what is necessary to sustain the Metanaeum.

EXAMINING THE META-NAEUM

STRENGTHS

- Innovative tech for architecture education & collaboration
- Global reach for architects & designers
- Strong sustainability focus & funding potential
- Encourages creative exploration & social collab
- Enables eco-friendly materials experimentation
- Access to global architectural knowledge & expertise
- Recognition & career growth opportunities
- Democratizes field & expands opportunities

WEAKNESSES

- Limited access to high-end VR technology
- High development and maintenance costs
- Constant need for updates and upgrades
- Challenges in gaining adoption from architects
- Possible digital divide in the community
- Difficulty in replicating physical processes
- Significant time and resource investment to maintain
- Limited accessibility for certain groups in architecture

OPPORTUNITIES

- Strategic partnerships with leading firms and institutions
- Platform expansion to other design fields
- Integration with traditional education for learning support
- Setting a new standard for virtual collaboration in architecture
- Experimentation with emerging tech and materials
- Collaborations with tech and architecture organizations
- Real-time data integration for better user needs
- New revenue streams through virtual design services/products

CHALLENGES

- Ensuring accessibility for users of all levels
- Addressing intellectual property and copyright concerns
- Continuous adaptation to technology and user needs
- Investing in research and development for emerging tech
- Maintaining user engagement
- Potential resistance from traditional architects/organizations

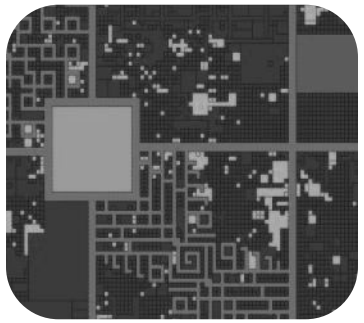
03 / DECODE ~~SITE~~ PLATFORM:
Context and the Tangibles

POTENTIAL ~~SITES~~ PLATFORMS

Metaverse lands are similar to real-world lands, except that they are virtual. Anything one could possibly imagine can be done on these lands. Meta lands are usually divided into plots or parcels and are limited in supply by an immutable smart contract on the blockchain which is what makes them so valuable.

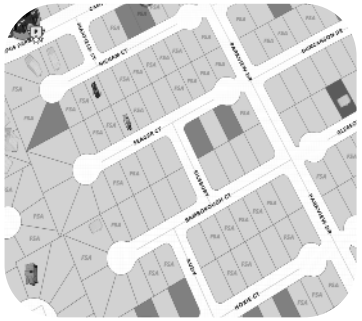
⟶ HOST PLATFORM DELINEATED BASIS PROPOSED PLATFORM

CRITERIA	PARAMETERS
• Not bound by too many restrictions • Accessibility • User-friendly • Interoperable • Democratic • Dynamic • Profitable • Expandable • Immersive • Cost-effective • Relevant	• Accessible to all • Ease of Use • Interoperability • Democratic in nature • Developing and not stagnant • Opportunities for Revenue Generation • Flexible • Buildable and Scalable • Sensory • Familiarity • Economy • Relevance to Sotheby's



DECENTRALAND

BIG TIME



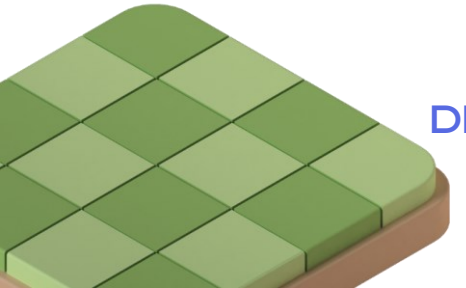
UPLAND

PIXELYNX

BLOCKTOPIA

POTENTIAL ~~SITES~~ PLATFORMS

DECENTRALAND	BIG TIME	UPLAND	PIXELYNX	BLOCKTOPIA
S DAO & Most Popular, Large Communities	S Portals & Time Travel	S Replica of Real World	S Unique Art Style	S Skyscraper with Multiple Functions
W Expensive Land	W Gaming Oriented	W Mirror Limits Creativity	W Music Oriented	W Steep Learning Curve
O High Revenue Generation, Beyond just gaming	O Endless Multiverses	O Real-world Stimulations	O Incorporation of other professions	O Hybrid like structure
C Heavily Populated	C Platform is still in the testing stage	C Limited Content & Activities	C Limited Monetization options	C Limited Accessibility



DECENTRALAND

Chosen as the platform to host the Metanaeum due to its unique ownership model, strong community of developers and users, and built-in security through blockchain technology etc.

THE METANAUEM PLATFORM ANALYSIS

DECENTRALAND

Location and Orientation

- Location (Coordinates) – Each LAND parcel has Coordinates
- Size of Land Parcel – Each LAND parcel measures 16x16 meters
- Proximity to other buildings or landmarks
- Orientation

Zoning and Regulations

Decentraland has its own set of rules and regulations:

- Building Height – 10 stories / 35 m
- Setbacks - 1 meter from the edge of the parcel
- Materials – Static Textures

Climate and weather conditions

Although Decentraland does not have a physical climate, it has its own environmental conditions that can affect the building's design.

- Prone to higher traffic or lag
- Offering a more immersive experience.

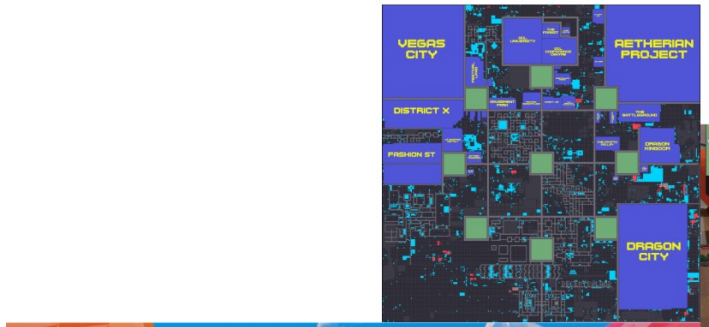
Landform and topography

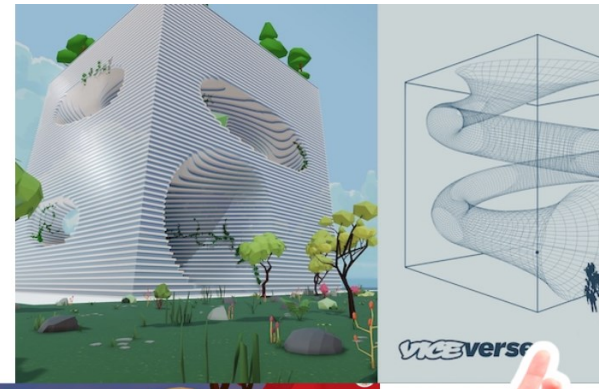
Decentraland is a flat, grid-based world

Accessibility and Circulation

In Decentraland, users navigate through the world using avatars.

- Pathways, Entrances, and Exits that are intuitive and easy to navigate.

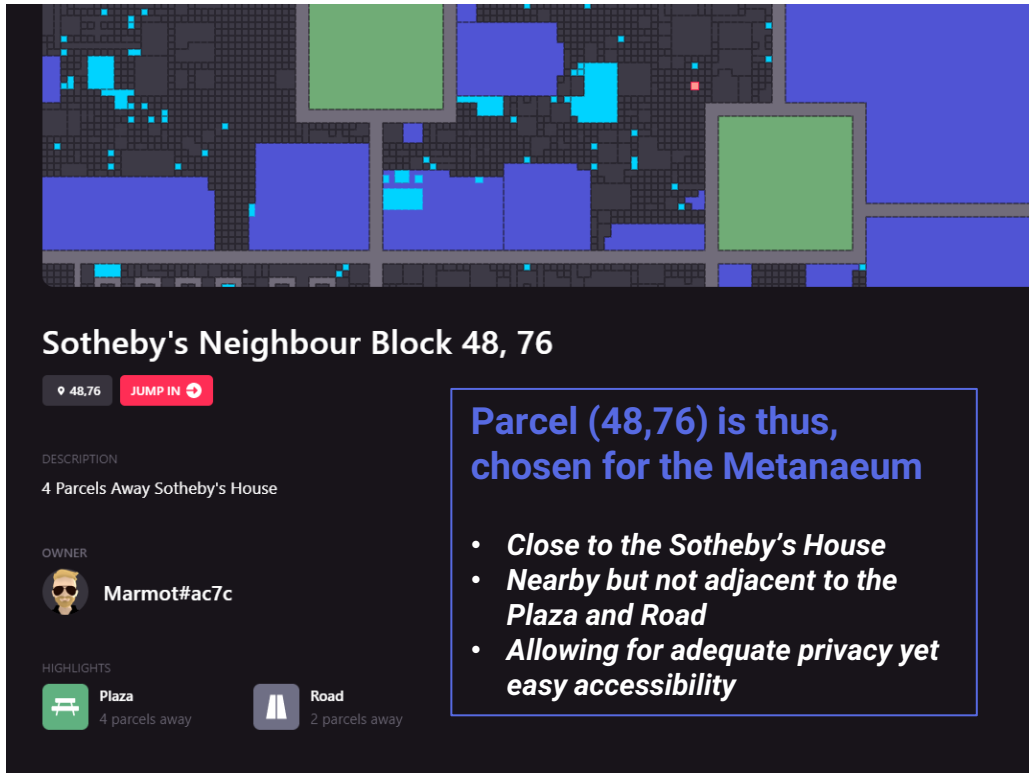


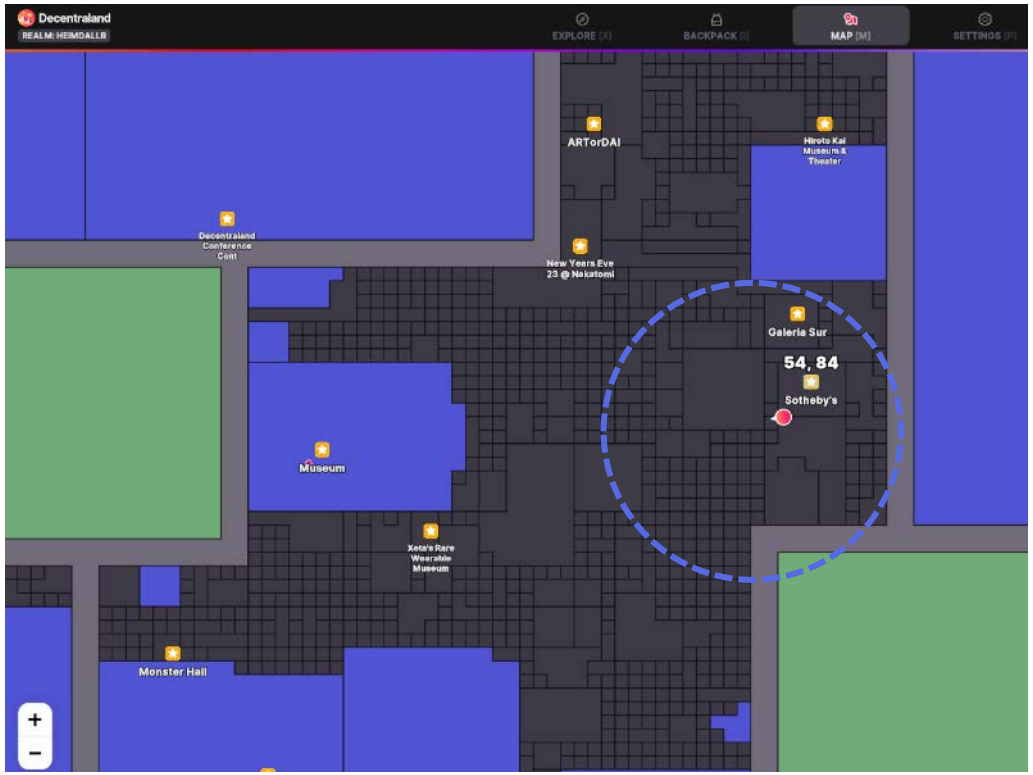


THE METANAUEM PARCEL ANALYSIS

DECENTRALAND

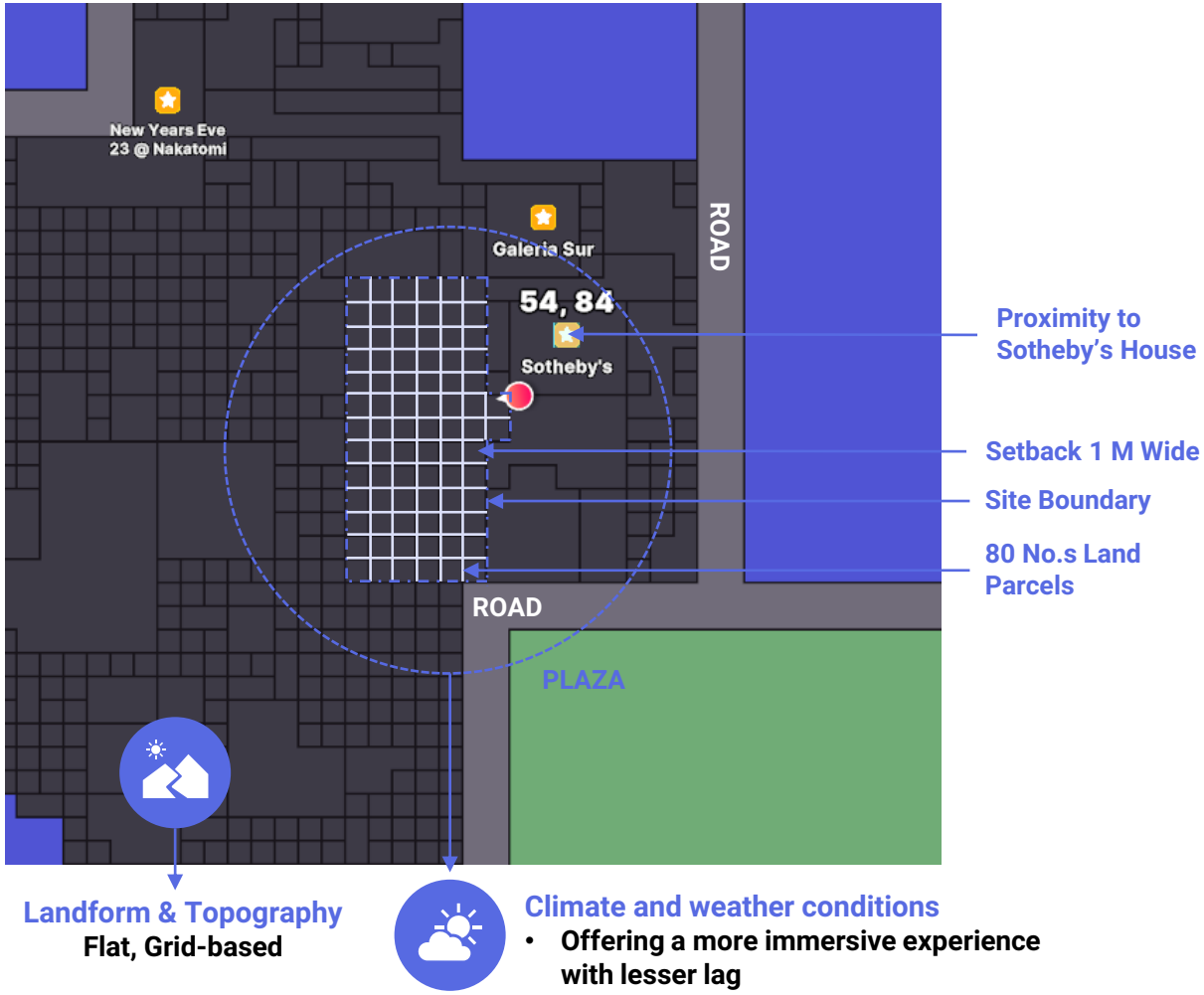
The parcel should be in an immersive zone, relatively lesser in population.
Proximity to the Sotheby's building – already located in Decentraland, could be beneficial.





THE METANAUEM PARCEL

DECENTRALAND



Landform & Topography
Flat, Grid-based

Climate and weather conditions
- Offering a more immersive experience with lesser lag

TOTAL SITE AREA = 5 Acres

Sotheby's House (For reference) = 0.5 Acres = 8 Parcels on DL
- **1 No. LAND Parcel = 256 sq.. m**
- **Dimension of 1 No. LAND Parcel = 16 m x 16 m**
- ***Total area of 5 acres = 20240 sq. m = Approx. 80 Parcels***

Location and Orientation
- **Location (Coordinates) – 48, 76, Voltaire Art District**
- **Size of Land Parcel – (16x16 m) x 80 No.s**
- **Proximity to other buildings or landmarks – Sotheby's House**
- **Orientation – North South**

Zoning and Regulations
Decentraland has its own set of rules and regulations:
- **Building Height – 10 stories / 35 m**
- **Setbacks - 1 meter from the edge of the parcel**
- **Materials – Static Textures**

Surrounding Context
Decentraland is a dynamic and constantly evolving environment.
- **Surrounding context – Empty Parcels, Under Development Parcels, Plaza, Road**
- **Neighboring buildings – Sotheby's House, Galeria Sur**
- **Landmarks – Voltaire Art District, Plaza**

THE METANAUEM PARCEL

VOLTAIRE ART DISTRICT, DECENTRALAND

Inferences

LOCATION
Voltaire Art District, Decentraland

SITE ANALYSIS AREA
200 M Radius around Selected Parcel

PARCEL AREA
5 Acres / 80 No.s Land Parcels

LANDMARK
- Sotheby's House
- Galeria Sur

DENSITY
Low, Majority of Unused Land Parcels

HEIGHT
- Sotheby's House = G+3
- Galeria Sur = Only ground, open air
- No defined Skyline

LAND USE
Gallery spaces / Recreational

CONNECTIONS
Coordinate, Road

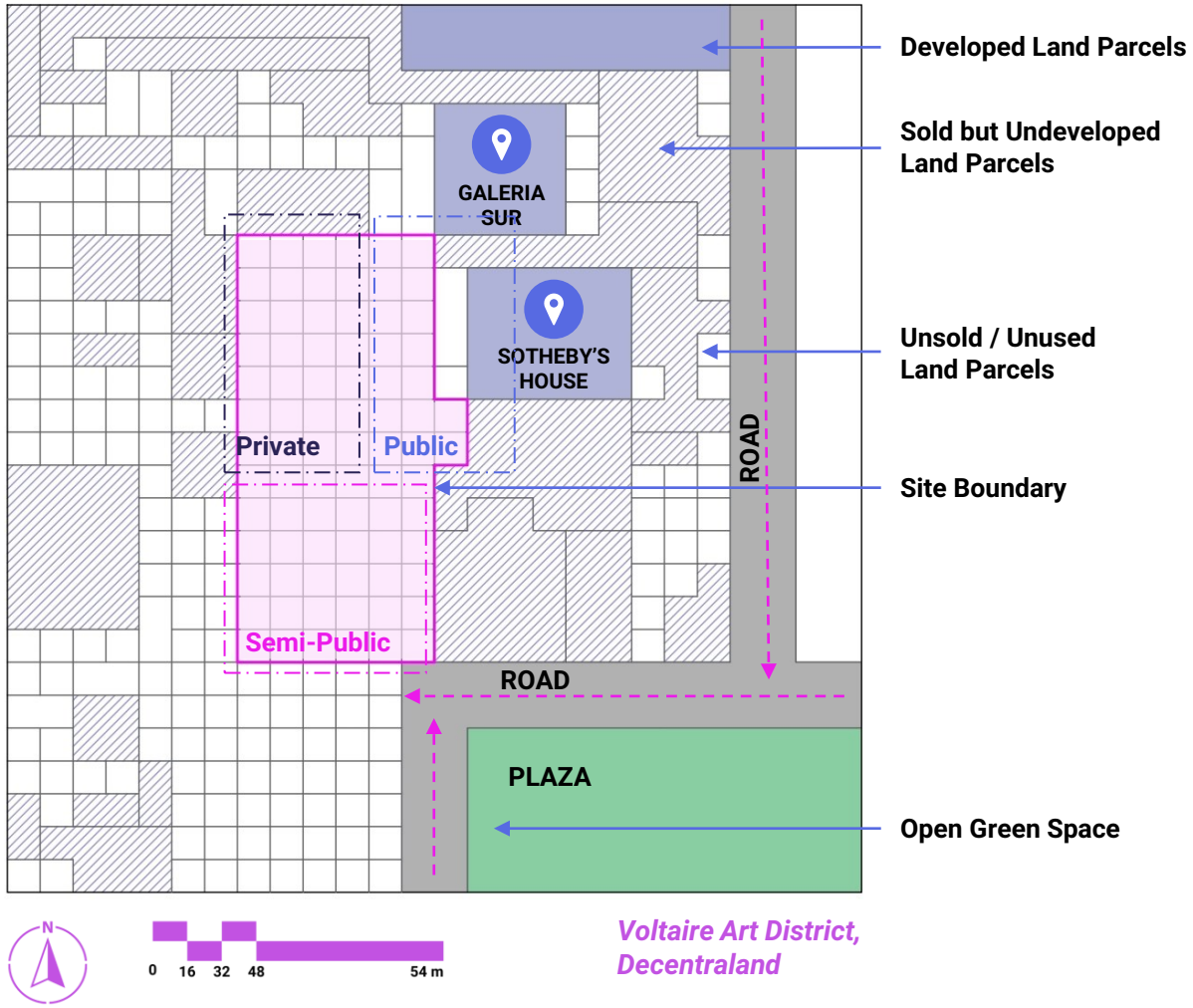
SEGREGATION OF SPACES
Permeable / Accessible

TRAFFIC
Sparse

TOPOGRAPHY
Flat – Grid Based

ORIENTATION
North – South (of the parcel)

STAKEHOLDERS
Art Enthusiasts, Artists, Collectors, Architects & Designers

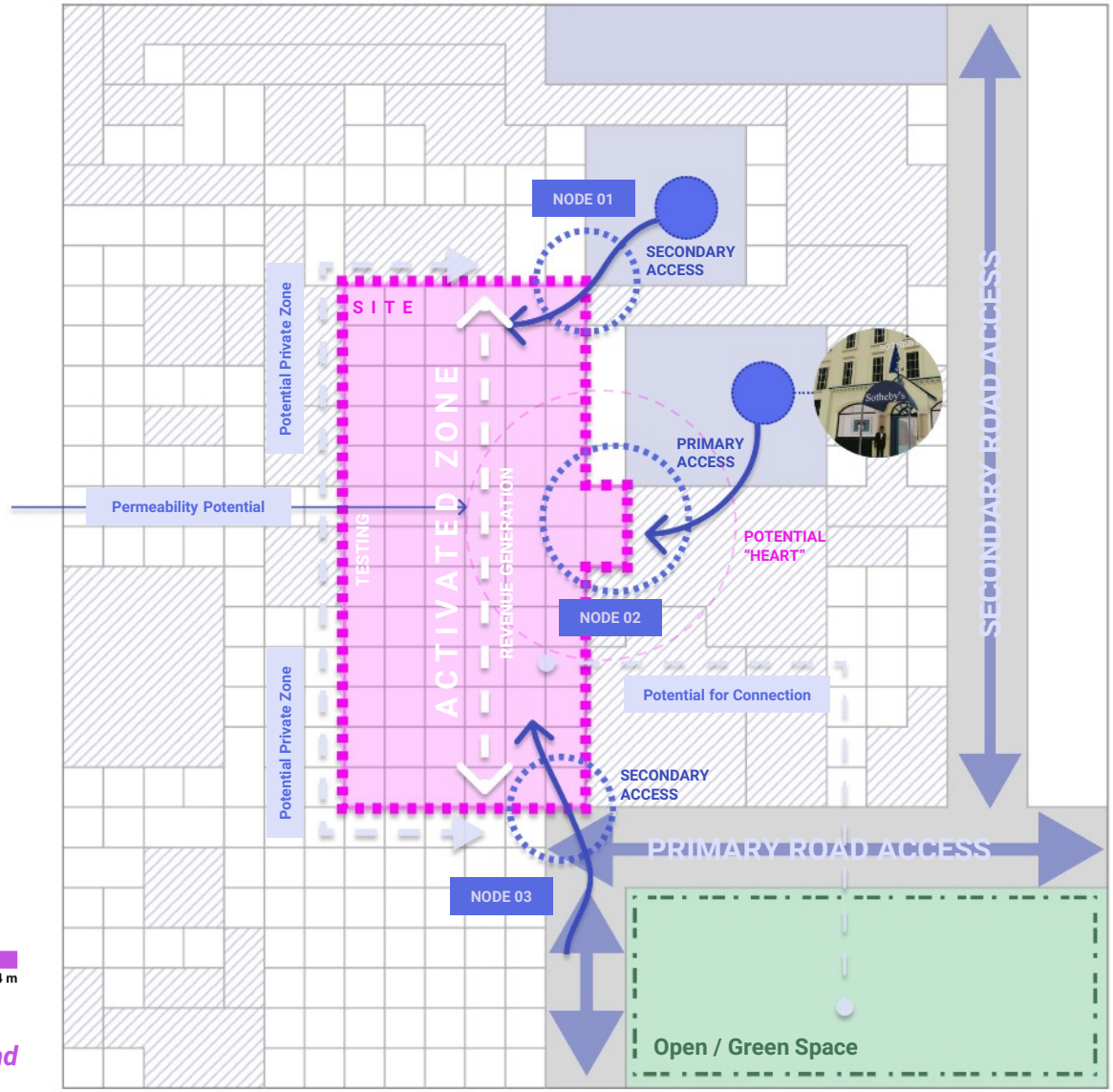


Voltaire Art District, Decentraland

THE METANAUEM PARCEL DEVELOPMENT

METANAEUM PARCEL
Development Strategy

- Space for testing by introducing novel simulation strategies
- Points / Nodes of Activation
- Ease of Accessibility
- Permeable Boundaries with Private Spaces for Testing
- A Strong Network, Integrated with Functionality, creates a Vibrant Realm
- Spaces with Smooth Transitions
- Acts as a “template”
- Flexible, Dynamic & Self-Sustaining



Voltaire Art District, Decentraland

THE METANAUEM PARCEL RULE BOOK

Principles, Rules, Growth & Depth, Dimensionality, Scale and Proportion

AREA	5 ACRES (20,240 sq.. m / 80 Parcels)
BUILT-UP	Max. = 1,98,440 sq.. m, Proposed = 65,280 sq.. m
G.C.	Max. = 98% (19,844 sq.. m), Proposed = 42% (8,448 sq.. m)
FLOORS	Max. = G + 9, Proposed = G + 7
HEIGHT	Max. = 35 m, Proposed = 30 m

SITE DIMENSIONS

A to B = 96 M
B to C = 80 M
C to D = 16 M
D to E = 32 M
E to F = 16 M
F to G = 96 M
G to H = 96 M
H to A = 208 M

SETBACKS

AB; GH; HA = 16 M
BG = 32 M
DE = 48 M

ORIENTATION = N-S

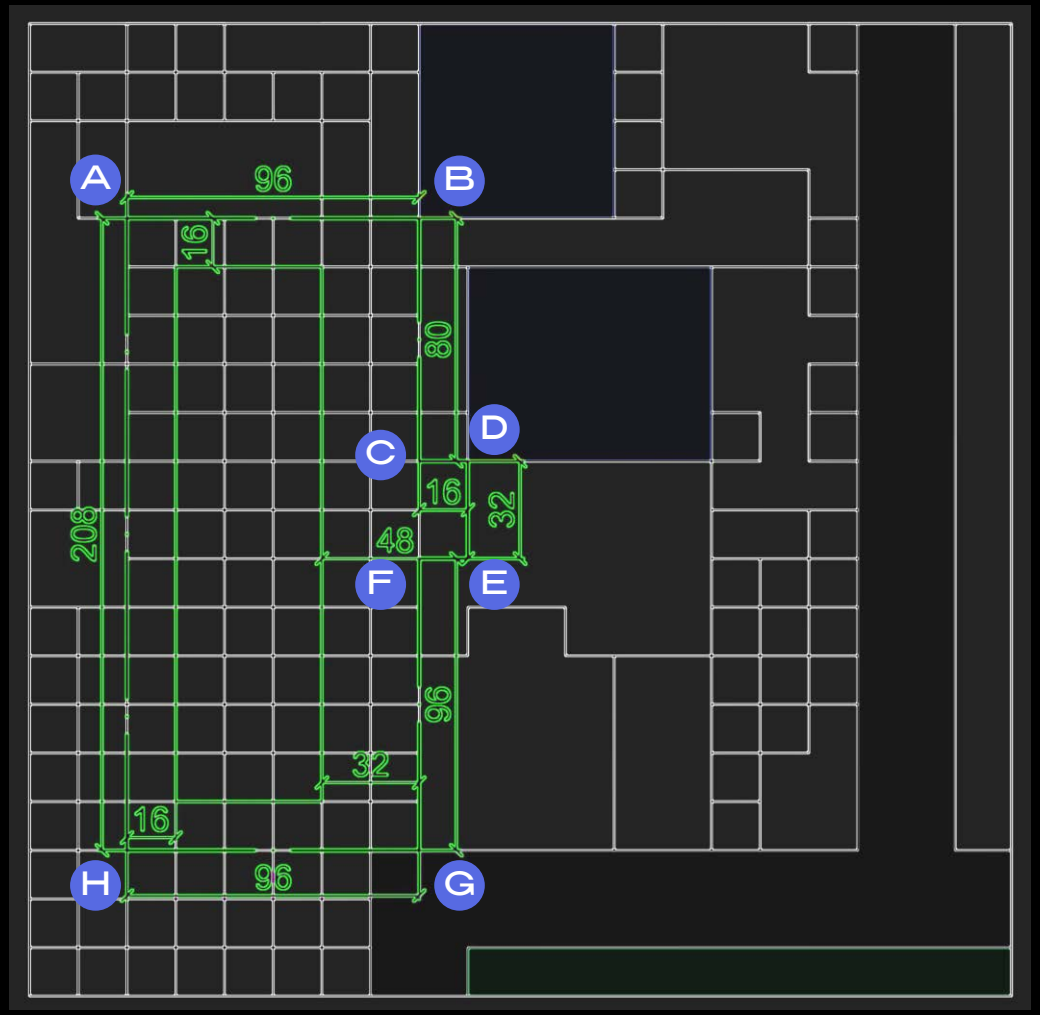
Dimensionality, Scale and Proportion

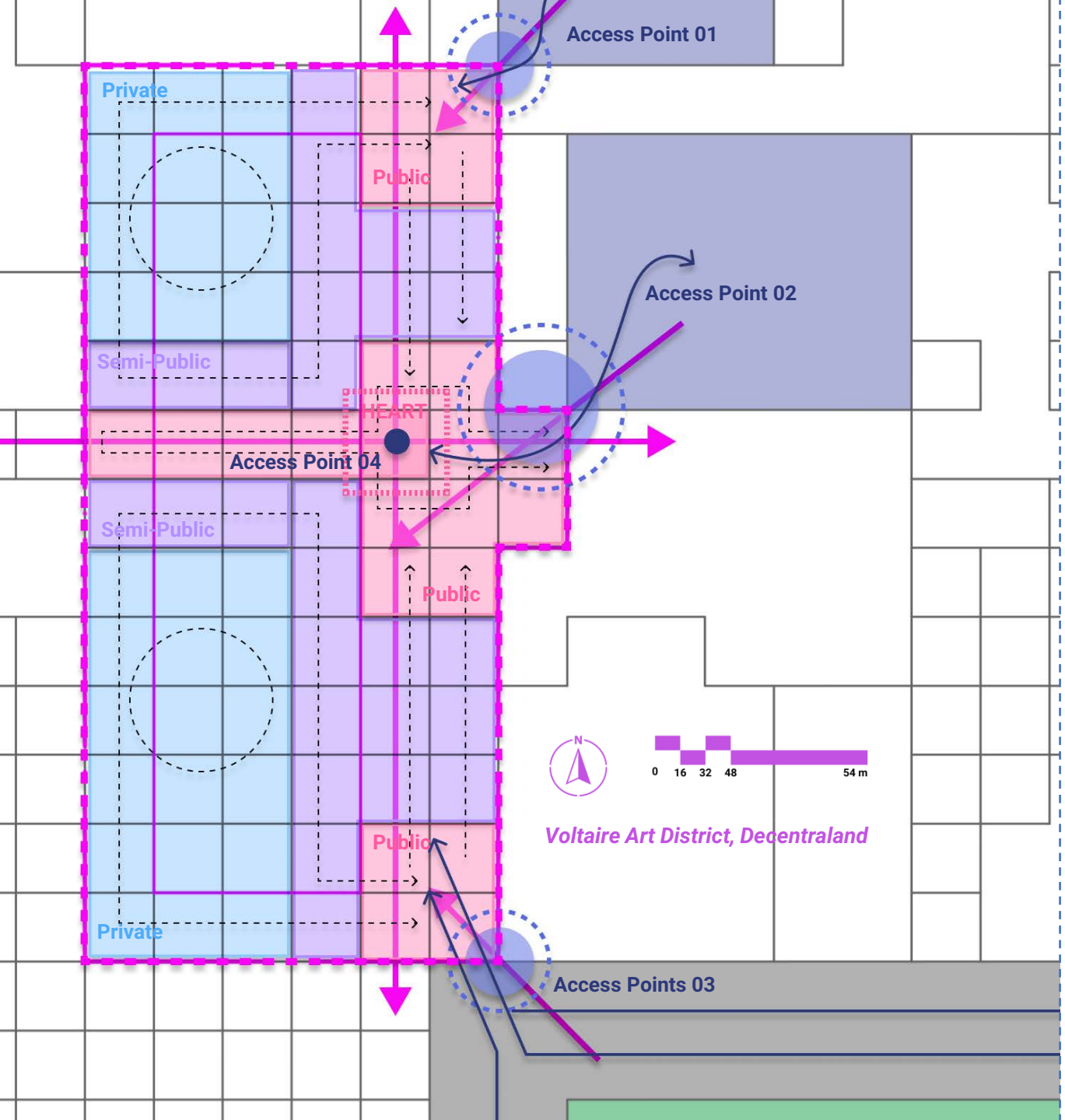
1 px = 16 x 16 m = 256 sq.. m

PRINCIPLES

- Ease of Accessibility
- Interoperability
- Scalable Buildable
- Built contained within (11 x 3) px.
- Shapeshifting Built form based on set parameters, but always pertaining to set rules of growth and depth.

Rule of Growth	Rule of Depth
= < 11 px	= < 3 px





THE METANAUEM PARCEL ZONING + CIRCULATION

PRELIMINARY ZMA_0.0

/ Acts as a base; starting point; “template” for the user
> Creates familiarity

LEGEND

- Axes / Site Boundary
- Activated Zones
- Private Edges
- Semi-Public Edges
- Public Edges
- Nodes
- Private Spaces
- Semi-Public Spaces
- Public Spaces
- Circulation
- Entrance / Exit / Accessibility

THE METANAUEM PARCEL ZONING MATRIX

User Generated

LEGEND
- Public
- Semi-Public
- Private

Meta = M
Access = A
Code for Zoning Metanaeum Site = ZMA

Access Points
M + (Parcel access No.)
= M + 1 = M1

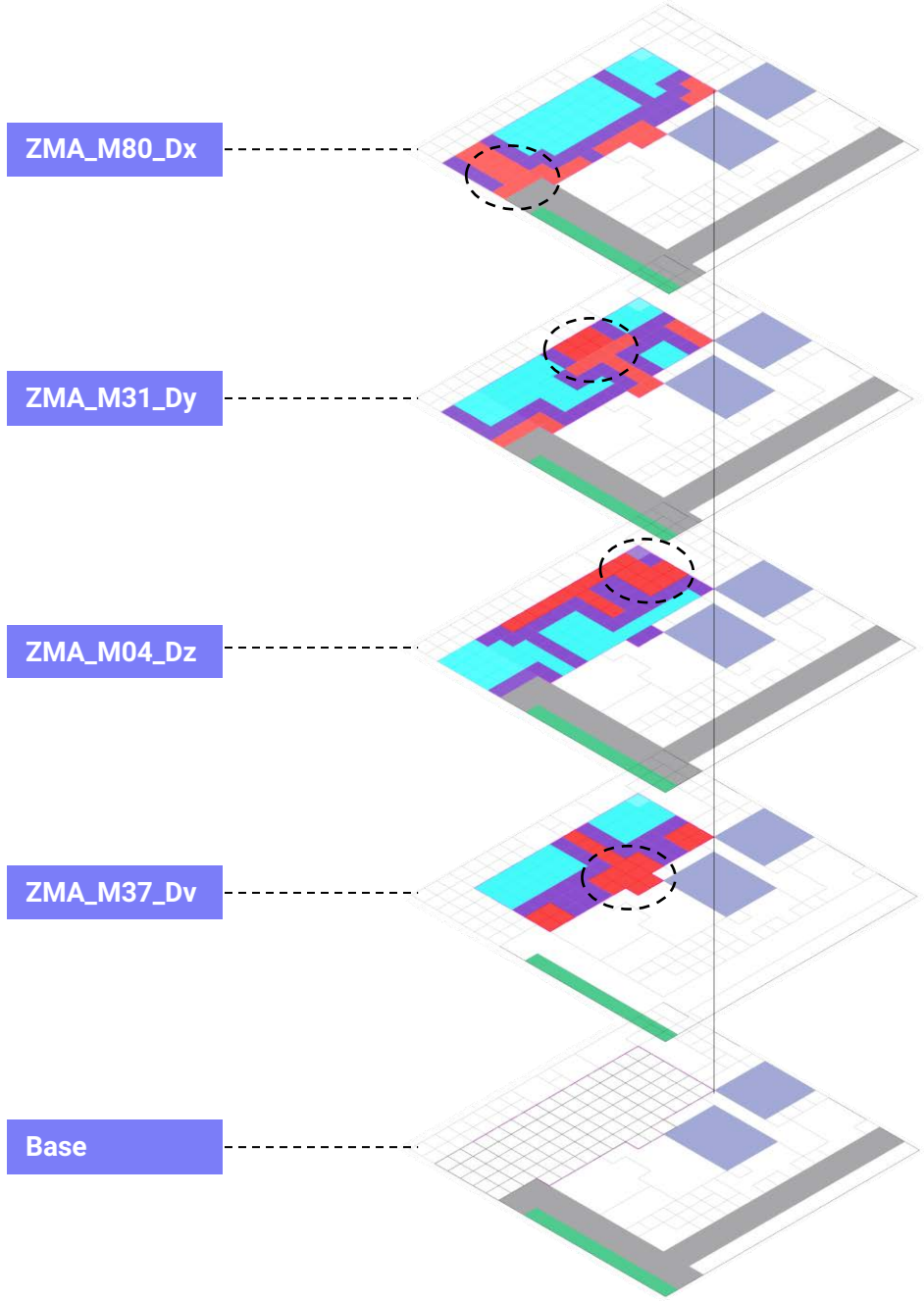
Direction of Access Points
D(v/x/y/z)

Iteration Code Sample
ZMA_M1_Dx
ZMA_M80_Dy
ZMA_M59_Dz
ZMA_M23_Dv

No. of Possible Iterations
D(v,x,y,z) x Parcel No.
= 4 x 80
= 320

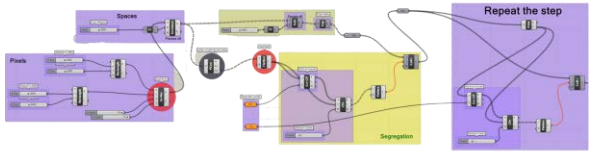
Logic/ Methodology: Selection of Access parcel along with the direction of the entrance. The zoning principle remains constant (Heart of the Metanaeum) and variable definitions of public, semi-public, and private spaces on the basis of access pixels and direction.

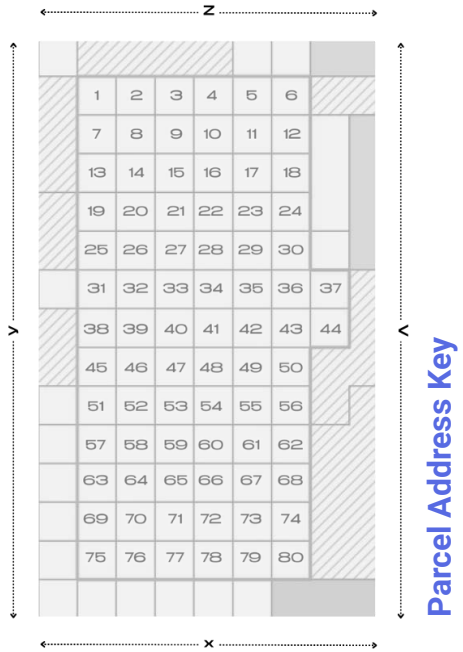
Script: Script generated on Grasshopper using formulated code and matrix – culling cubes (for making the site); attractor point (for setting up access points) & color swatches (for public, semi-public, and private segregation).

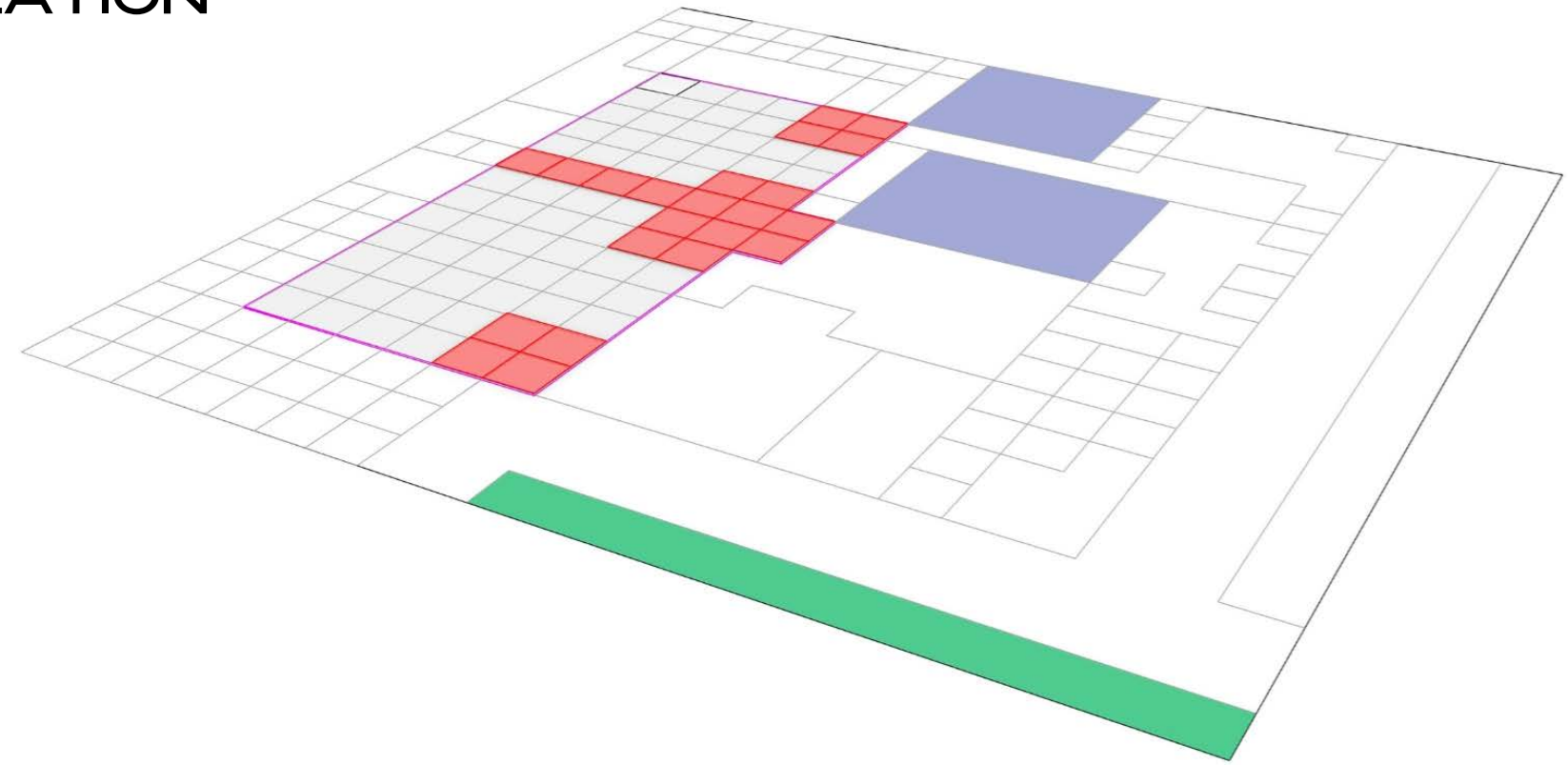


THE METANAUEM PARCEL ZONING + CIRCULATION

ITERATIVE ZMA_(s)







ZMA_M37_Dv

- User-generated Zoning Iterations as per *Parcel of Access*
- Zoning Principle (Heart of Metanaeum) remains *Constant*
- Segregation of Spaces (Public Semi-Public Private) are *Variable*

LEGEND
- Public
- Semi-Public
- Private

04 / DECODE PROGRAM:
Context and the Components

PRECEDENT STUDY MATRIX

PROGRAM / FUNCTIONS

PROGRAMMATIC COMPONENTS

FORM DERIVATION

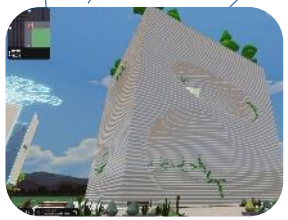
ARCHITECTURAL EXPRESSION

OPEN SOURCE

DECENTRALAND PLATFORM

ECONOMIC COMPONENT

OPERATION & WORKING



VICEVERSE

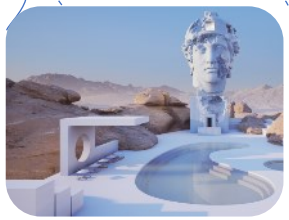
Vice Group Metaverse Headquarters

METASERAI

Series of virtual hubs informed by the ancient Silk Road

VILLA ORTIZET

Vibrant & Virtual Dreamscapes in a Neo Chemosphere

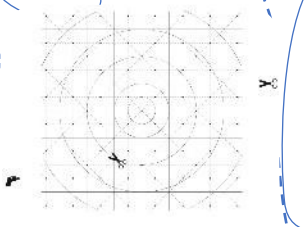


ARES HOUSE

A Home inside a Sculpture

CANTI. HOUSE

A Levitation Center



OPEN STR. GRID

An open-source Modular Construction Model, Geometrical Grid

OPEN SOURCE

Architecture projects

METADISTILLERY

Abstracted Metadistillery

METAJUKU

Metaverse Malls, Tokyo's real-life Harajuku district

SOTHEBY'S

Replica of a real-life location, Virtual Gallery

M SOCIAL

The First Hotel in the Metaverse

CRYSTAL CITY

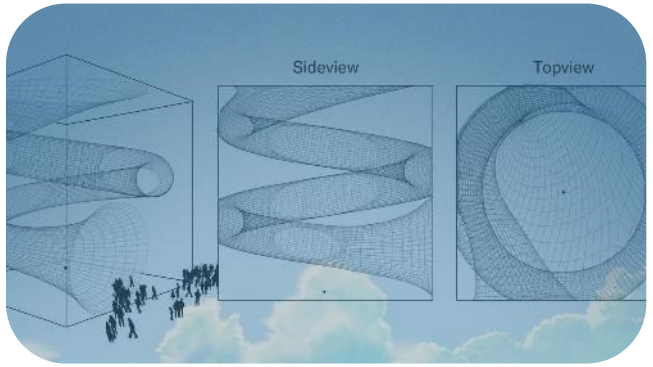
Decentraland's tallest multi-purpose tower

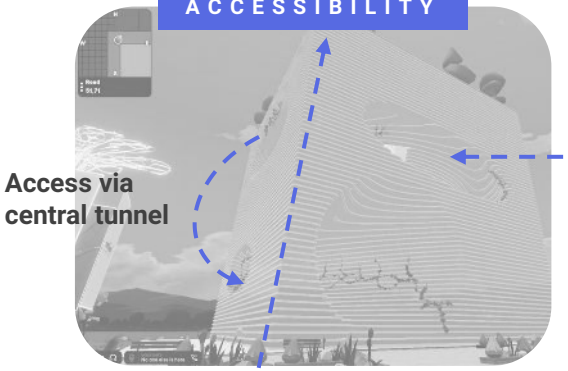
WINTER HOUSE

A Virtual Residence

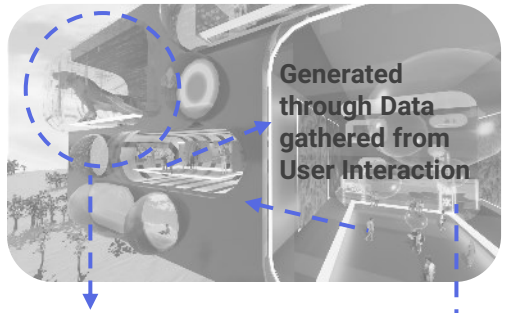
PRECEDENT STUDY ANALYSIS

VICEVERSE
Virtual Innovation Lab

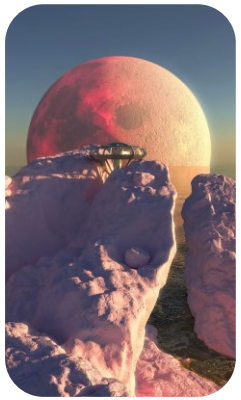


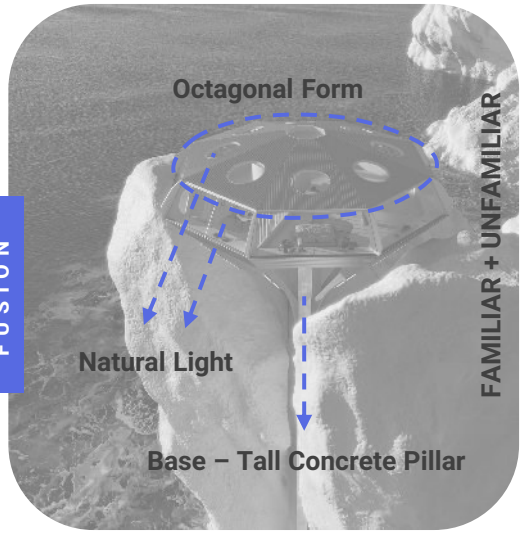


METASERAI
Series of Virtual Hubs informed by the Ancient Silk Road



VILLA ORTIZET & NEO CHEMOSPHERE
Vibrant & Virtual dreamscapes





PRECEDENT STUDY ANALYSIS

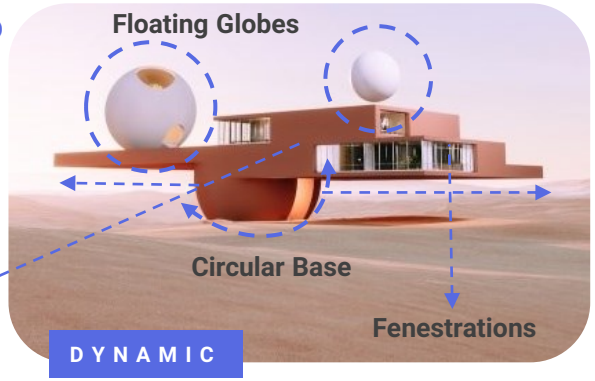
ARES HOUSE
A Home inside a Sculpture

Pure Forms

Organic Forms

Color changes as per season

CANTILEVERED HOUSE
A Floating Home



Cantilevered

Mimics + responds to the sun's colors during different times

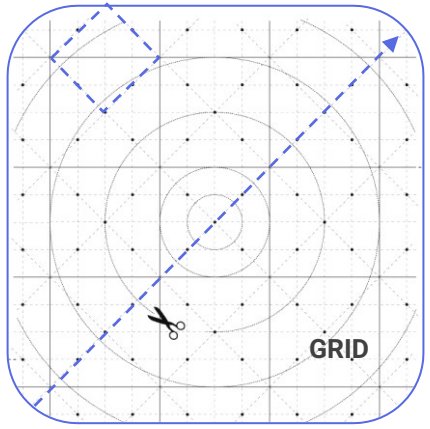
OPEN SOURCE
Architecture Projects

Aim to provide free architectural designs, drawings, 3D renderings, and documentation.

OPEN STRUCTURES GRID
Open-source Modular Construction Model

4x4 Square

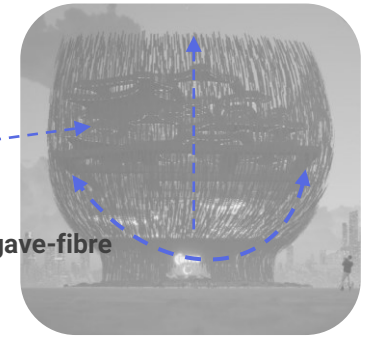
Scalable



Z33 –
A house for contemporary art

METADISTILLERY JOSE CUERVO
An Interactive Digital Space

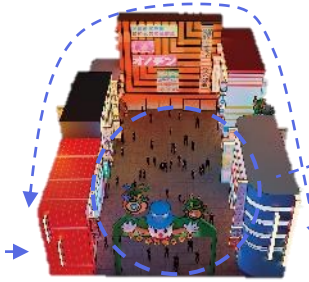
Floating Platforms



Curved Agave-fibre Facade

METAJUKU
A Shopping District

256 m in area



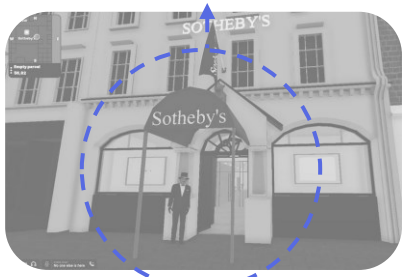
Pedestrian Friendly Open Space

U Circulation

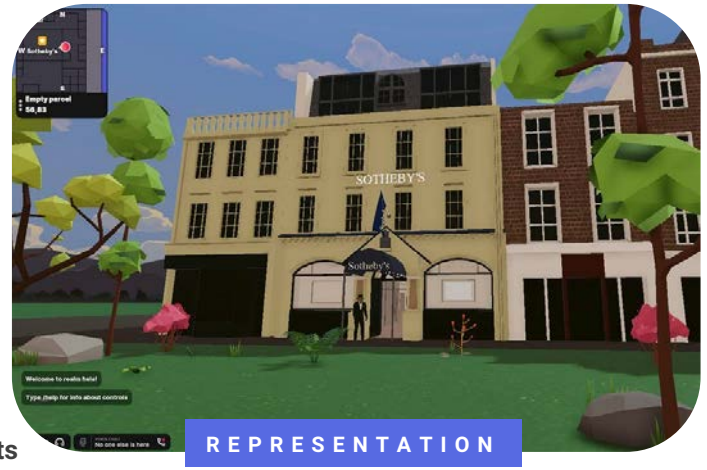
PRECEDENT STUDY ANALYSIS

SOTHEBY'S HOUSE
A curated Digital Art Gallery

Exact replica of real-world



Traditional Architectural Elements



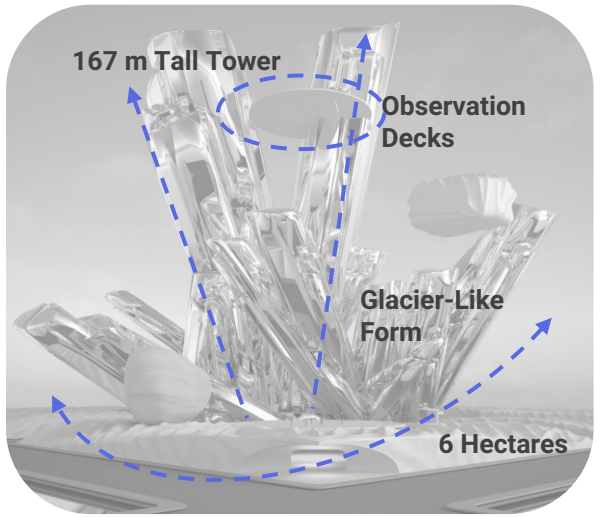
REPRESENTATION

M SOCIAL
Metaverse's First Hotel

BRANDING

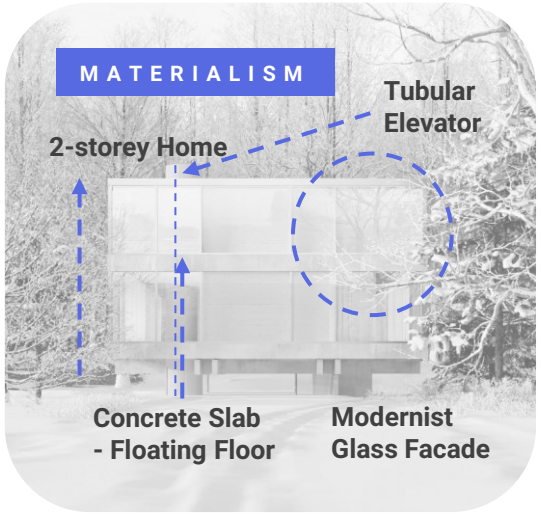
CRYSTAL CITY
A Mixed-use Development

FORM



THE WINTER HOUSE
A Virtual Residence

MATERIALISM

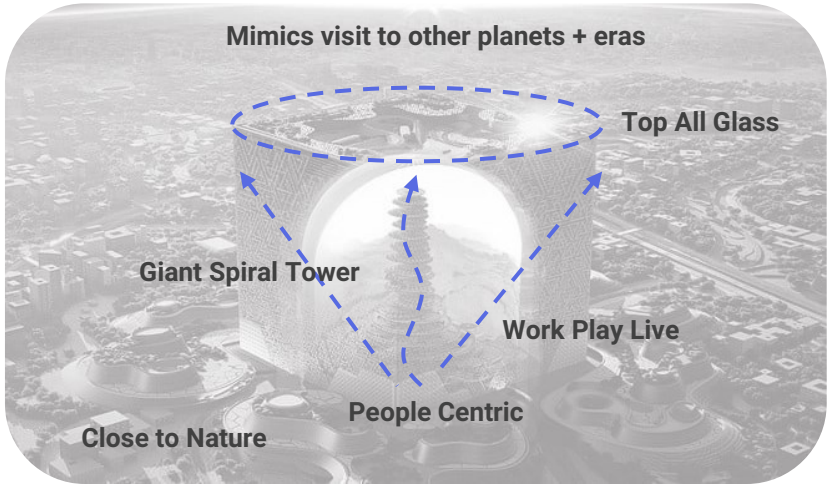


PRECEDENT STUDY ANALYSIS

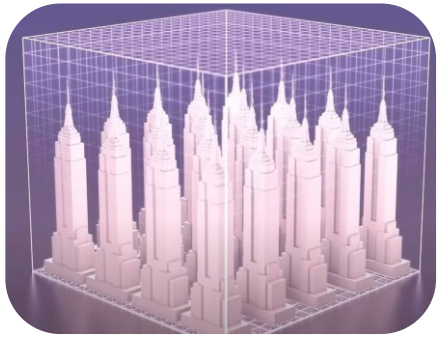
MUKAAB

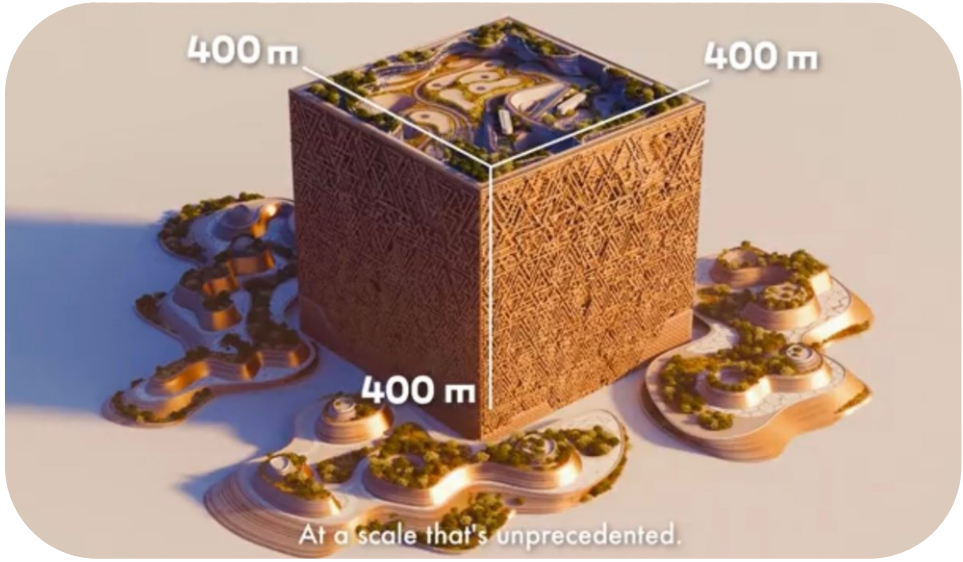
Saudi's Sci-fi City of the Future

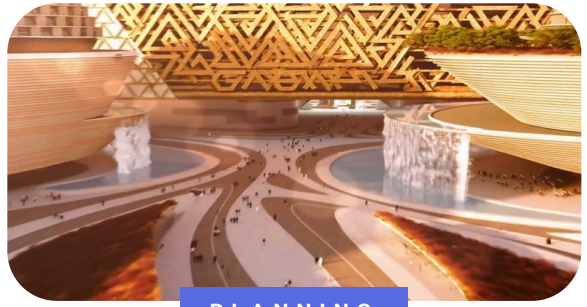
- An iconic landmark that features the latest innovative technologies
- A gigantic spiral tower at its center which will be jampacked with holograms, AI, robots, and gigantic video screens.



Large enough to hold 20 Empire State Buildings, featuring technologies to transport you to new worlds.







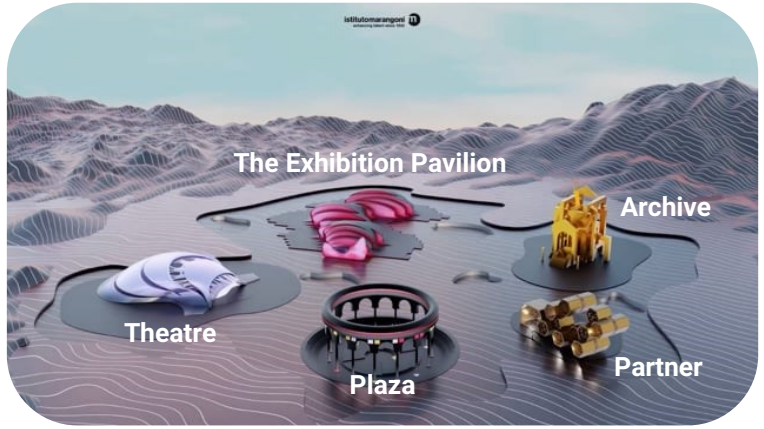
PLANNING

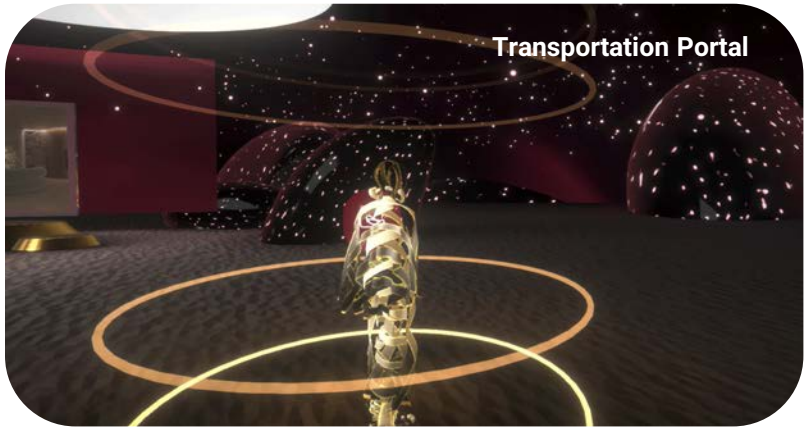
PRECEDENT STUDY ANALYSIS

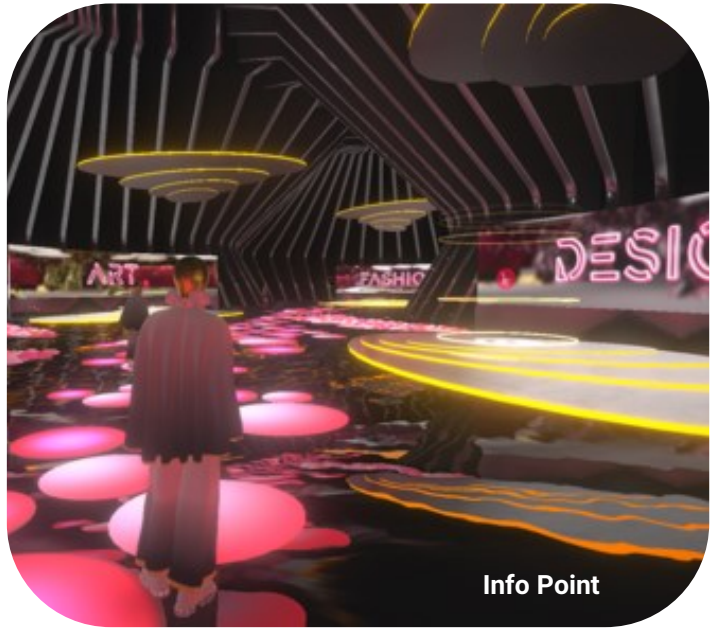
THE TALENT DISTRICT

Istituto Marangoni's Metaverse Revolution

- Revolutionizes visibility and engagement with student projects.
- The Metaverse is divided into futuristic districts, each featuring a distinct customizable building accessible to visitors' avatars.
- The Infopoint provides information on courses in Fashion, Design, and Art.
- The Exhibition Pavilion showcases the projects of top students, narrated by the students themselves.
- The Theatre hosts conferences, lectures, and talks, enhancing the academic experience.
- The Partners' House showcases projects for external companies through the I'M Corporate Lab.
- The Archive serves as a historical repository of the Institute's projects and activities.
- Each area contains multimedia materials and links to external resources for an immersive visitor experience.







PROGRAMMATIC DELINEATION

2023 / The Age of **Metaverse / AI / Blockchain**

\+

Need for **an Experimental Playground for Architects**

THE META-NAEUM

Virtual Institutional Space

User-Directed Program Network

Primary – Real-Time Testing

- **M-Test**
- **M-Llab**
- **M-Mulate**

Secondary – Congregation, Education & Social Interaction

- **M-Mate**
- **M-Vation**
- **M-Agora**
- **M-View**

Tertiary - Commercial

- **M-D Gallery**
- **M-Show**
- **M-Bator**
- **M-Net**

PROGRAMMATIC DEVELOPMENT

Primary – Real-Time Testing

M-Test

Meta + Testing Spaces
- Individual Spaces
- Group Spaces

M-Llab

Meta + Collaboration
- Communication & Collaboration

M-Mulate

Meta + Simulate
- Simulation Spaces
  - Real world
  - Disaster
  - Extreme Weather
- Customizable Spaces

Secondary – Congregation & Education

M-Mate

Meta + Learning
- Classrooms
- Webinars
- Workshops

M-Vation

Meta + Innovation
- Technology Lab
- Prototyping Space

M-Agora

An Agora Congregational Space – Heart of the Meta-naeum

M-View

Viewing Tunnels

Tertiary - Commercial

M-D Gallery

Meta + 3D Gallery
- Sale Purchase NFTs
- Specific / general Galleries

M-Show

Meta + Showroom
- Simulations for the Public

M-Bator

Meta + Incubator
- Business Incubator
- Resource Centre

M-Net

Meta + Network
- Lounge
- Coffee Shop

Ancillary Functions

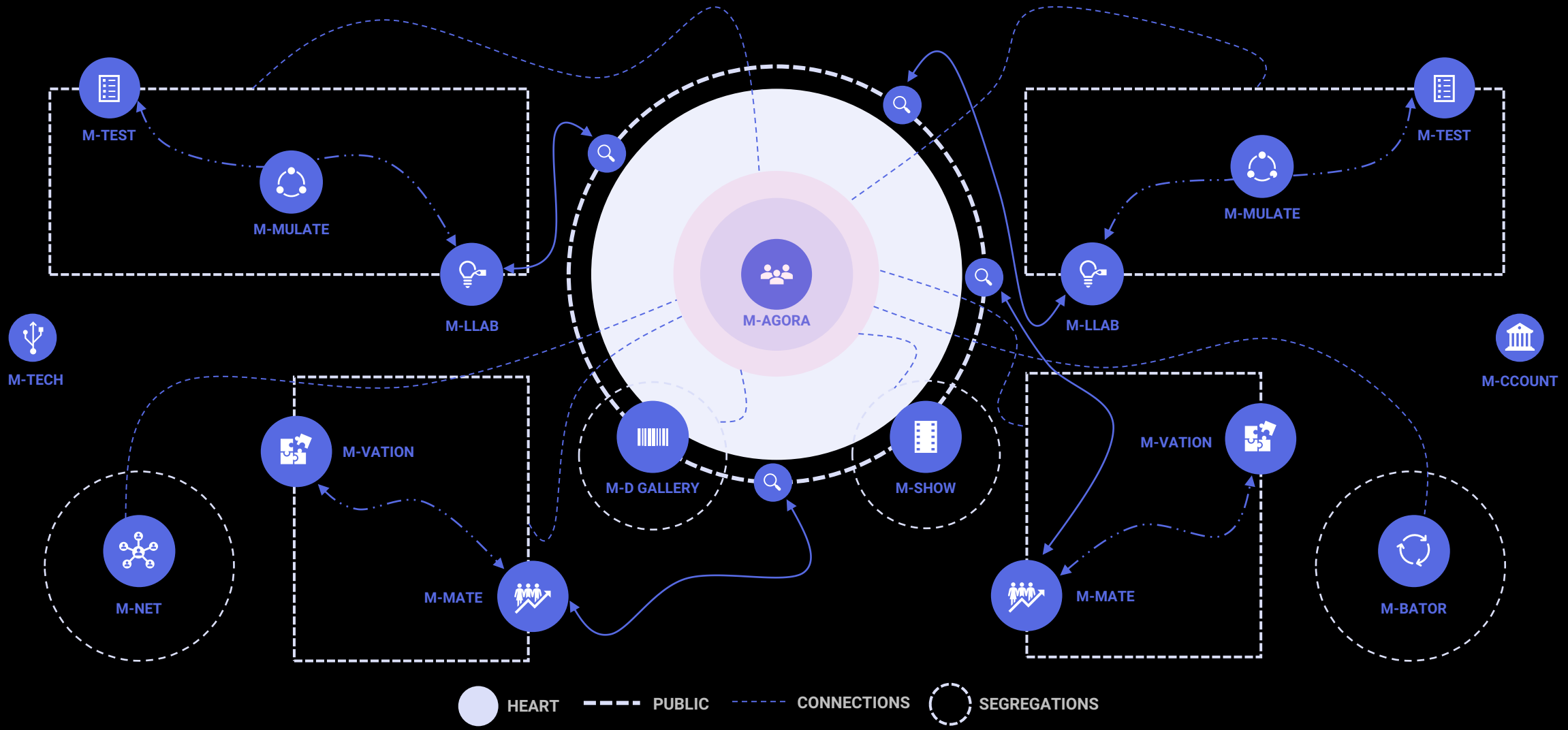
M-Tech

Meta + Technology
- Hardware
- Networking
- Security
- Sound + AV

M-Count

Meta + Accounts
- Management
- Circulation

PRELIMINARY PROGRAMMATIC NETWORK

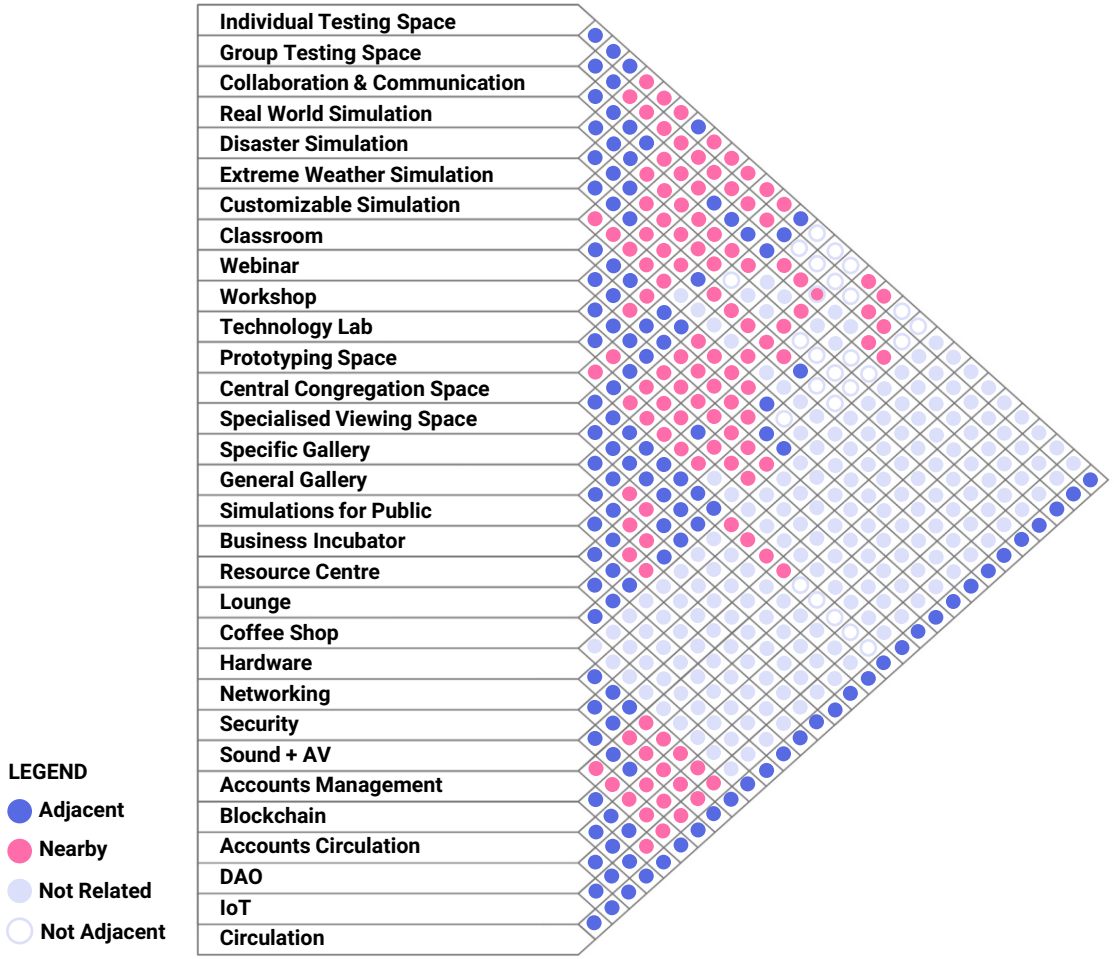


AREA - STATEMENT + ANALYSIS

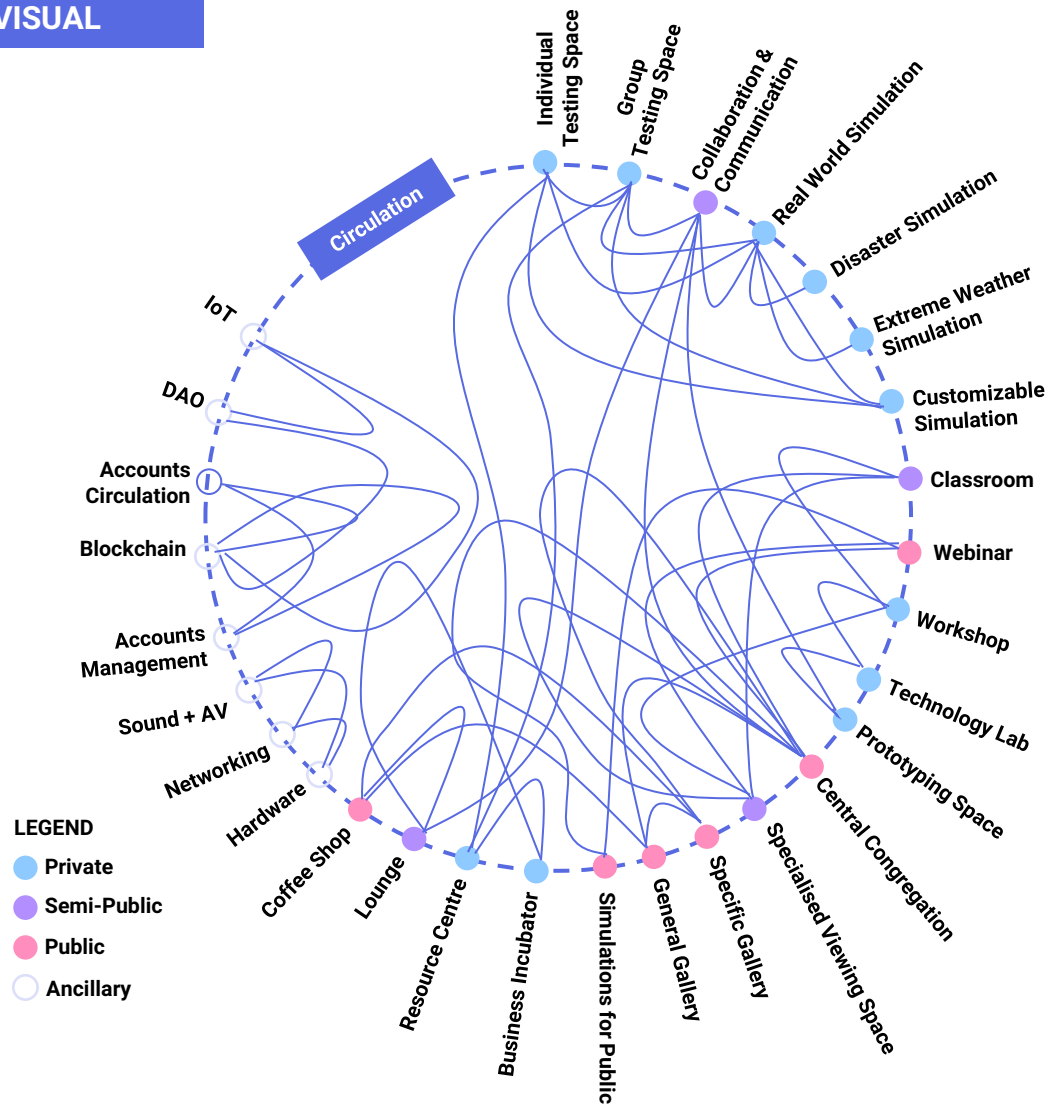
Function Code		Name	Functions	Codes	Description	No.s	Capacity (Persons)	Areas per Unit (Sq. M.)	Total Area (Sq. M.)	Area Pixel Analysis (16x16 m)	Public	Semi-Public	Private
45% = 3800 sq. m													
Primary	M_01	**M-Test**	Real-time Testing	M_01.1	Individual Testing Space	40	1	15	600	2.4 Px			
				M_01.2	Group Testing Space	25	10	50	1250	4.9 Px			
	M_02	**M-Llab**	Collaboration & Communication	M_02.1	Collaboration & Communication for Design	15	15	75	1125	4.4 Px			
	M_03	**M-Mulate**	Real-time Simulation	M_03.1	Real World	15	2	20	300	1.2 Px			
				M_03.2	Disaster	8	2	20	160	0.6 Px			
				M_03.3	Extreme Weather	8	2	20	160	0.6 Px			
				M_03.4	Customizable	10	2	20	200	0.8 Px			
25% = 2112 sq. m													
Secondary	M_04	**M-Mate**	Learning & Development	M_04.1	Classrooms	15	20	35	525	2 Px			
				M_04.2	Webinars	10	20	35	350	1.4 Px			
				M_04.3	Workshops	10	20	50	500	1.9 Px			
	M_05	**M-Vation**	Innovation	M_05.1	Technology Lab	5	5	20	100	0.4 Px			
				M_05.2	Prototyping Space	5	5	20	100	0.4 Px			
	M_06	**M-Agora**	Congregation	M_06.1	Central Congregation Space	1	100	500	500	1.9 Px			
	M_07	**M-View**	Transitional / Viewing	M_07.1	Specialised Viewing Space	6	5	5	30	0.2 Px			
15% = 1264 sq. m													
Tertiary	M_08	**M-D Gallery**	Gallery	M_08.1	Specific Gallery	6	15	50	300	1.2 Px			
				M_08.2	General Gallery	6	50	100	600	2.4 Px			
	M_09	**M-Show**	Public Showcase	M_09.1	Simulations for Public	5	10	50	250	1 Px			
	M_10	**M-Bator**	Incubator	M_10.1	Business Incubator	5	5	20	100	0.2 Px			
				M_10.2	Resource Center	2	5	20	40	0.4 Px			
	M_11	**M-Net**	Networking	M_11.1	Lounge	2	25	125	250	1 Px			
				M_11.2	Coffee Shop	2	10	50	100	0.4 Px			
Ancillary	M_12	**M-Tech**	Technology	M_12.1	Hardware	1	0	2	2				
				M_12.2	Networking	1	0	2	2				
				M_12.3	Security	1	0	2	2				
				M_12.4	Sound + AV	1	0	2	2				
	M_13	**M-Count**	Accounts	M_13.1	Management	1	0	2	2	0.07 Px			
				M_13.3	Circulation	1	0	2	2				
Circulation = 15% = 1268 sq. m													

ADJACENCY MATRIX

PHYSICAL



VISUAL



USER NETWORK DIAGRAM

ARCHITECTURE STUDENTS

YOUNG ARCHITECTS

SENIOR / PRINCIPAL ARCHITECTS

CONSULTANTS

M-TEST

M-VIEW

M-D GALLERY

M-SHOW

M-MULATE

M-AGORA

M-LLAB

M-NET

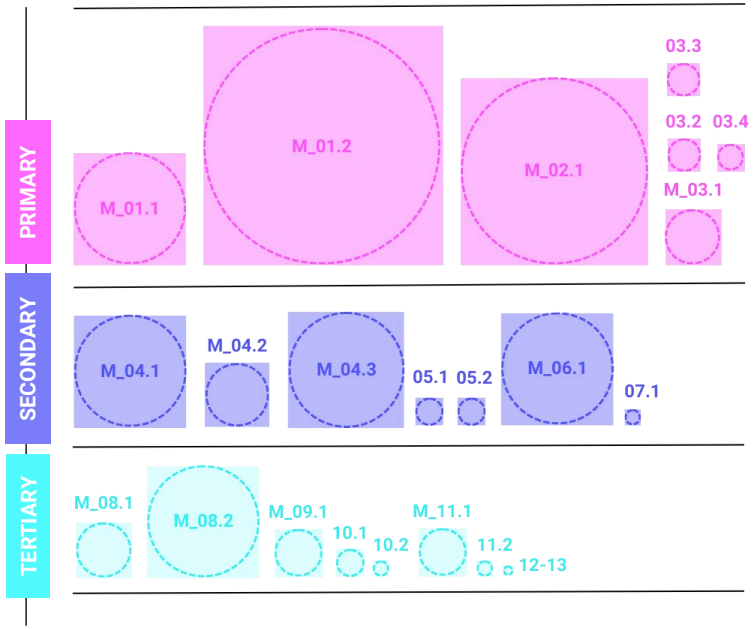
M-VATION

M-MATE

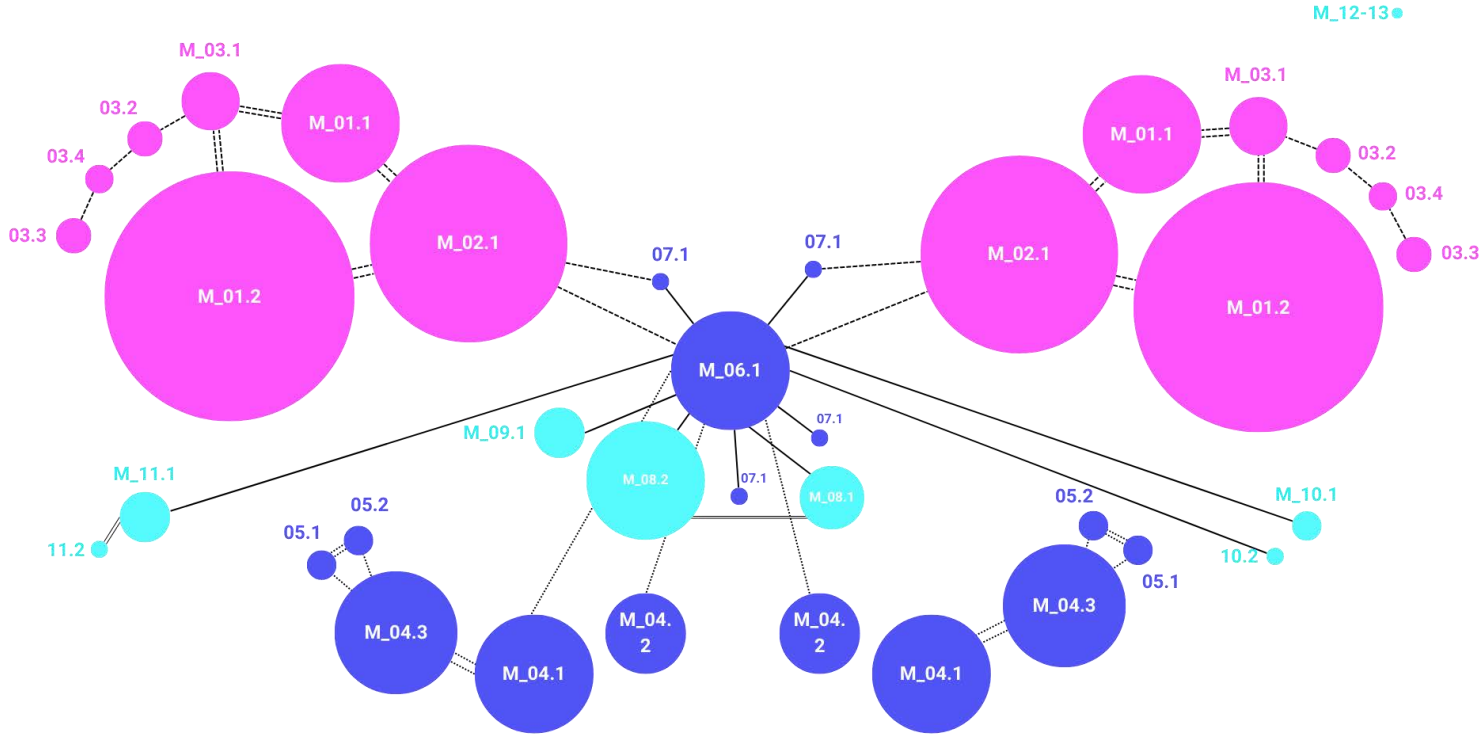
M-BATOR

PROGRAMMATIC NETWORK

Scale + Proportion / Primary Secondary Tertiary/ Hierarchy / Connections



LINEAR HIERARCHY



NETWORKING

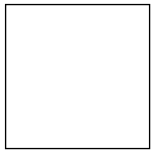
LEGEND

- Primary
- Secondary
- Tertiary
- Areas

- Direct Connections / Public
- Direct Connections / Semi Public
- Connections / Private
- Dependent Connections

DIMENSIONALITY + SCALE EVALUATION

Area + Volumetric Analysis



Area for Analysis = 1Px
= 16 x 16 m

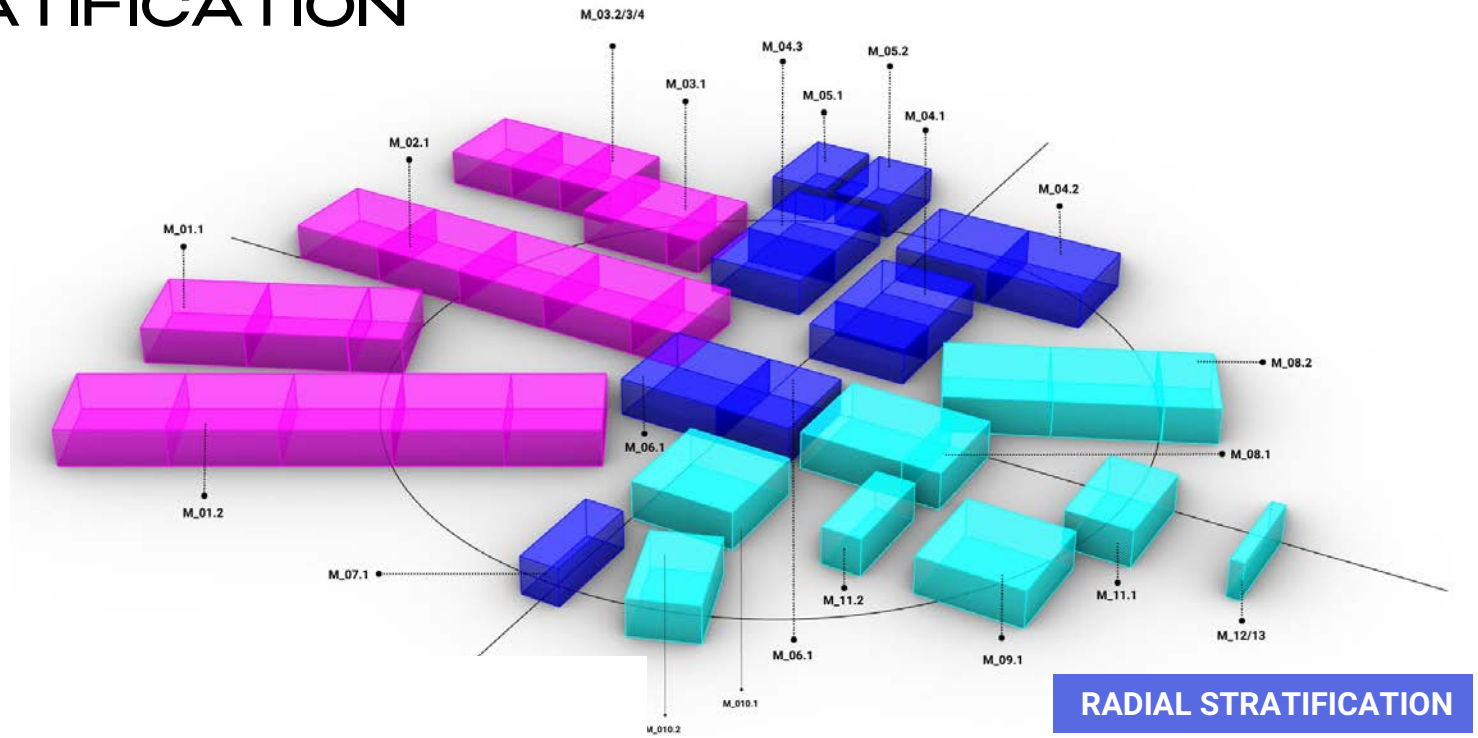
Height assumed = 6 m

LEGEND

- **Primary**
- **Secondary**
- **Tertiary**

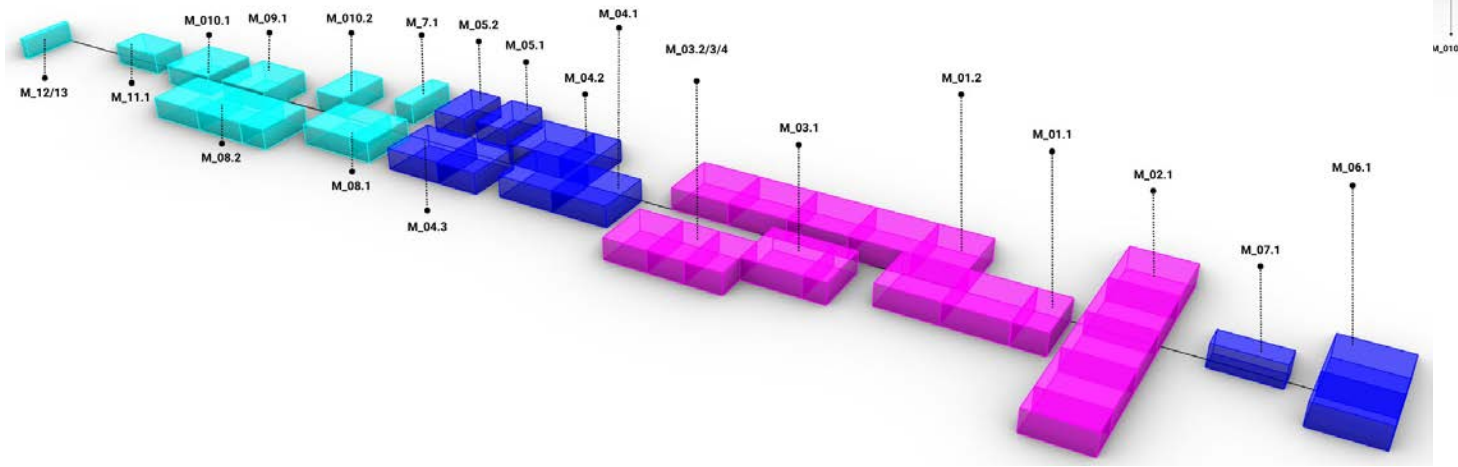
PROGRAMMATIC STRATIFICATION

Horizontal / Linear + Radial



RADIAL STRATIFICATION

LINEAR STRATIFICATION



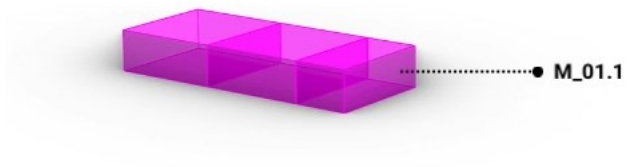
LEGEND

- Primary
- Secondary
- Tertiary

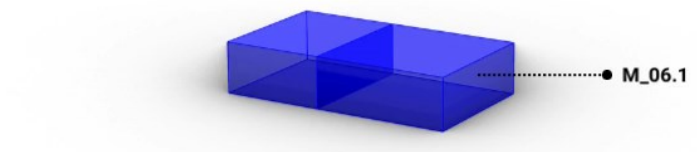
PROGRAMMATIC STRATIFICATION

Vertical / Fx + Usage

LEGEND
- Primary
- Secondary
- Tertiary



STRATIFICATION as/ FUNCTIONS *Organization: Linear*



STRATIFICATION as/ USAGE OF FUNCTIONS *Organization: Linear*

Decode Program

05 / THE PARAMETERS: Tailoring the Metanaeum Playground

THE METANAUEM PARAMETERS

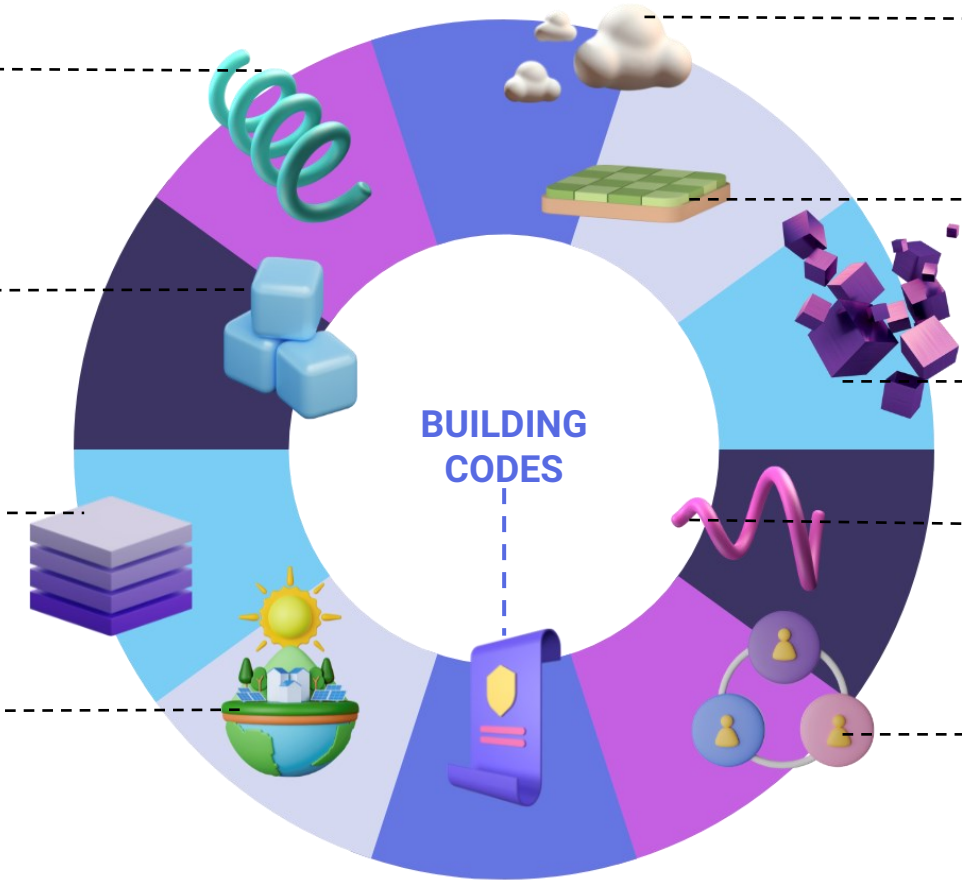
Defining parameters that users can use to modify the testing playground can help them provide a flexible and customizable environment that meets their project needs for in-depth analysis and exploration.

INTANGIBLES
- Senses – Sound, Touch, Smell, Visual
- Acoustics
- Accessibility

MATERIAL
- Durability
- Texture
- Thermal Properties

STRUCTURE
- Loads & Forces
- Material
- Span & heights
- Connections

SUSTAINABILITY
- Energy Efficiency
- Water Conservation
- Green Space



ENVIRONMENTAL
- Terrain & Topography
- Microclimate

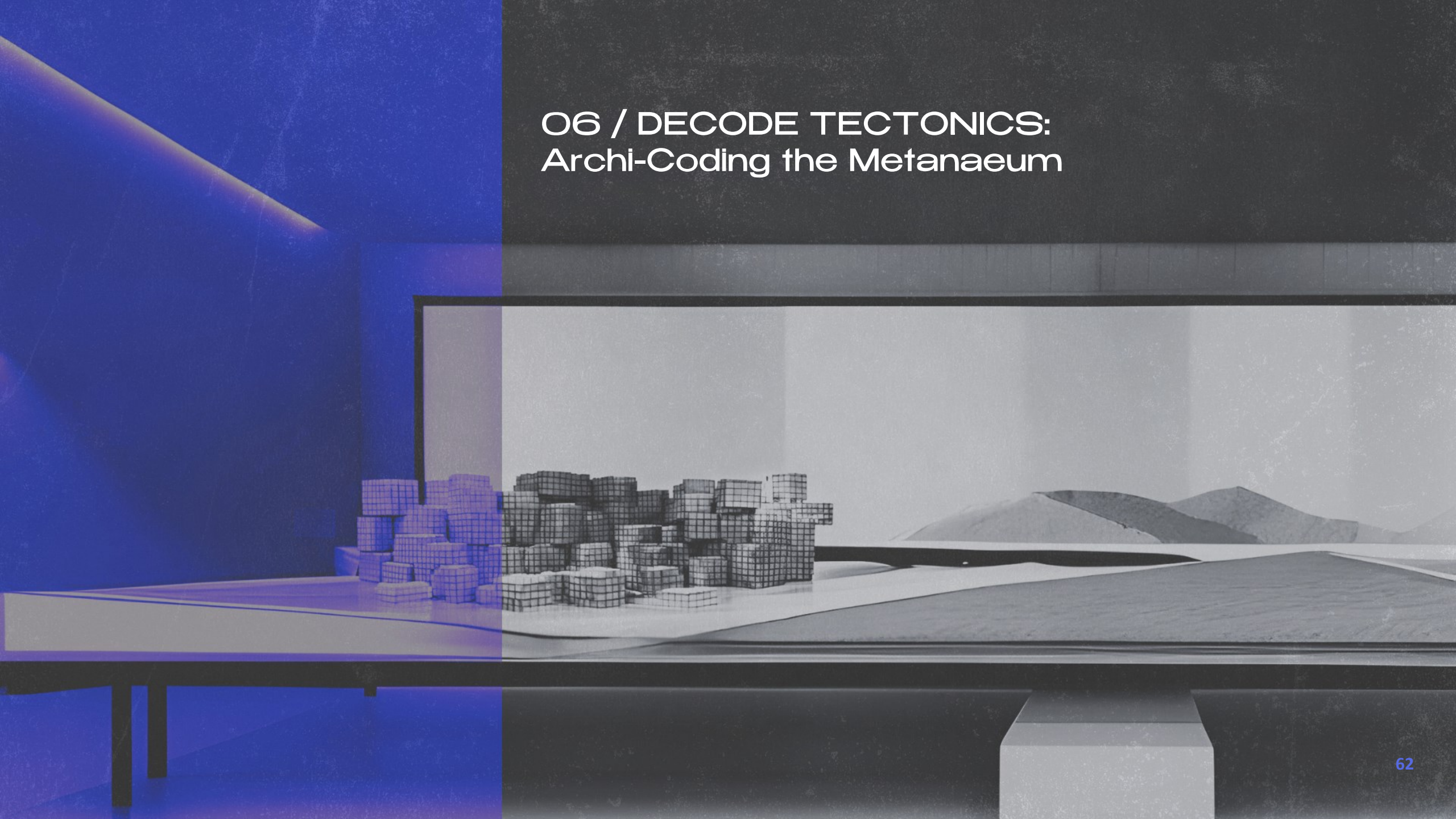
SITE CONDITIONS
- Orientation
- Surroundings

SHAPE, SCALE & SIZE
- Width Height Depth

PROGRAM
- Functions
- Accessibility
- Network

USERS
- Needs & Wants
- No.s
- Density

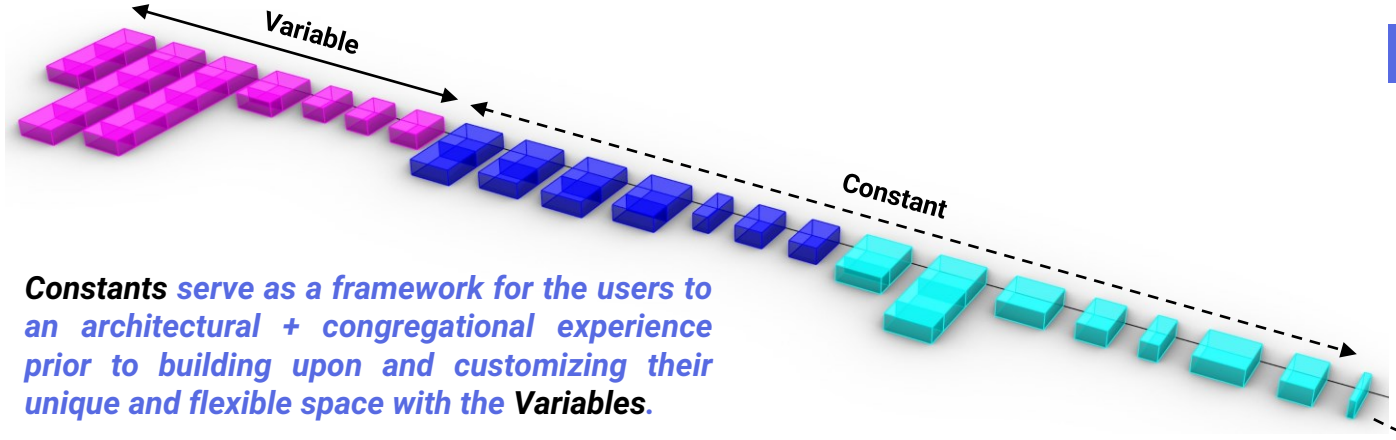
06 / DECODE TECTONICS:
Archi-Coding the Metanaeum



THE METANAUEM MASSING = M-MASSING

Defining + Arranging / Variables & Constants

LEGEND
- Primary
- Secondary
- Tertiary



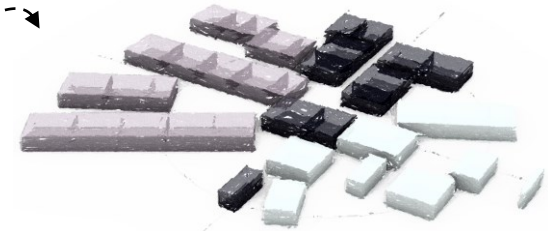
***Constants** serve as a framework for the users to an architectural + congregational experience prior to building upon and customizing their unique and flexible space with the **Variables**.*

Variable / Constant - Definition

Variables = Metanaeum Test XXX = Primary Fx = Modified by the users (size, shape, and program, etc.)

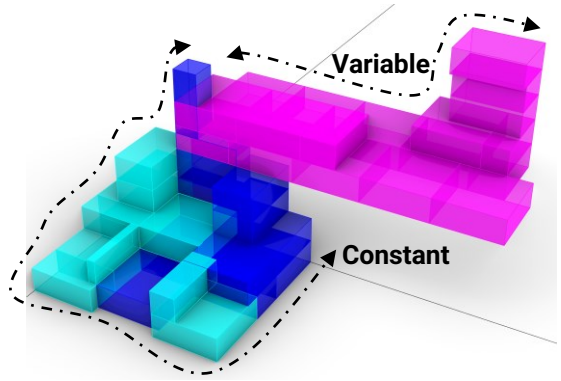
Constants = Metanaeum = Secondary and Tertiary Fx = Fixed (galleries, education, networking spaces, etc.)

Stratified Radially



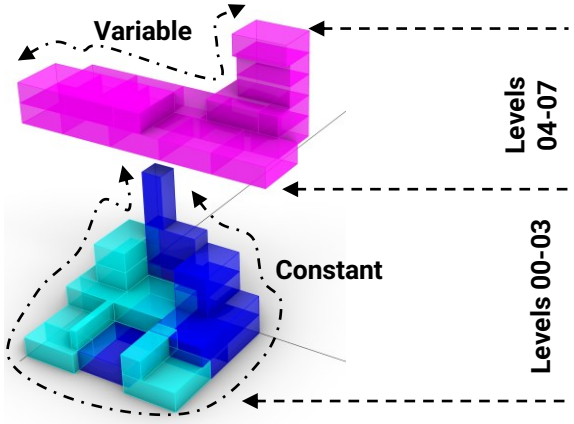
Variable / Constant - Arrangement

FUSION



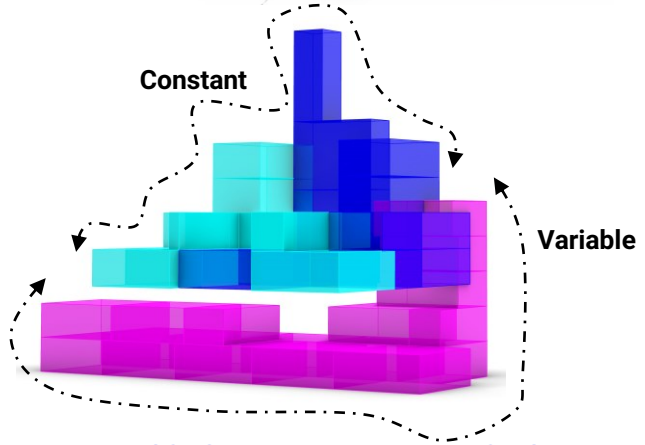
VARIABLE / CONSTANT – ARR. ITERATION A

FLOTATION



VARIABLE / CONSTANT – ARR. ITERATION B

BENEATH

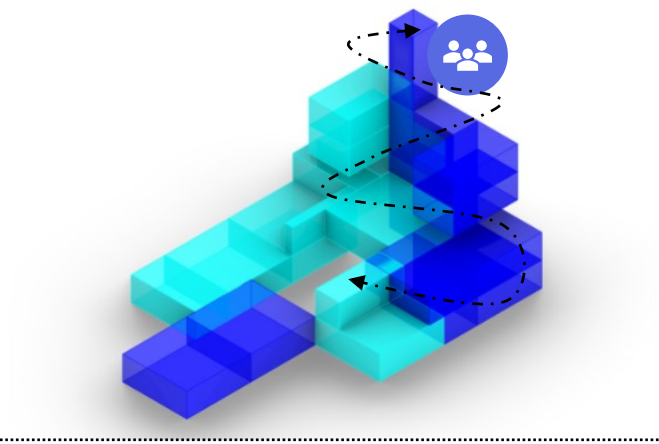


VARIABLE / CONSTANT – ARR. ITERATION C

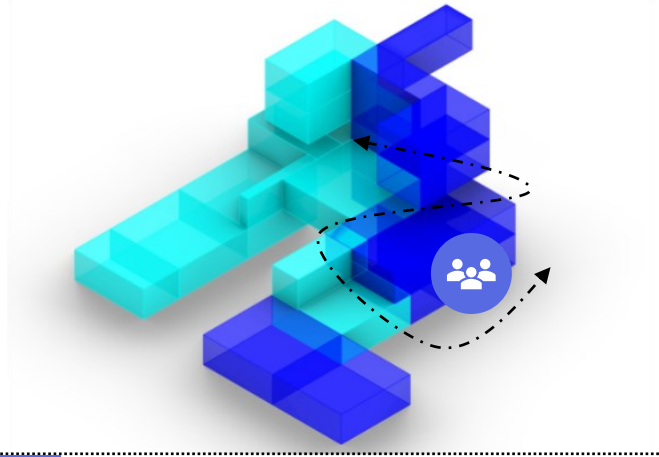
M-MASSING

Iterative Generations Catalog / Constants = Metanaeum

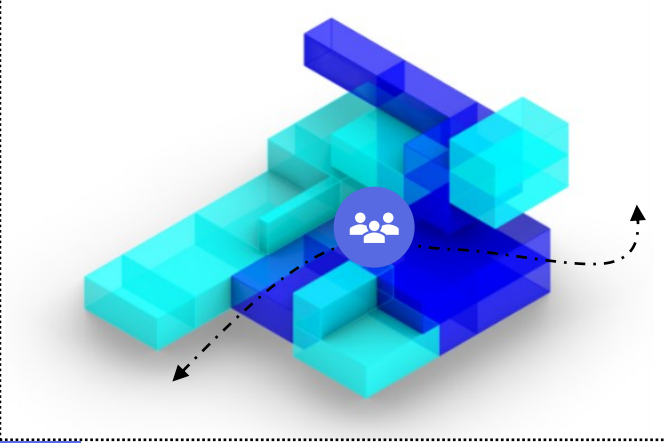
C1 *Linear Organization*



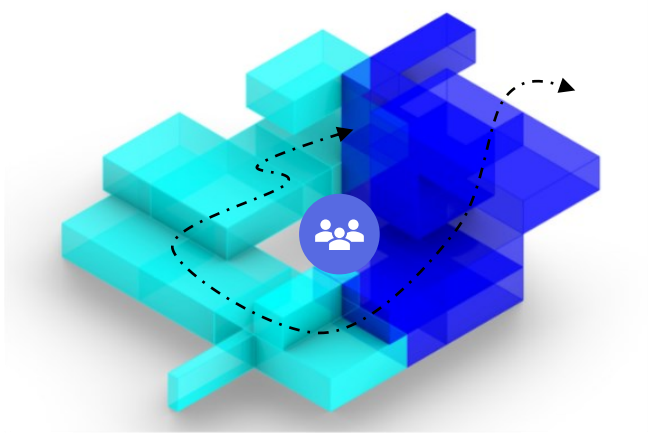
C2 *Linear Organization*



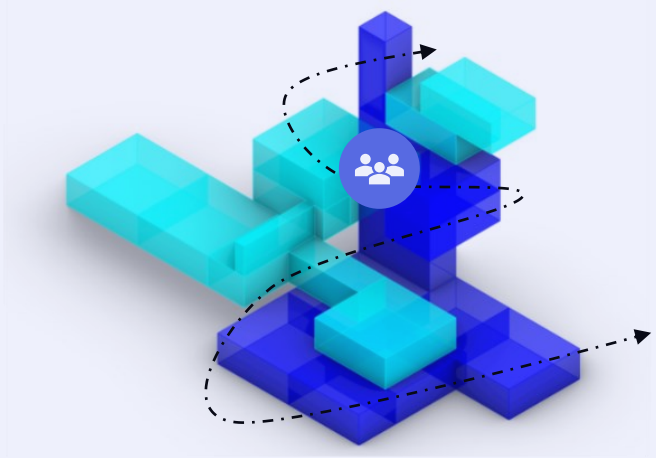
C3 *Clustered Central Organization*



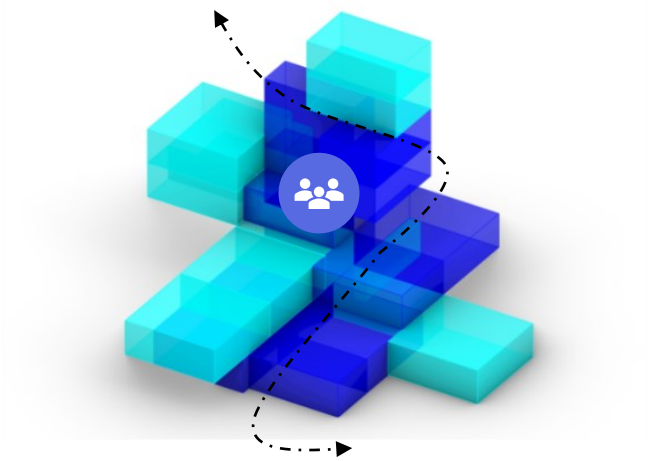
C4 *Radial Organization*



C5 *Radial Organization*



C6 *Clustered Radial Organization*



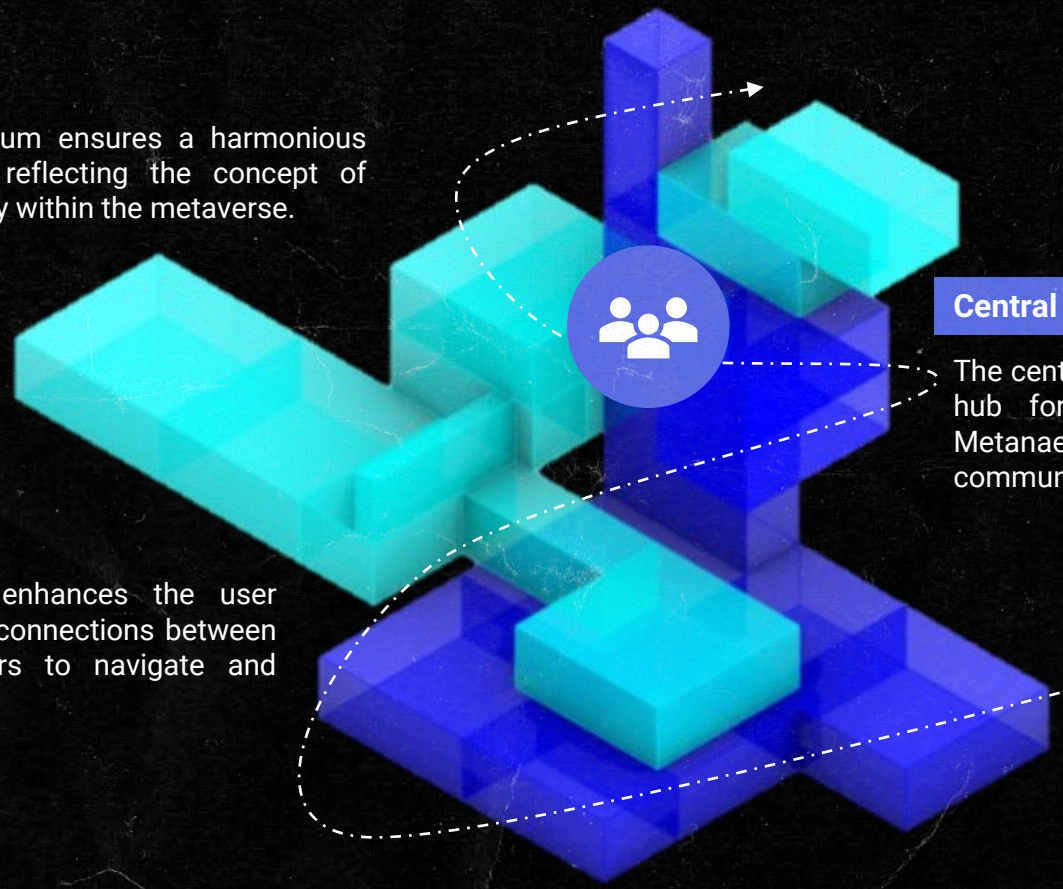
M-MASSING

Chosen Iteration / Constants = Metanaeum

C5 *Radial Organization*

Harmonious Spatial Flow

The radial organization of Metanaeum ensures a harmonious flow between different programs, reflecting the concept of seamless exploration and connectivity within the metaverse.



Central Hub for Collaboration

The centralized core in the radial layout serves as a vibrant hub for collaboration and interaction, aligning with Metanaeum's emphasis on fostering a collaborative community of architects and users.

Enhanced User Experience

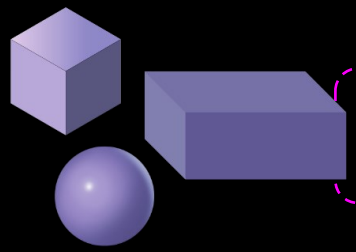
The radial form of Metanaeum enhances the user experience by providing clear visual connections between programmatic areas, enabling users to navigate and discover various spaces effortlessly.

Flexibility for Growth

The radial arrangement provides flexibility for the evolution of Metanaeum, accommodating the potential addition of new programmatic elements along the radial spokes to meet the growing needs of the architectural community.

M-MASSING

Methodology + Flow / Variables = Metanaeum Test XXX



Step 01 : Start with a basic form – Cube / Cuboid / Sphere to generate the mass

Step 02 : Select the Metanaeum parameters which evolve the mass

Step 03 : Development of logic for how parameters affect the form of the Metanaeum.

Step 04 : Modification of Mass

Step 05 : *Backend* Grasshopper definition to create massing

INPUTS

Ex: No. of Floors = X
Shape = Square

OUTPUTS

Step 06 : Iterations

Step 07 : Final Variable Mass

Interact with Constant Metanaeum

Constant + Variable = Metanaeum + Test XXX

Users can export to simulator / real world

Users input base parameters, and the platform generates a massing form in Grasshopper. Users can then manipulate the form in real-time by adding or removing program elements, changing materials, and more. This allows for quick iteration and experimentation until a desired solution is found. The resulting massing form is tailored to the user's specific requirements and ready for further design development.

LEGEND
- User
- The Platform

THE USER GENERATED M-MASSING

Matrix / Variables

Meta = M
Mass = M
Code for Metanaeum Mass = MM

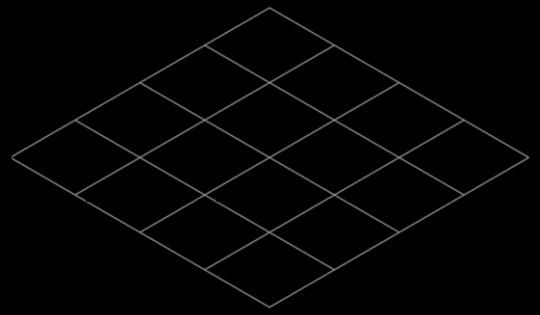
Constant
C + (Iteration No.) = C + 1 = C1

Parameters
PFx(Chosen Parameters)

Env = Environmental
Sc = Site Conditions
Ss = Shape, Scale & Size
Pr = Program
Us = Users
BC = Building Codes
It = intangibles
Mt = Material
St = Structure
Sus = Sustainability

Iteration Code Sample
MM_C1_PFx(Sc + Env)
MM_C5_PFx(Pr + Mt + Us)

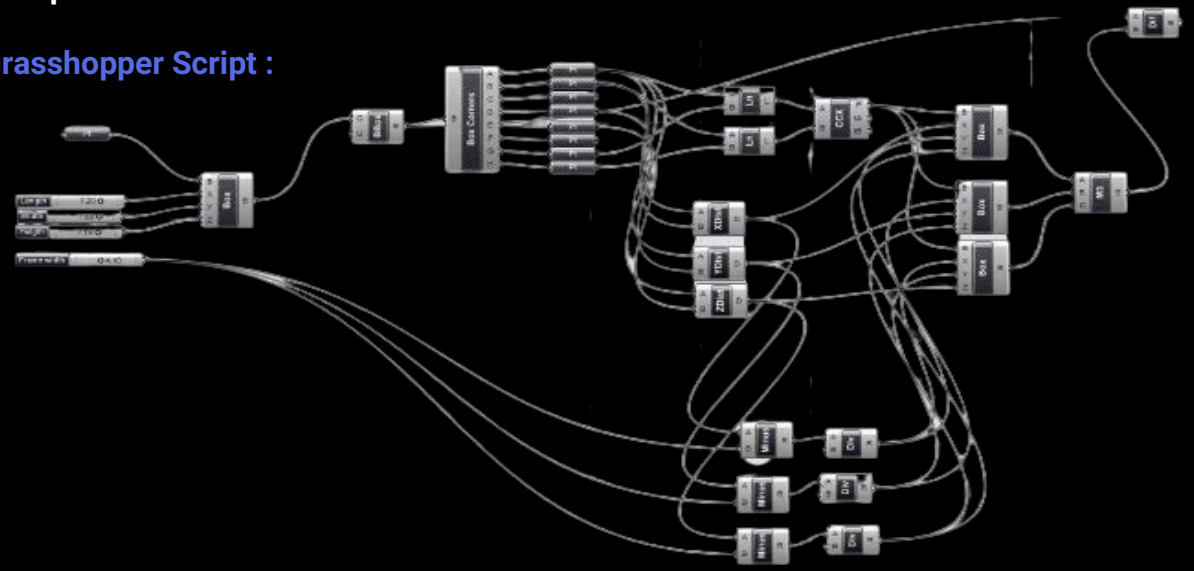
COMBINATIONS *Parameters + Constant*	NUMBER OF POSSIBLE ITERATIONS *(No. of PFx x 8 (Levels))*
1 PFx + Constant	8
2 PFx + Constant	16
3 PFx + Constant	24
4 PFx + Constant	32
5 PFx + Constant	40
6 PFx + Constant	48
7 PFx + Constant	56
8 PFx + Constant	64
9 PFx + Constant	72
10 PFx + Constant	80



Logic/ Methodology : The Metanaeum is a constant that is interjected with variable user-generated parameters and data further forming the parametrically driven Metanaeum mass.

- User defines input parameters through a user-friendly interface
- Parameters could include environmental conditions, site conditions, program, material, and more
- Grasshopper is integrated at the backend to generate a massing model
- Model can be adjusted in real-time based on changes to input parameters
- Final design can be interjected with other parameters and further simulated or exported

Grasshopper Script :

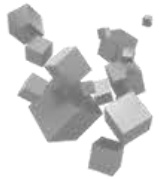


M-MASSING

Iterative Generations Catalog / Variables = Metanaeum Test XXX

(ENV) - Environmental

(SC) - Site Conditions



(SS) - Shape, Scale, Size

(PR) – Program

(US) – Users

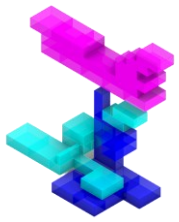
(BC) – Building Codes

(IT) – Intangibles

(MT) – Material

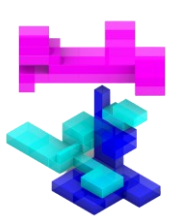
(ST) – Structure

(SUS) – Sustainability



PFx-1(Env)

Terrain



PFx-3(Sc)

Orientation

PFx-5(Sss)

Width Height Depth

PFx-7(Pr)

Network

PFx-9(Us)

Needs & Wants

PFx-11(Bc)

Rules & Regulations

PFx-13(It)

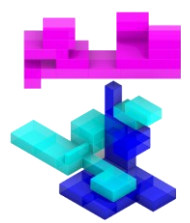
Senses

PFx-15(Mt)

Durability

PFx-17(St)

Loads & Forces



PFx-19(Sus)

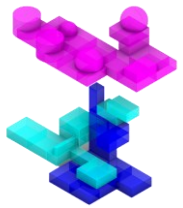
Energy Efficiency

PFx-2(Env)

Microclimate

PFx-4(Sc)

Surroundings



PFx-6(Sss)

Shape

PFx-8(Pr)

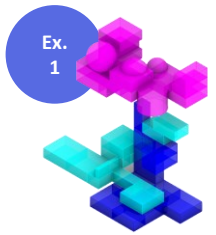
Functions

PFx-10(Us)

Density

PFx-12(Bc)

Zoning



PFx-14(It)

Identity

PFx-16(Mt)

Thermal Properties

PFx-18(St)

Large Spans

PFx-20(Sus)

Energy Conservation

Disclaimer: The iterations presented are a few examples based on the logic and methodology. As the tool is user-defined and generated, there are various other iterations possible.

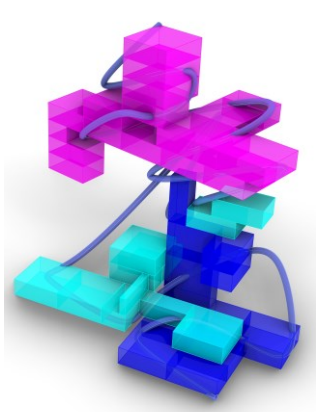
M-MASSING Logic + Ex / Variables

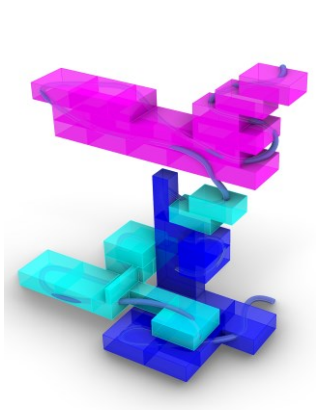
Parameter	Description	Example 1	Example 2	Example 3
ENVIRONMENTAL FACTORS	Wind and sunlight direction and intensity = orientation and shape of the building.	A site with strong winds may require a more aerodynamic building form	A site with limited sunlight may require the building to have more glazed surfaces	A site with high levels of noise pollution may require a thicker building envelope
SITE CONDITIONS	Topography and surrounding context = building's footprint, height, and massing.	A narrow site may require the building to have a smaller footprint and taller height	A sloping site may require the building to have a stepped form to follow the contours of the land	A site with restricted access may require the building to have a more compact form
SHAPE	Shape of the building = parametrically defined based on user requirements.	A curved building form may be used to create a more dynamic and organic design	A rectilinear building form may be used to maximize internal floor area and efficiency	A twisted building form may be used to create visual interest and a unique identity
SCALE AND SIZE	Scale and size of the building = program requirements and site constraints.	A large building may be broken down into smaller masses to reduce its visual impact	A small building may be designed to be more intimate and inviting	A building with a monumental scale may be designed to convey a sense of grandeur and importance
PROGRAM	Program requirements = building's massing and organization.	A building with large open plan spaces may require fewer internal walls and a more flexible floor plan	A building with a high occupancy load may require larger circulation spaces and multiple means of egress	A building with specific functional requirements may require specialized spaces and equipment
USERS	User requirements and preferences = incorporated into the massing and design of the building.	A building designed for children may require lower ceiling heights and smaller furniture	A building designed for elderly users may require easier access and more natural lighting	A building designed for a cultural group may incorporate design elements that reflect their values and beliefs
INTANGIBLE	Intangible factors such as user experience, mood, and emotion = create a more engaging and meaningful architecture.	The building's desired image and brand identity may dictate the use of certain materials and finishes	The building's connection to the surrounding context and community may inform the building's design language	The building's desired energy performance may dictate the use of specific passive and active strategies
MATERIAL	Choice of materials = form and expression of the building.	A building designed for a hot & humid climate may use materials with high thermal mass & natural ventilation strategies	A building designed for a cold climate may use materials with high insulation values and airtight construction	A building designed for a seismic zone may use materials and construction techniques that can resist lateral loads
STRUCTURE	Structural system = form of the building.	The structural system may inform the building's form and shape, such as a steel frame building with large spans	The structural system may inform the building's use of space, such as a column-free interior for maximum flexibility	The structural system may inform the building's design aesthetic, such as an exposed concrete structure for an industrial look
SUSTAINABILITY	Sustainable design considerations = form and massing of the building.	A building designed for sustainable performance may incorporate renewable energy sources, such as solar panels or wind turbines	A building designed for water efficiency may incorporate rainwater harvesting systems and low-flow fixtures	A building designed for material sustainability may incorporate recycled or low-impact materials in its construction

Source(s): Environmental factors, "The Architecture of Light: Natural Light in Building Design" by Mary Ann. Site conditions, "Site Planning and Design Handbook" by Thomas Russ. Shape, "Form Follows Energy: Innovative Architecture for the 21st Century" by Richard G. Stein. Scale and size, "Building Construction Illustrated" by Francis D.K. Ching. Architectural program development, "Architectural Programming: Information Management for Design" by Preethi Sivasankar. Users, "The Experience of Architecture" by Henry Plummer. Intangible Factors, "The Eyes of the Skin: Architecture and the Senses" by Juhani Pallasmaa. Material, "Material Architecture: Emergent Materials for Innovative Buildings" by John Fernandez offers an exploration of cutting-edge materials in architecture. Sustainable design, "Designing for Sustainability: A Guide to Building Greener Digital Products" by Nishita Pawar.

M-MASSING

Iterative Generations / Variables + Constants


PFx-15(Mt)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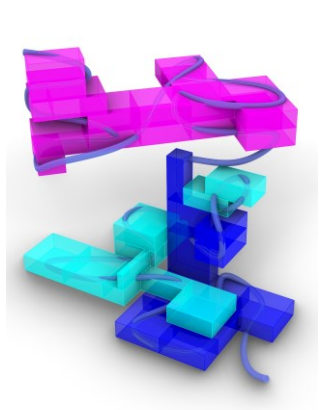
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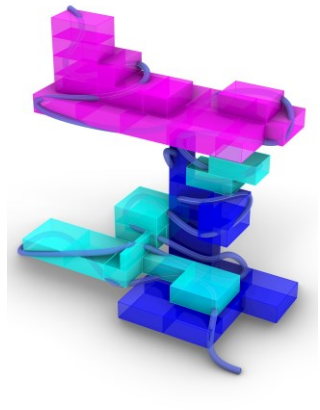
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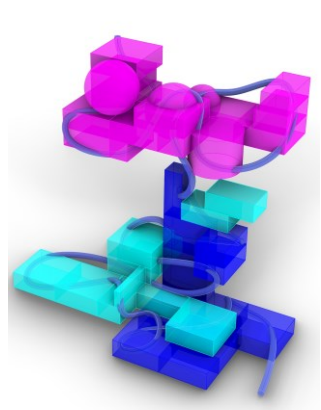
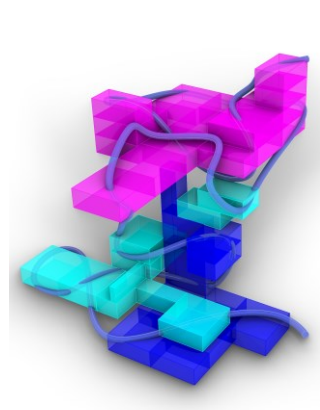
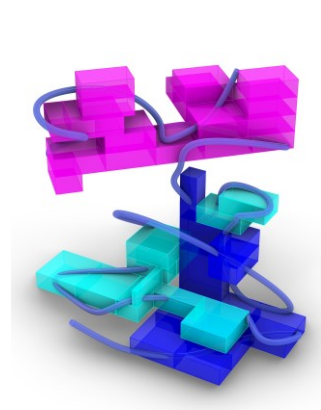
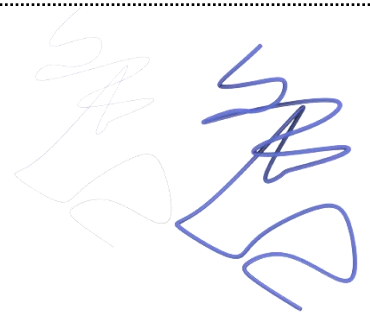

PFx-14(It)


PFx-18(St)


PFx-19(Sus)



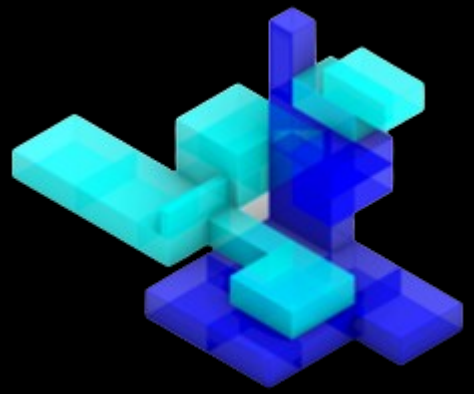
- **A specialized "mass" designed and developed:**
  - Creates space for movement and observation.
  - Facilitates interaction.
  - Has an intuitive artery that aids in the above.
- **The programs are integrated throughout.**

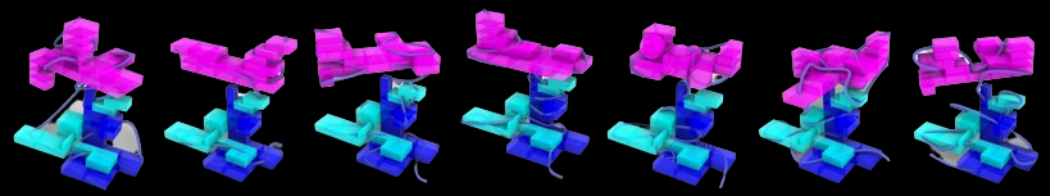
- **Access is restricted where necessary to control permeability.**
- **A circulating mass intersects the heart:**
  - Assists the variable mass in adapting.
  - Provides networking between the constant and variable elements.
  - Allows for flexibility.

Disclaimer: This exploration is not intended to "formally" be a tunnel or pipe, but rather an exploration of massing using an unconventional "mass". This is to explore the full range of design possibilities.

THE METANAEUM FORM

Development / Concept





Constant Mass + **Fluidity / Flexibility / Integration** + **Variable Mass**

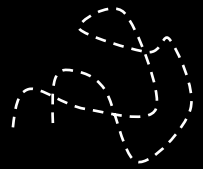
As per Programmatic Massing & Spatial Organization

Unconventional Mass Exploration

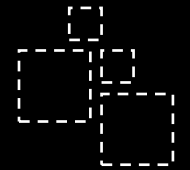
As per User Generated Parameters & Data

TECTONIC VALUES

CIRCULAR GEOMETRY / SPHERICAL MASS
Evoking a sense of belongingness & familiarity / Initiating the start of something new



ORGANIC DEFINITION LINES
Encouraging Flexibility / Movement / Interaction, Descriptive of Connections

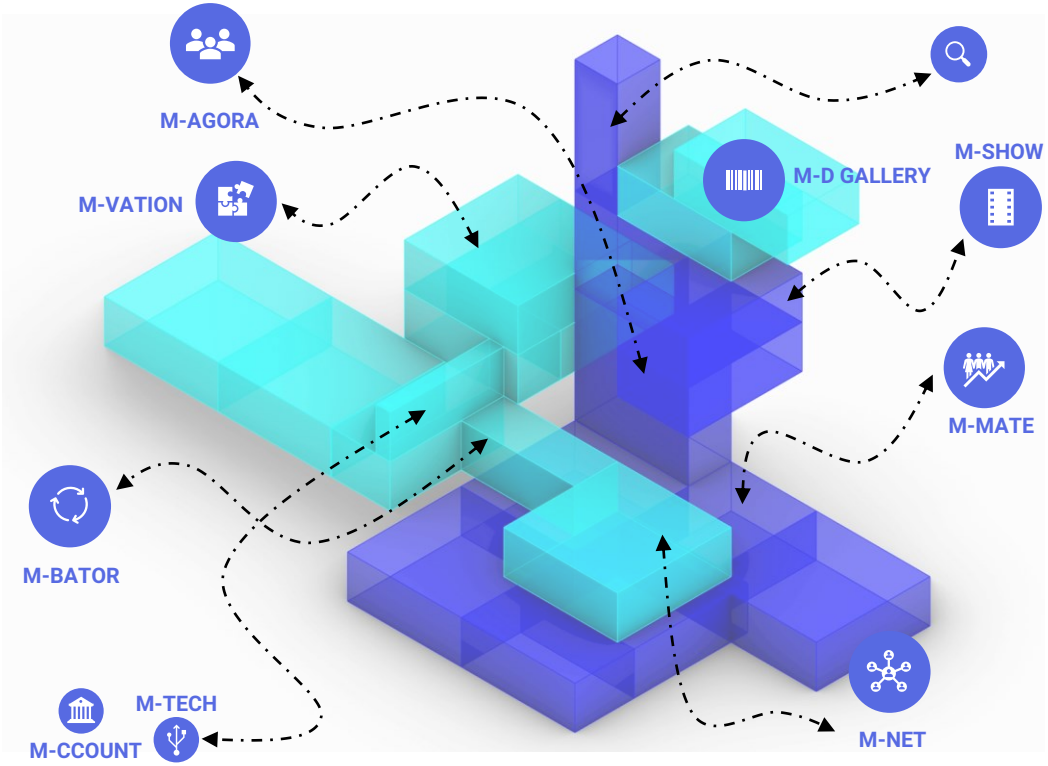


SQUARE GEOMETRY / CUBOIDAL MASS
Fusion of Familiar with Unfamiliar, Age of Metaverse / AI

THE METANAEUM FORM

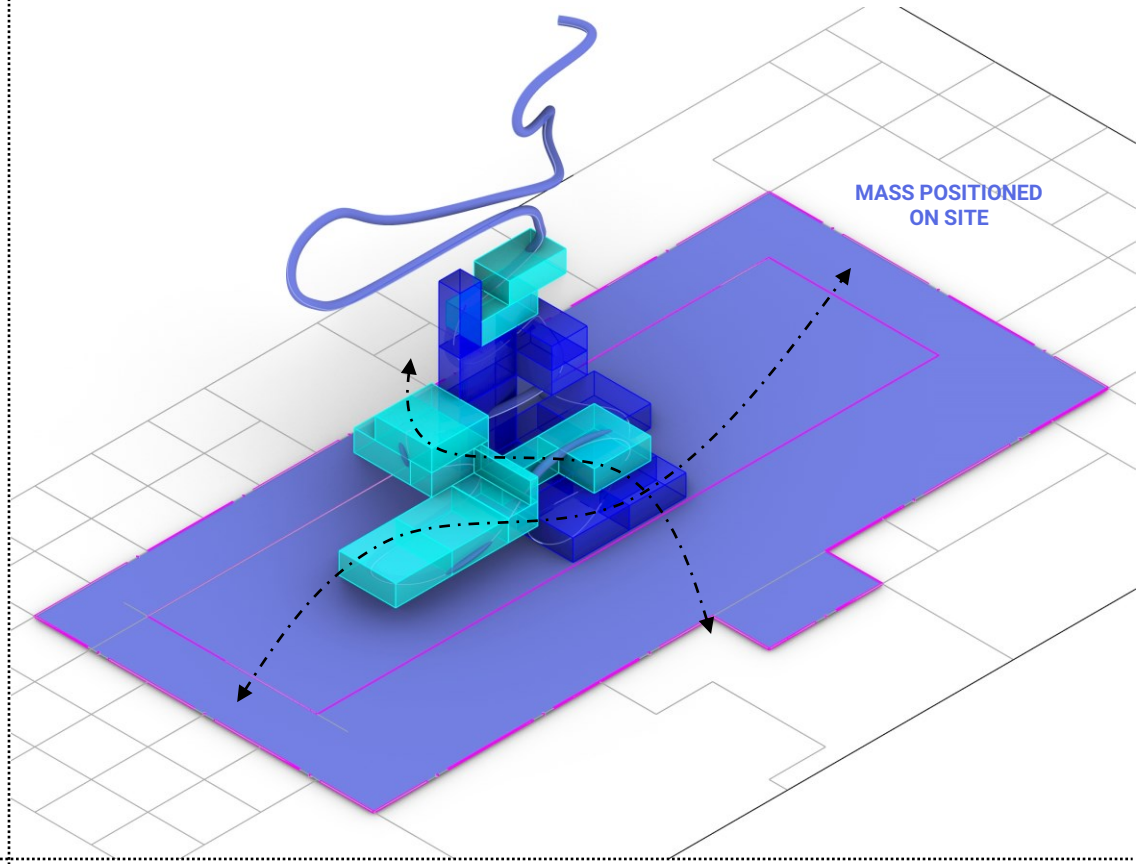
Development – Morph 1.0 + 2.0 / Constant Form

M 1.0 *Programmatic Morph*



Designing for Functionality

M 2.0 *Site Morph*

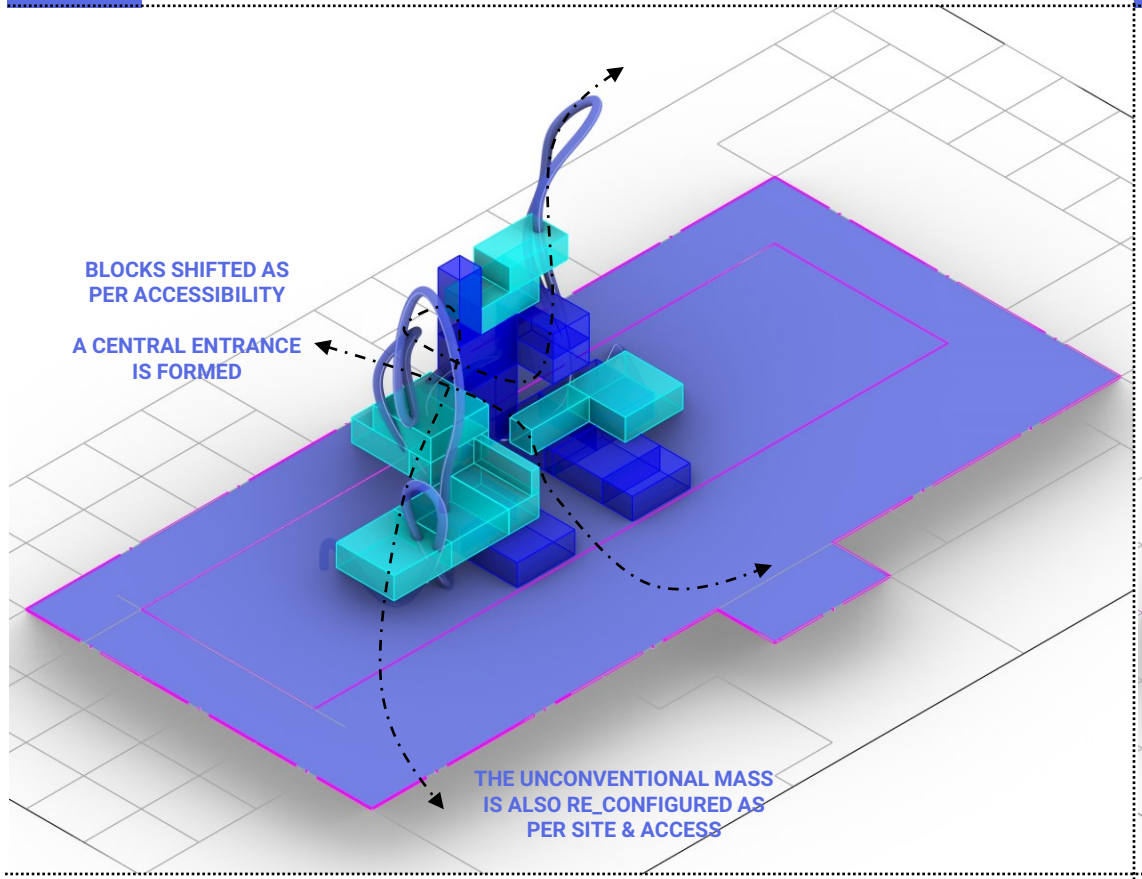


Responding to Context

THE METANAEUM FORM

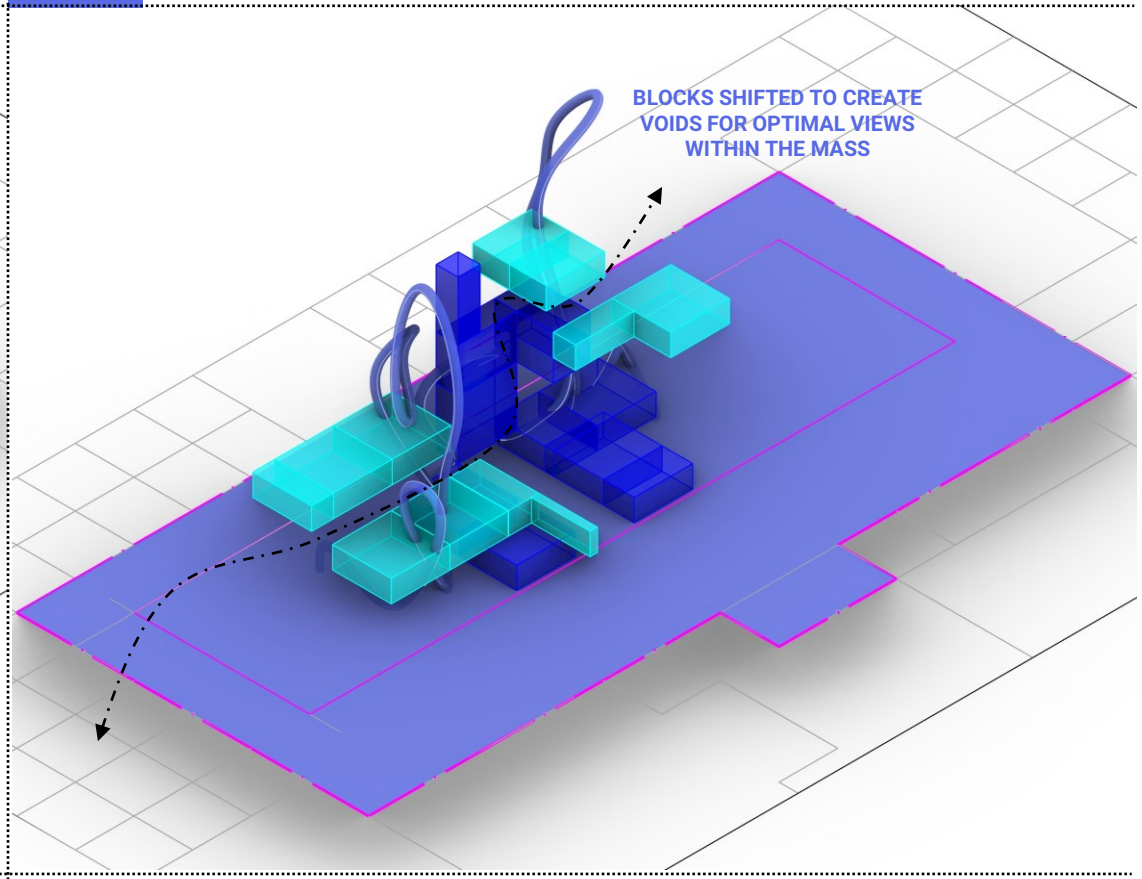
Development – Morph 2.1 + 2.2 / Constant Form

M 2.1 *Site - Access Morph*



Designing for Mobility

M 2.2 *Site - Position Morph*

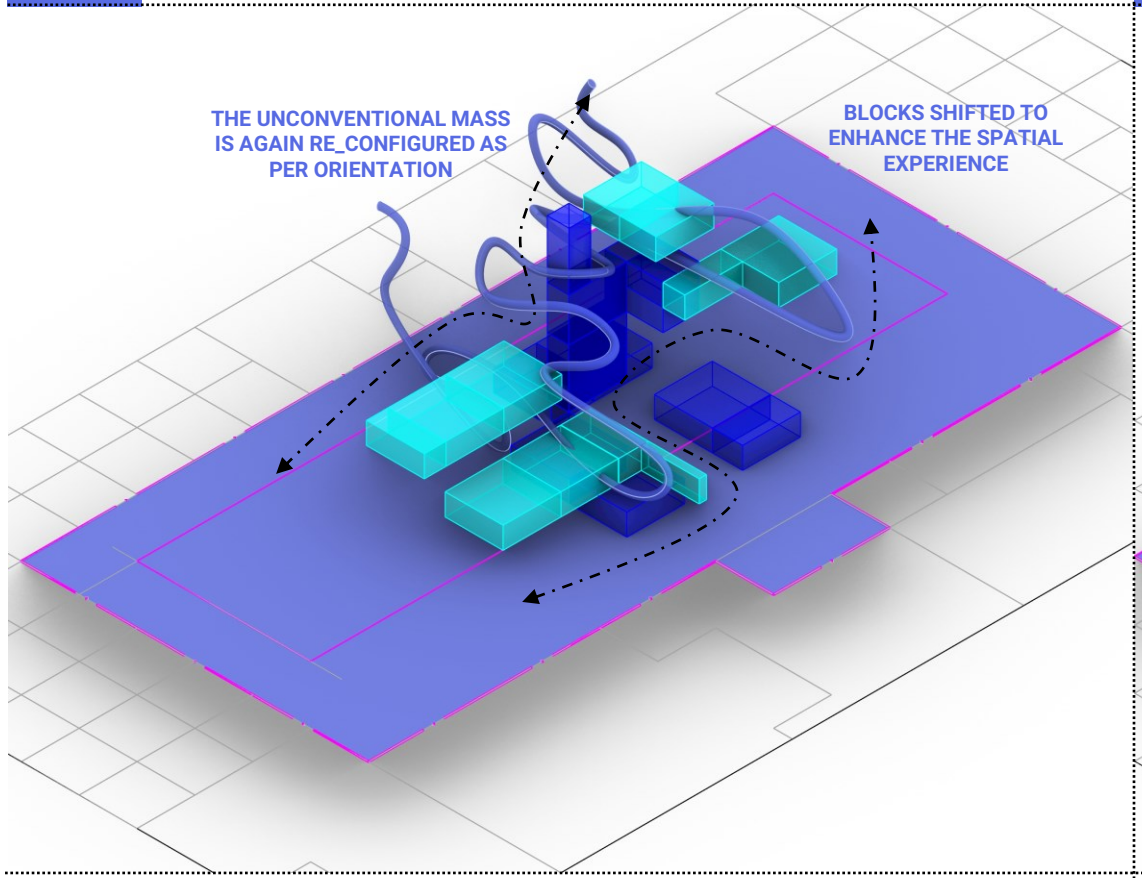


Optimizing Views

THE METANAEUM FORM

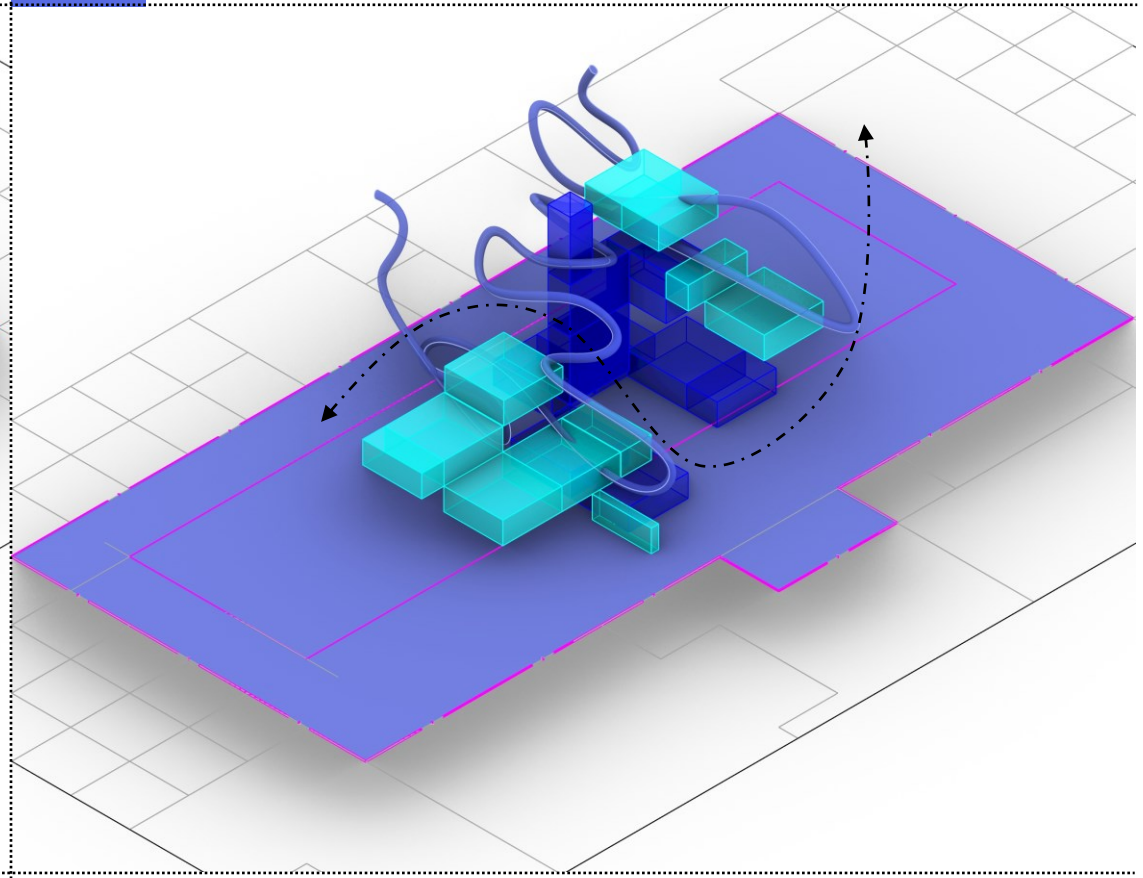
Development – Morph 2.3 + 2.4 / Constant Form

M 2.3 *Site - Orientation Morph*



Optimal Orientation to Enhance the Spatial Experience

M 2.4 *Site - Visual Morph*

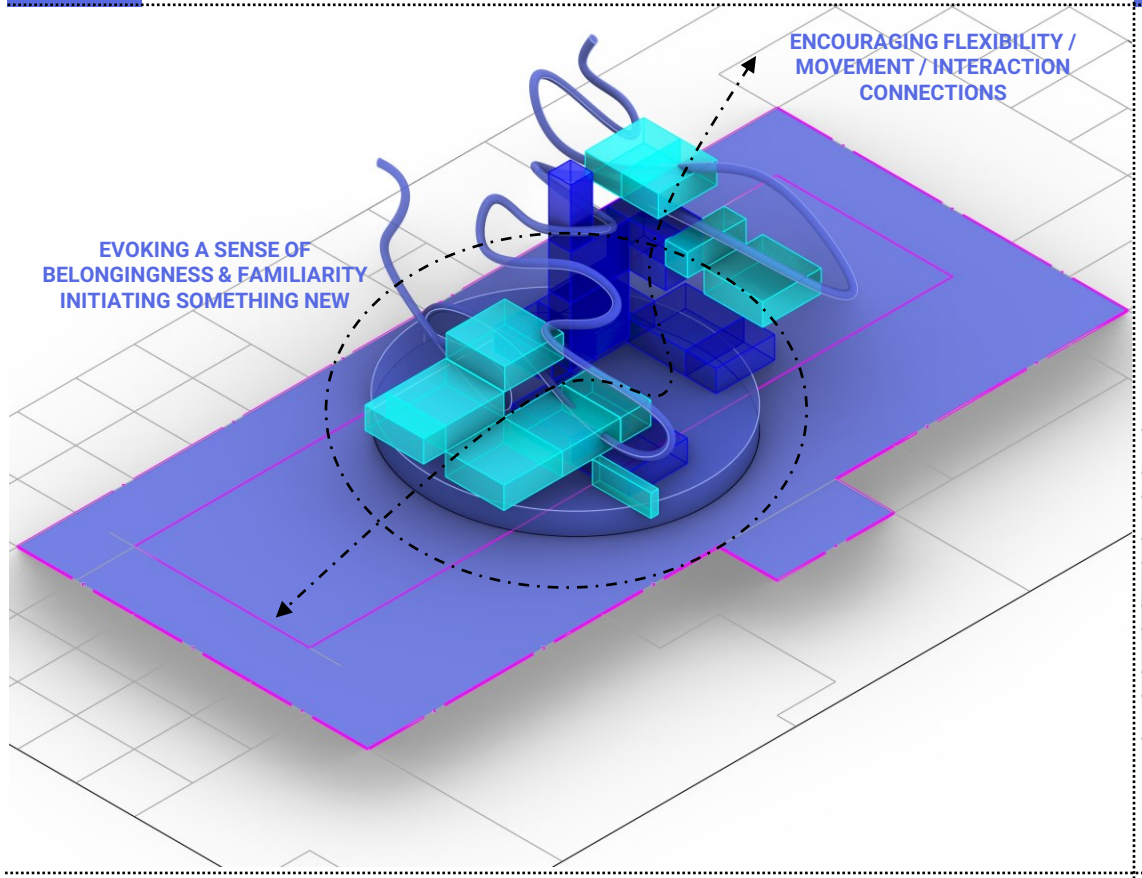


Creating an Iconic Presence

THE METANAEUM FORM

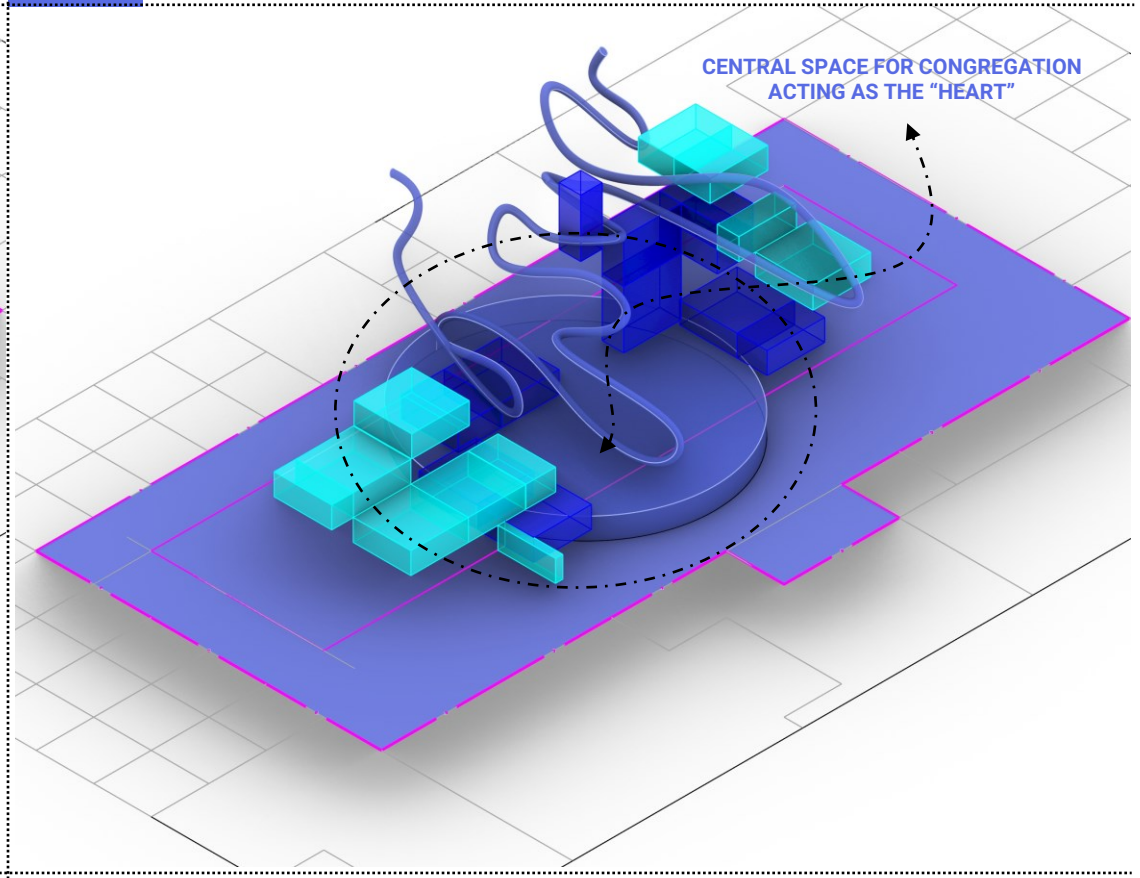
Development – Morph 3.0 + 4.0 / Constant Form

M 3.0 *Tectonic Value System Morph*



Balancing Form and Function

M 4.0 *Concept & Purpose Morph*

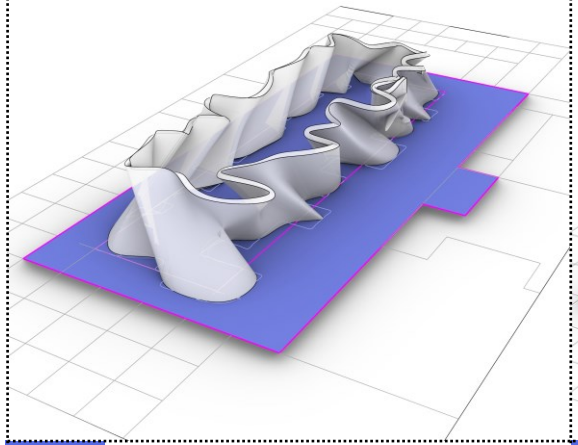


Designing for the Future with Knowledge of the Past

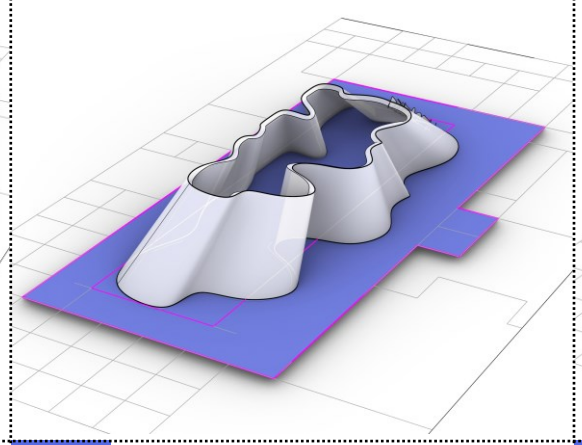
THE METANAEUM FORM

Form Library / Constant Form

I_01



I_02



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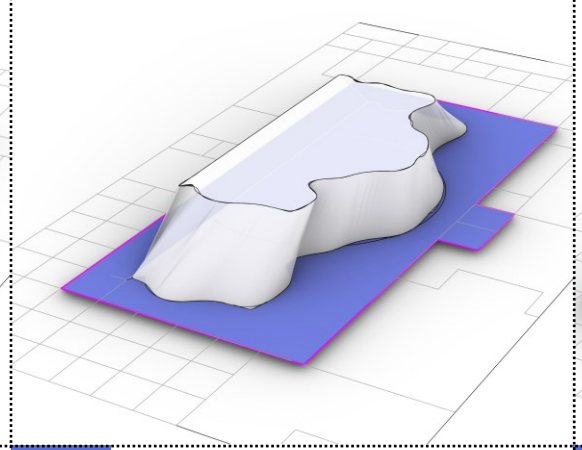

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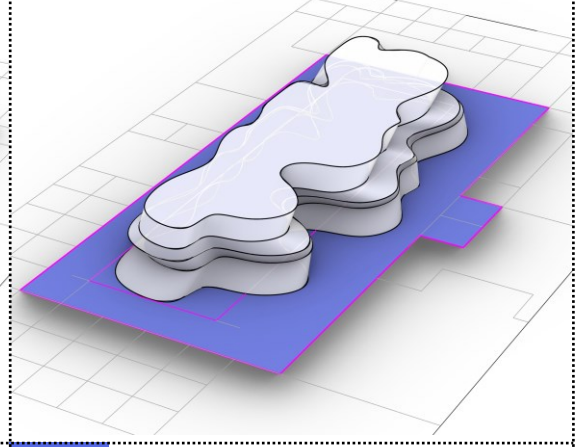

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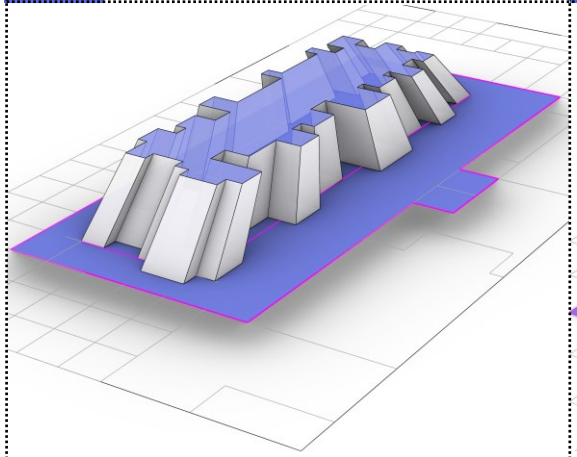

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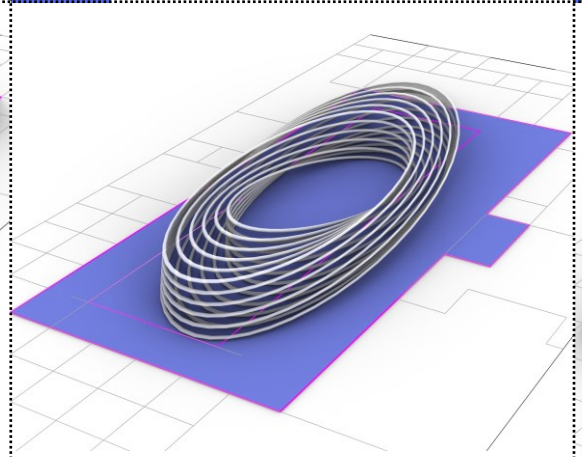

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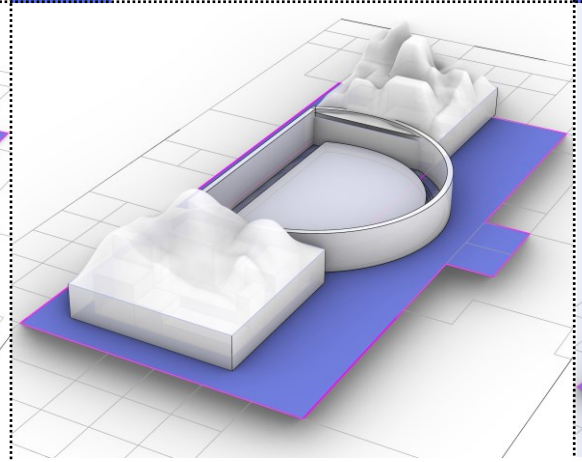

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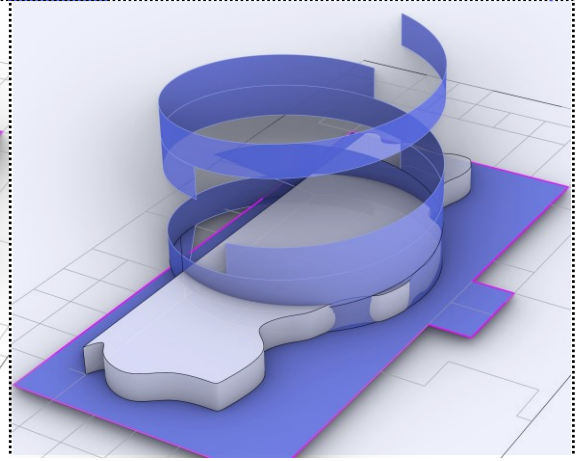
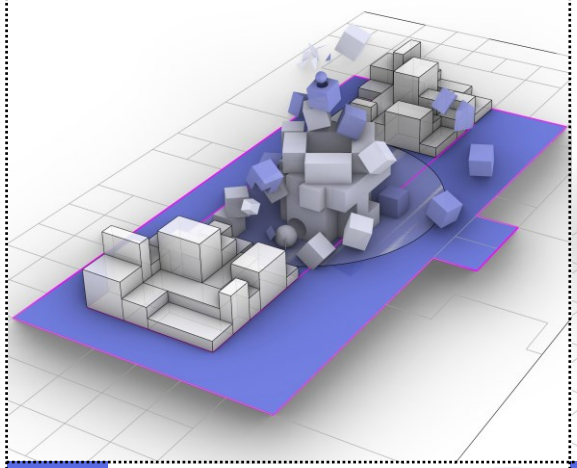


THE METANAEUM FORM

Form Library / Constant Form

I_09



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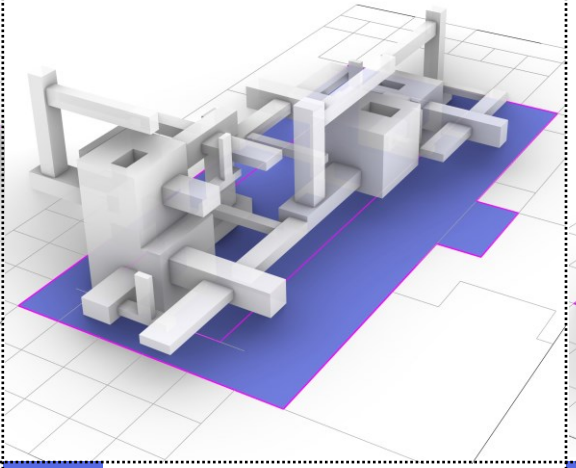

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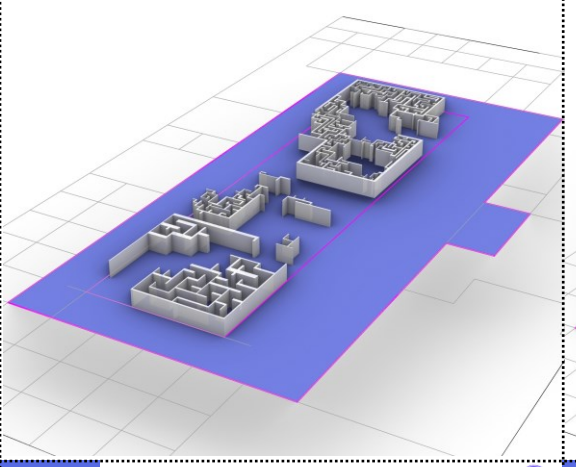

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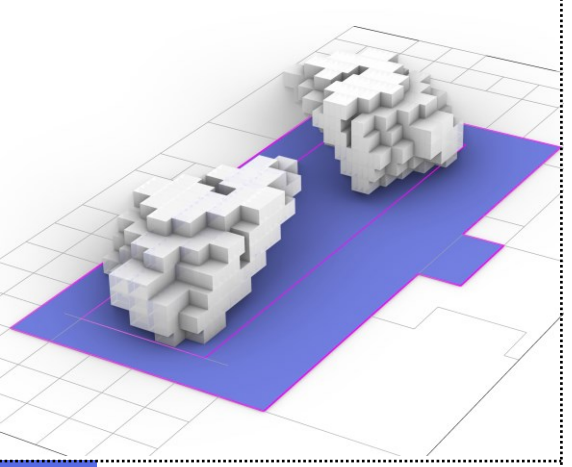

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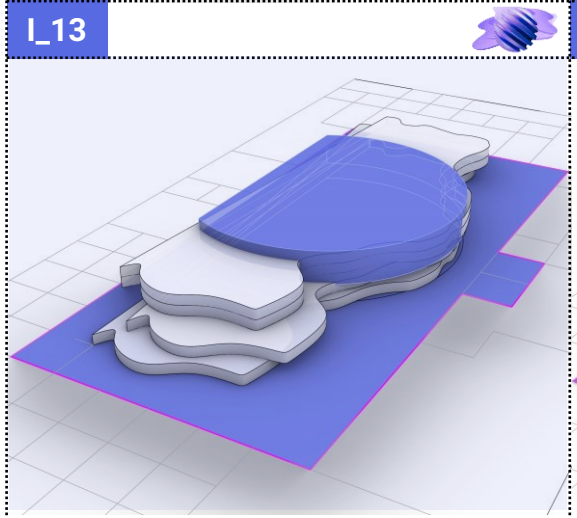

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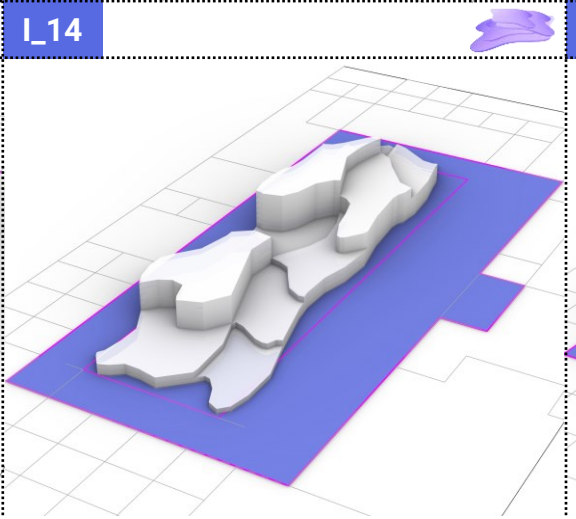

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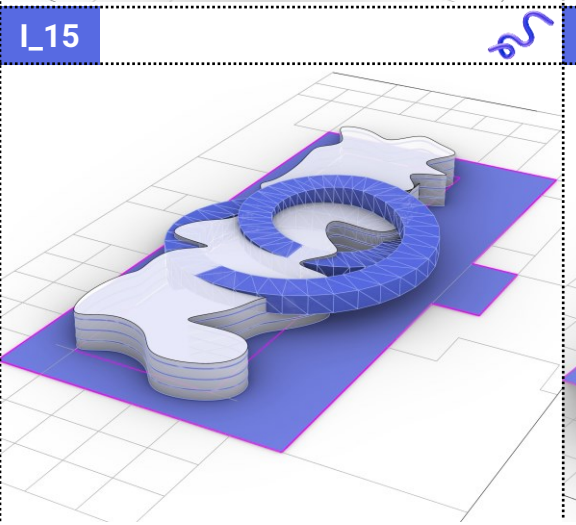

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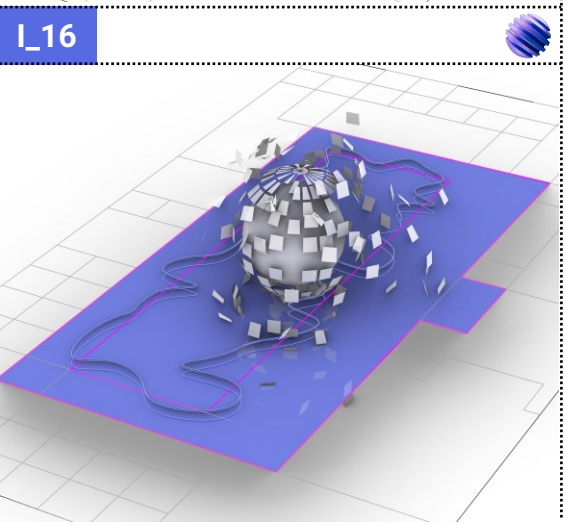


THE METANAEUM FORM

Chosen / Constant Form

Iconic Architectural Identity

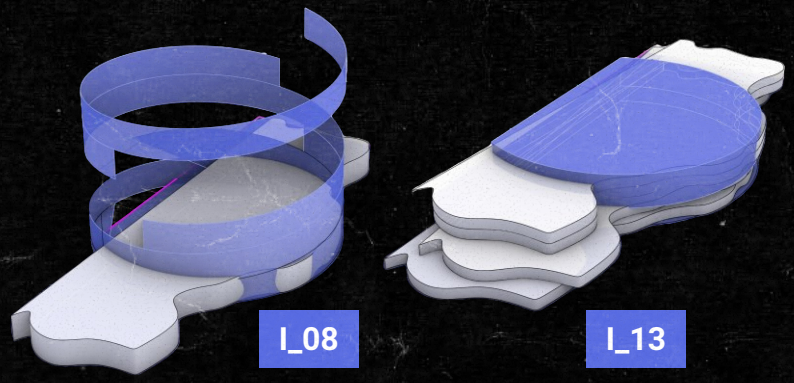
The combination of an organic staggered mass, a prominent helical structure, and floating plates creates an iconic architectural identity for Metanaeum, representing its innovative and futuristic nature in the metaverse.

Seamless Integration with the Metaverse

The form's dynamic and visually striking elements seamlessly integrate with the metaverse's digital environment, reflecting Metanaeum's purpose of bridging the gap between the physical and virtual realms.

Spatial Hierarchy

The form's composition establishes a clear spatial hierarchy, with the large helical structure serving as a central focal point and the staggered mass and floating plates providing diverse spatial experiences and functional zones, aligning with Metanaeum's concept of exploration and discovery.



I_08

HELICAL FORM

I_13

STAGGERED MASS

Adaptive Functionality

The selected form provides flexibility for adaptation and future growth, with the staggered mass, helical structure, and floating plates offering versatile spaces that can accommodate changing programmatic needs and technological advancements.

Organic Connectivity

The organic staggered mass at the bottom, helical structure, and floating plates establish a sense of organic connectivity, symbolizing the interconnectedness of ideas, collaboration, and creativity within the architectural community.

Symbolic Representation

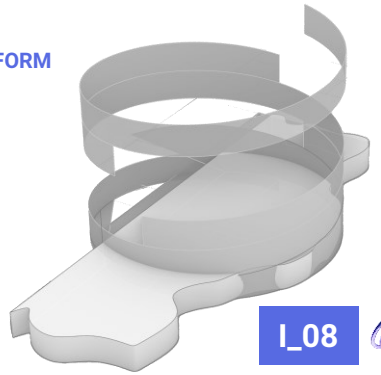
The combination of organic forms, helical structure, and floating plates represents the harmonious integration of art, technology, and architecture, symbolizing Metanaeum's vision of a dynamic, transformative, and boundary-pushing platform in the metaverse.

THE METANAEUM FORM

Morph 5.0 Final / Constant Form

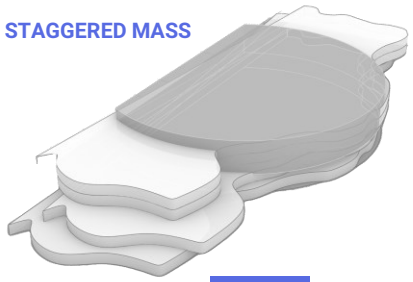
M 5.0 *Form Morph*

HELICAL FORM



I_08

STAGGERED MASS



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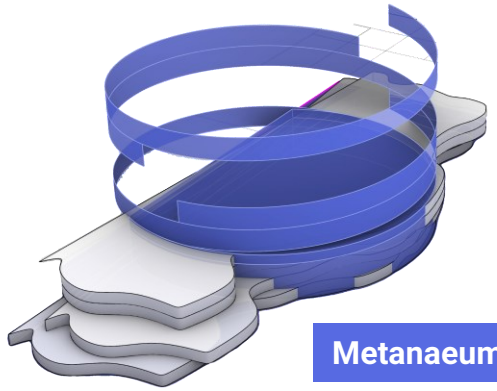


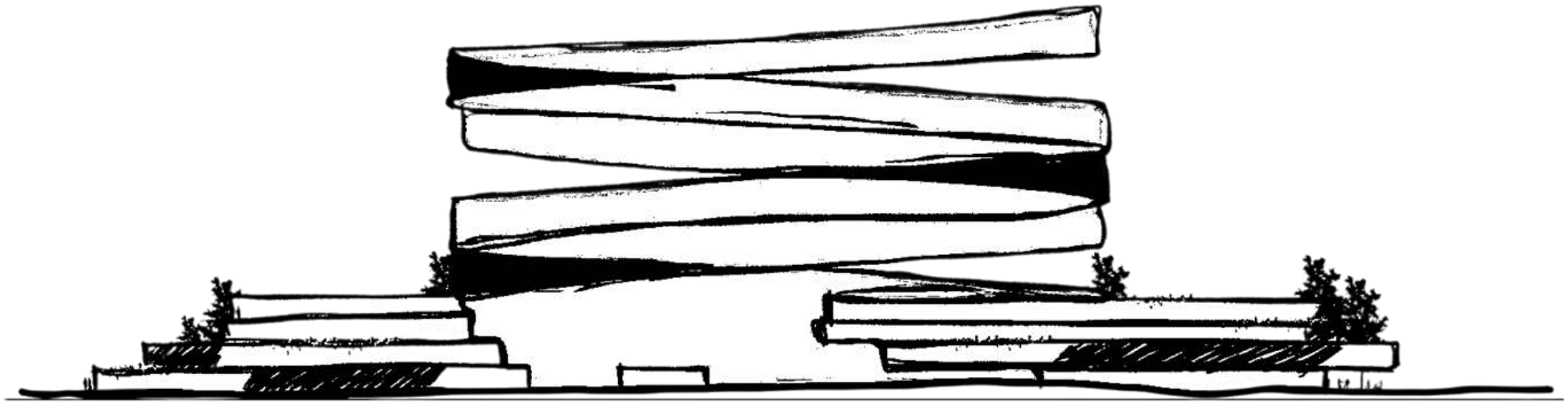
Metanaeum Constant

Creating a Sense of Place

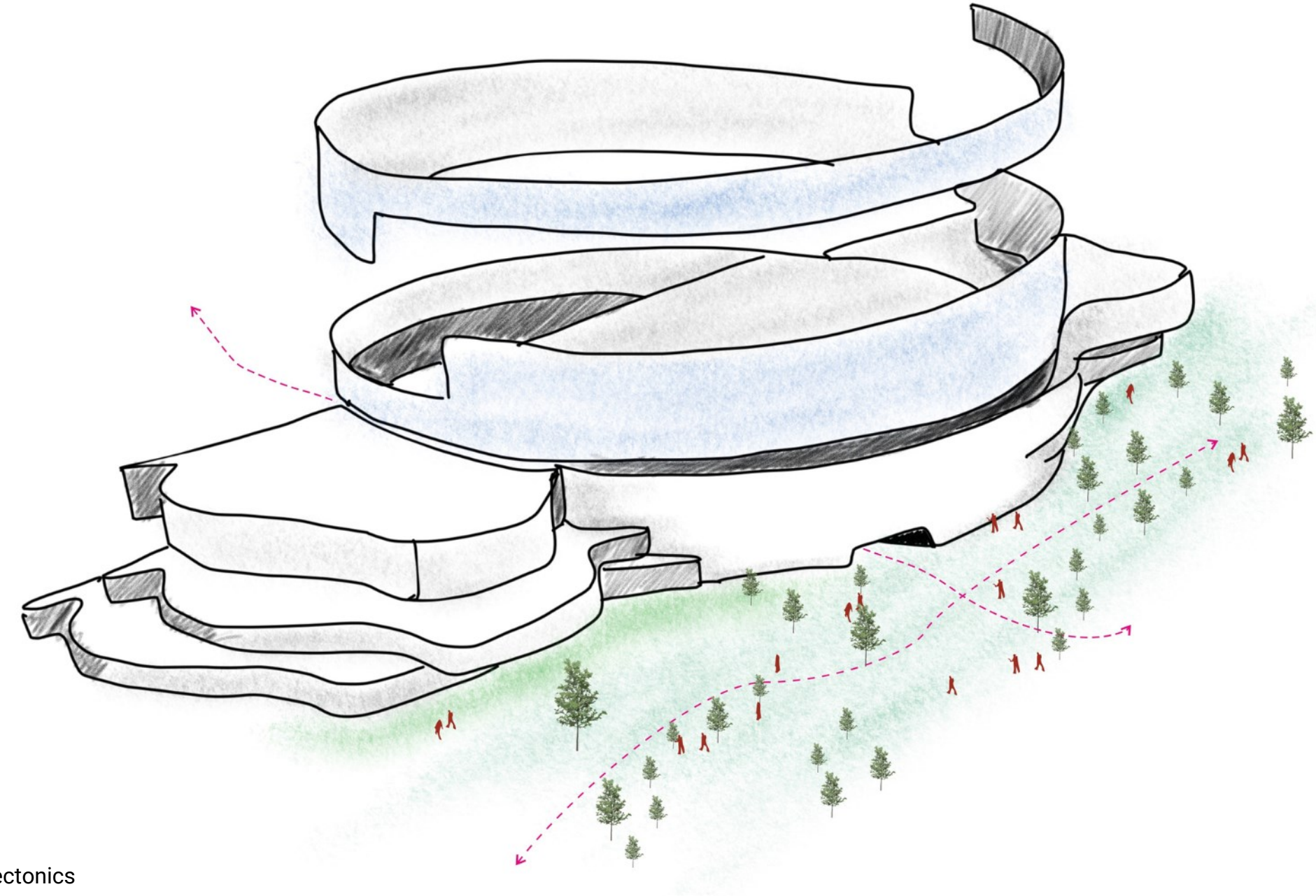
THE METANAEUM FORM

Morph 5.1 Visualization / Constant Form

M 5.1 *Visualization of Form Morph*



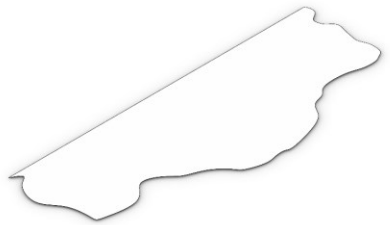
Creating a Sense of Place



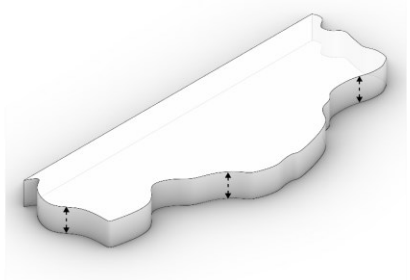
THE METANAEUM FORM

Morph 5.2 Final Form Evolution / Constant Form

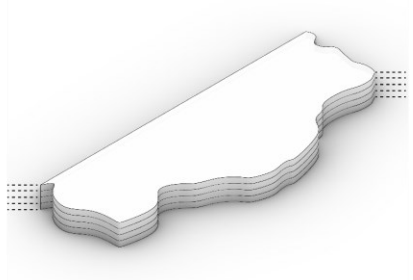
M 5.2 *Form Evolution Morph*



01 **Shape Study:** Initial shape derived from form studies.

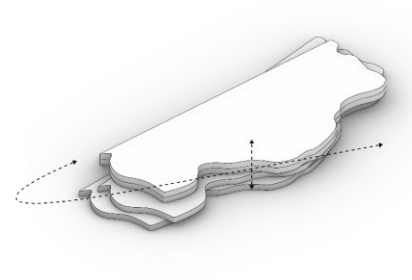


02 **Volume Addition:** Shape is given volume to create a mass.

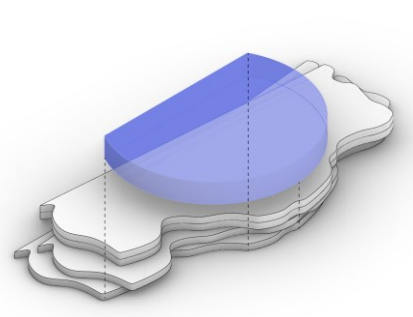


03 **Floor Plate Addition:** To define spaces

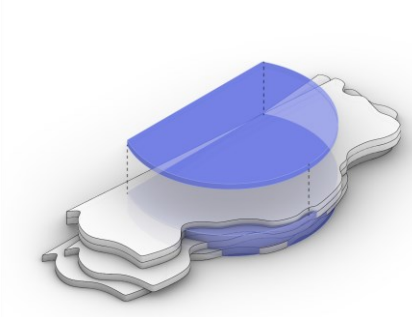
04 **Floor plate Shift:** To create clear programmatic definition



05 **Formed Spaces:** Allows for 360- views and vertical circulation

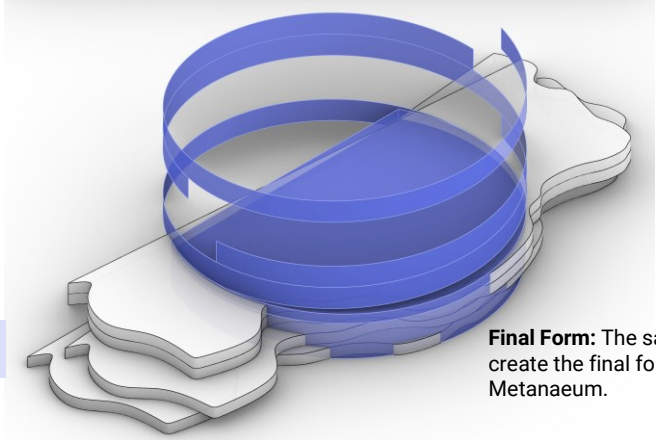


06 **Circular Volume:** A second derived shape is juxtaposed



07 **Top Plate Addition:** A plate is added on top of the new volume to provide additional space.

08 **Helix Addition:** To provide a holding place for the variable Metanaeum and create a distinctive feature.



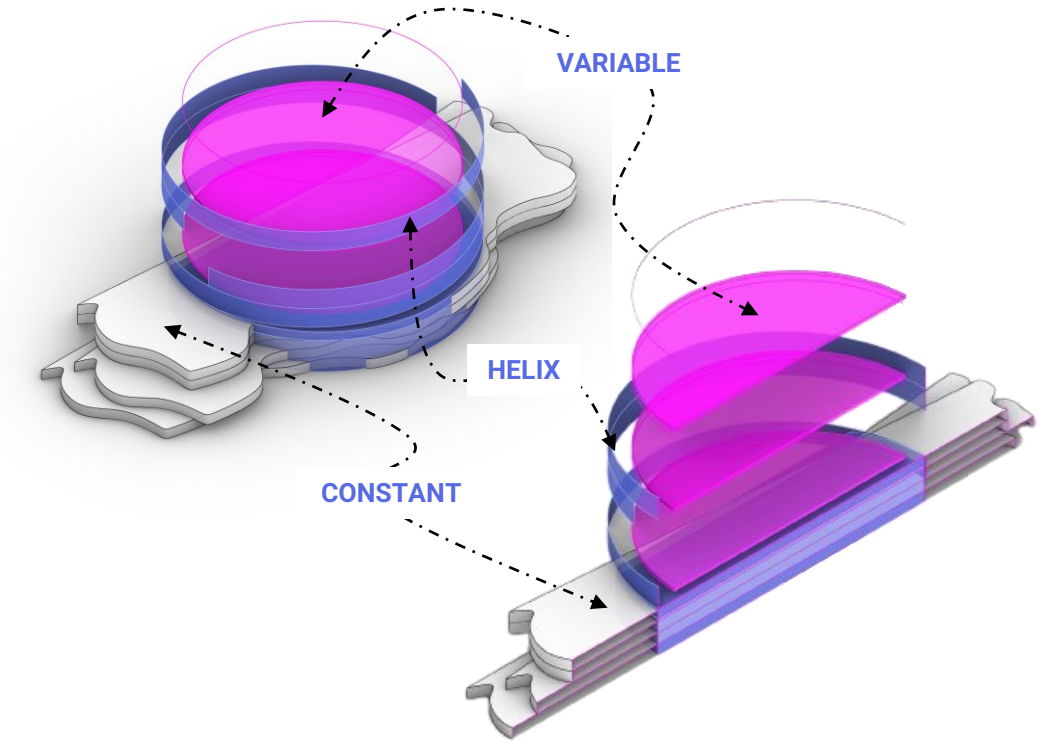
09 **Final Form:** The same is refined to create the final form for the Metanaeum.

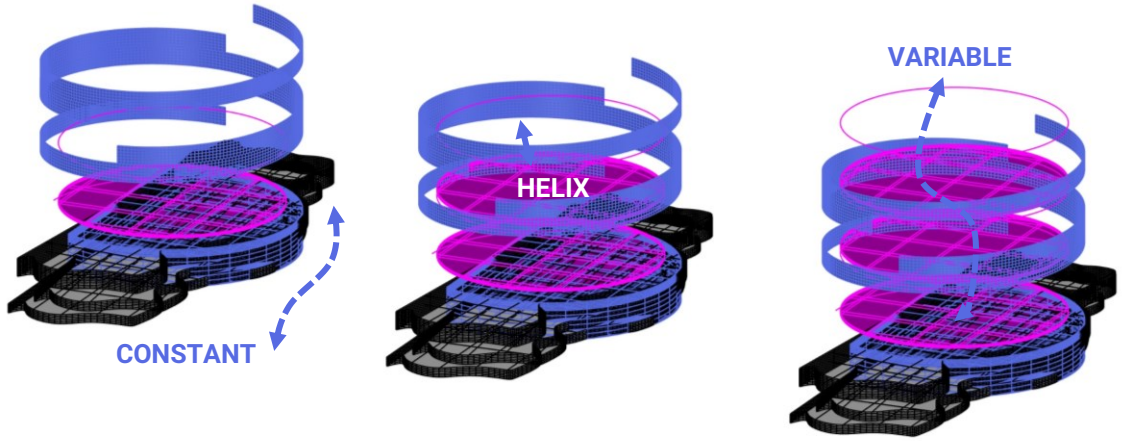
Creating a Sense of Place

THE METANAEUM FORM

Morph 6.0 Culmination / Constant + Variable Form

M 6.0 ***Constant + Variable Morph***





The Helix-shaped Structure of the constant form *encases* and defines the Ever-changing Variable, which *hovers* elegantly above it.

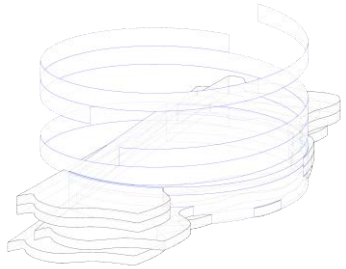
A representation of the symbiotic relationship between stability and flexibility, the variable's free form is embraced by the constant's structural definition, providing a visual display of the dynamic interplay between form and function.

Unifying Constant and Variable: The Culmination of Form

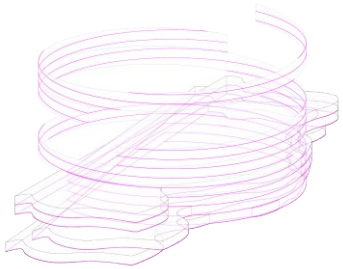
THE METANAEUM FORM

Morph 7.0 Arch / Constant Form

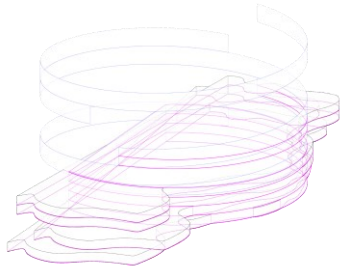
M 7.0 *Architectural Morph*



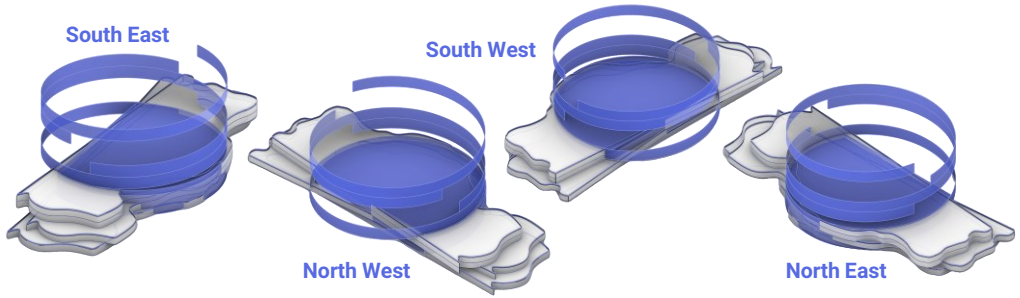
01 **Form:** Outlines



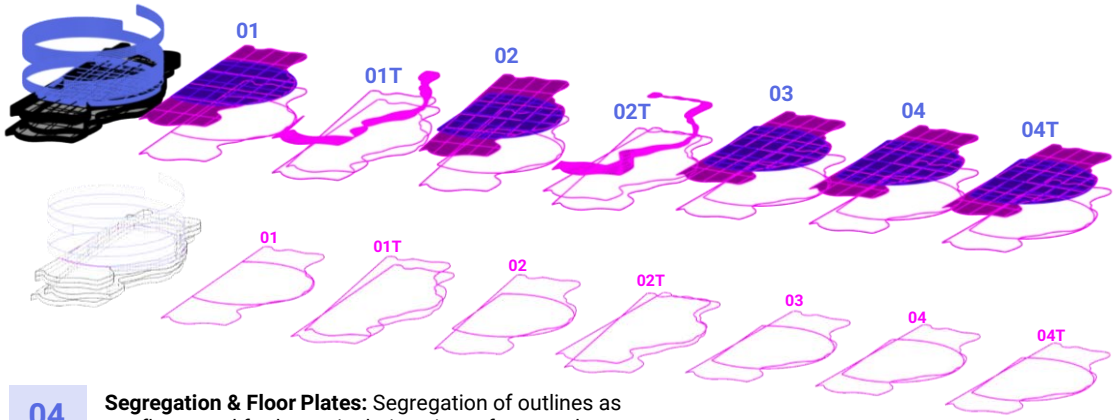
02 **Cuts:** As per heights



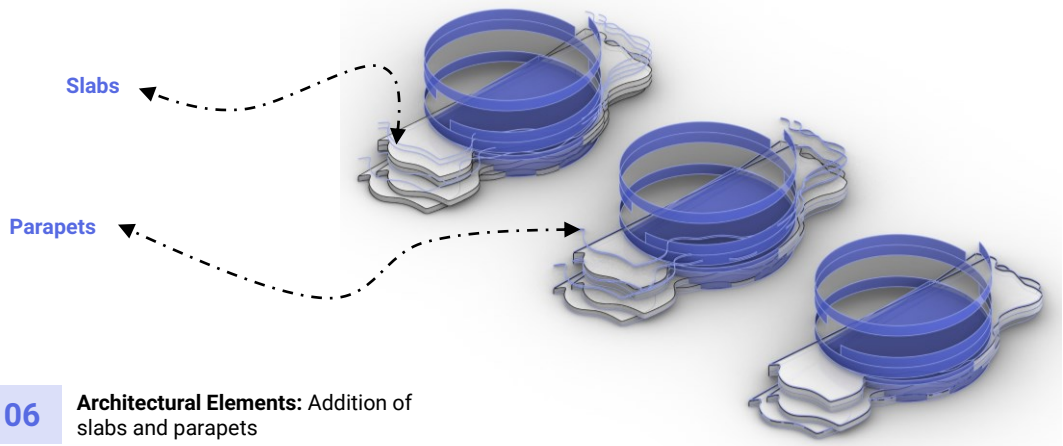
03 **Floor Outlines:** For further articulation



05 **Preliminary Views:** To understand form and volume

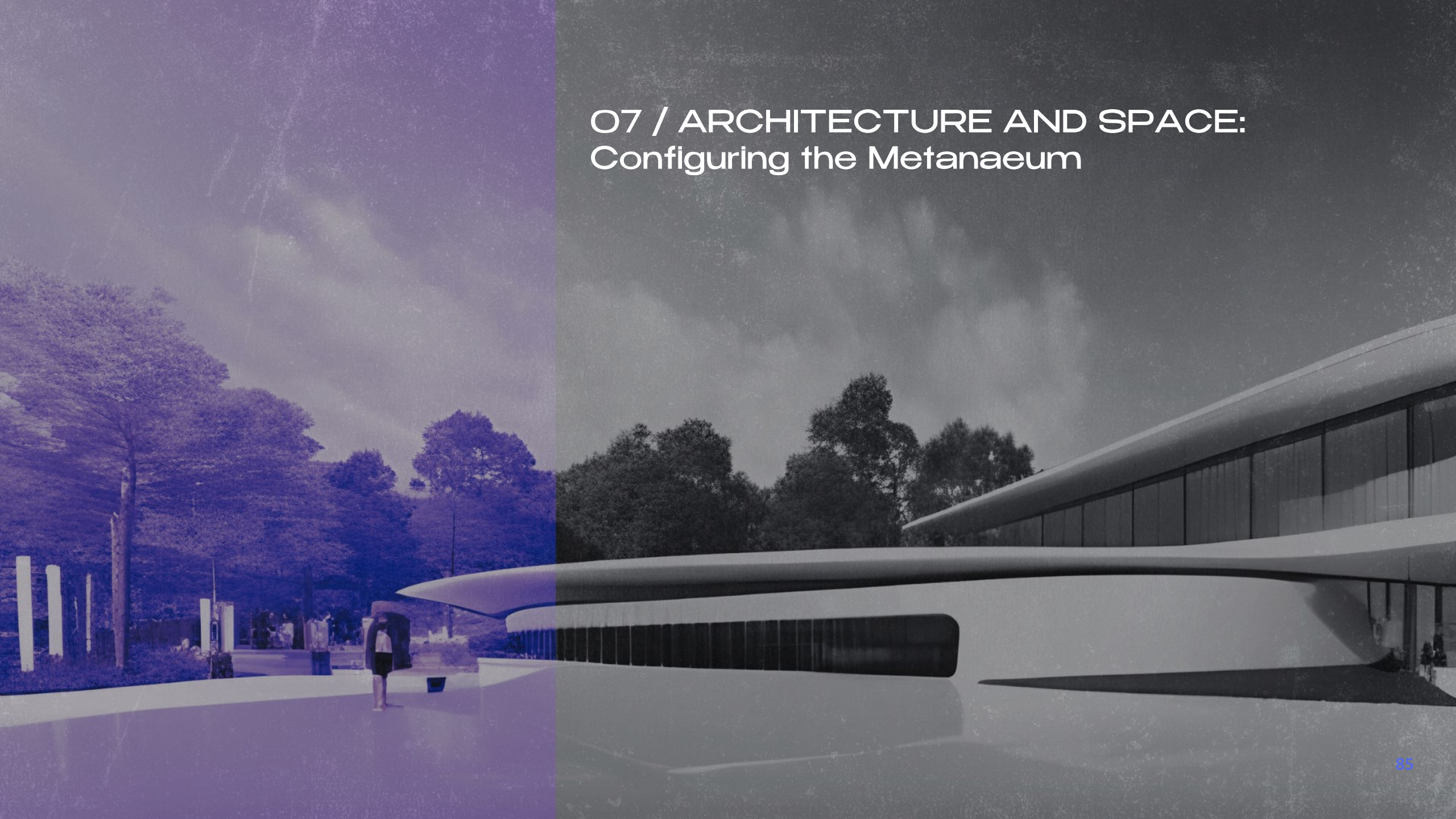


04 **Segregation & Floor Plates:** Segregation of outlines as per floors and further articulation via surfaces and grids.

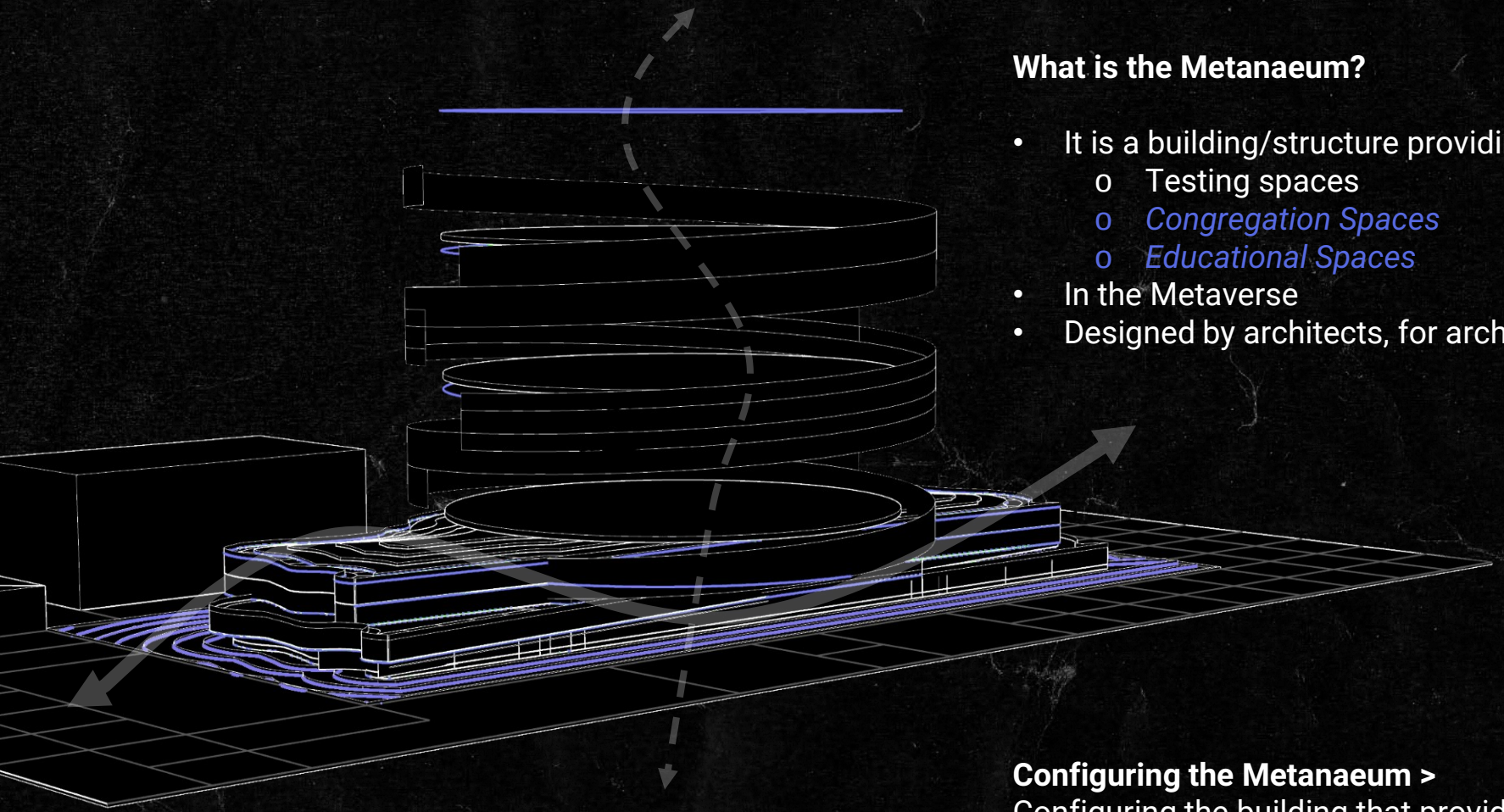


06 **Architectural Elements:** Addition of slabs and parapets

Articulating the Metanaeum



07 / ARCHITECTURE AND SPACE:
Configuring the Metanaeum



What is the Metanaeum?

- It is a building/structure providing
  - Testing spaces
  - *Congregation Spaces*
  - *Educational Spaces*
- In the Metaverse
- Designed by architects, for architects

Configuring the Metanaeum >
Configuring the building that provides various spaces >
Configuring the testing spaces and how architects will interact with them >
Creating the space, place and experience to facilitate the explorations

THE METANAEUM

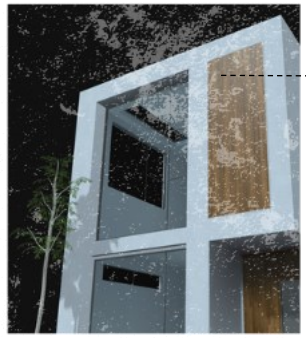
Material Board

STEEL

- Framing and reinforcing the concrete structure, creating permeable / impermeable spaces for the Metanaeum.
- *Represents the strength and resilience of the decentralized ecosystem.*

GLASS

- Allows for natural light to penetrate in, in+out, open atmosphere
- *Reflects the transparency of the decentralized blockchain technology.*



WOOD

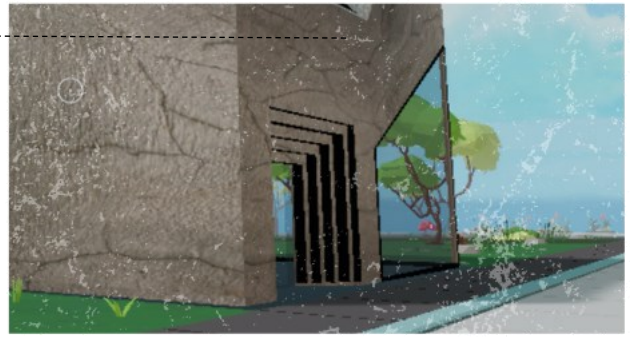
- Interior finishes creating a warm and inviting atmosphere.
- *Represents the organic growth of the metaverse, in+out, and the importance of sustainability in building the future.*

LIGHTING

- A dynamic lighting system that enhances the visual appeal of the Metanaeum and provides an immersive user experience.
- *Represents the innovative spirit of the Metanaeum and the potential for new forms of creative expression.*

CONCRETE

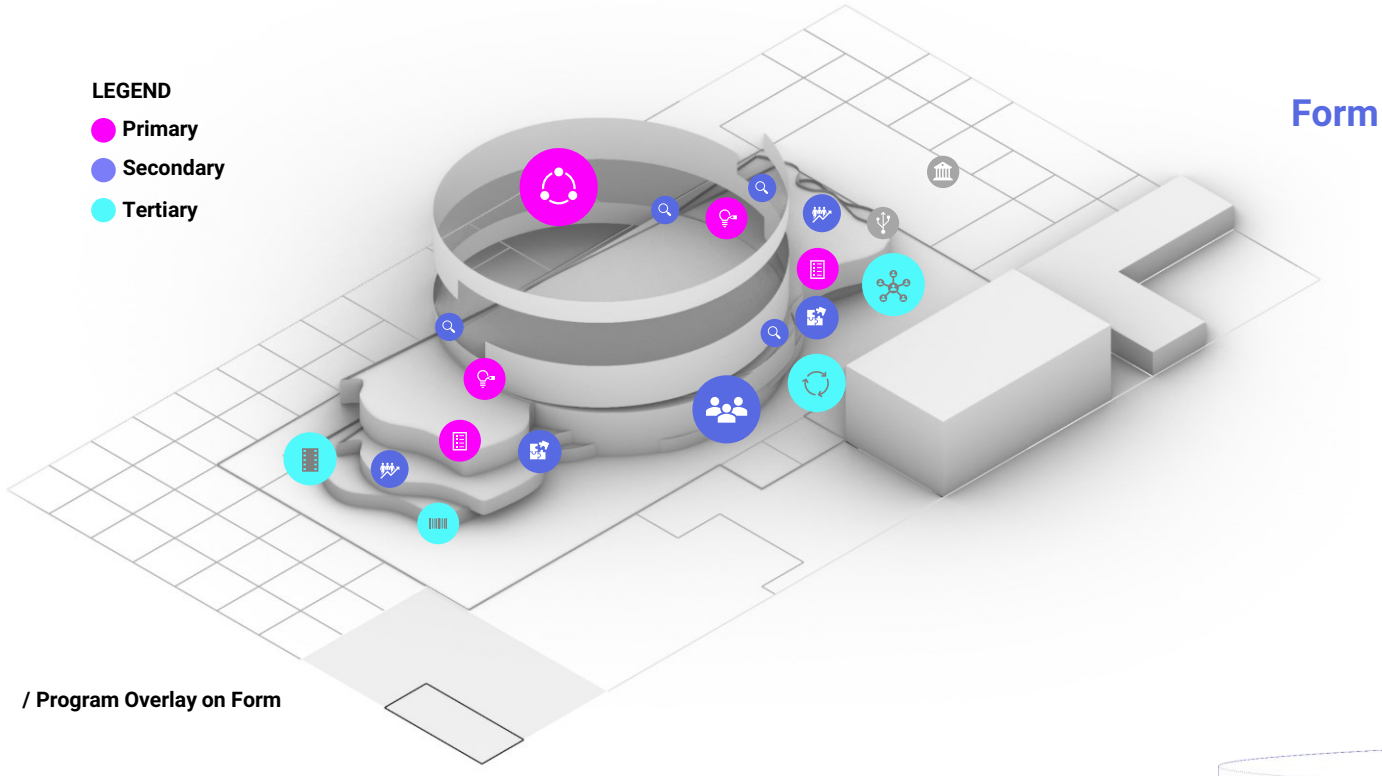
- A foundation and structural support for various components, including the user-generated content and centralized congregation.
- *Represents the solidity of the metaverse and the immutability of the blockchain.*



Using materials that are familiar to people in the real world can help make the transition to the metaverse feel less intimidating and more welcoming. The materials selected are the ones that fit the design concept and intended function of the building to enhance the overall user experience and contribute to a stronger sense of immersion.

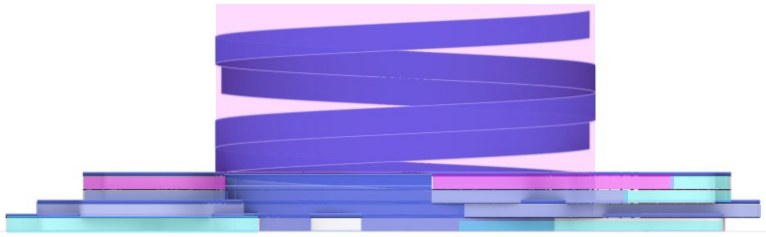
THE METANAEUM

Form meets Function / Intersection of Program and Form

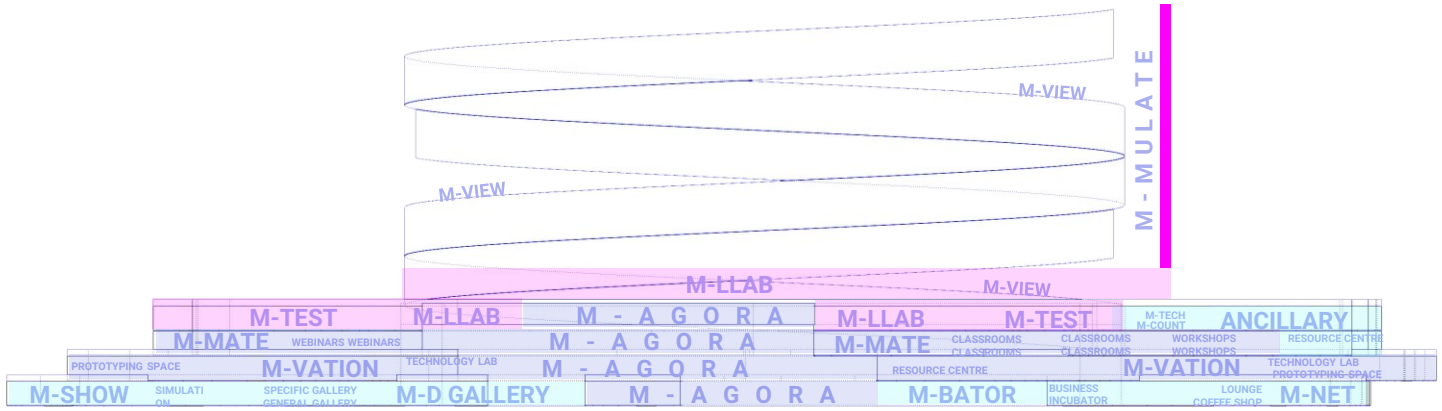


/ Program Overlay on Form

Overlaying program on the final form:
To understand the interplay between space and function. By visualizing the program overlaid on the form, spaces can be allocated efficiently, and a logical flow designed throughout the Metanaeum.



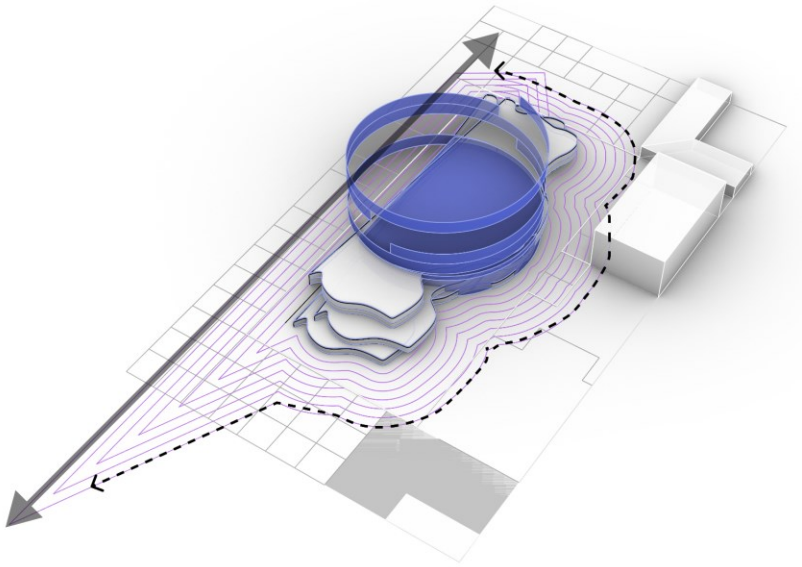
/ Primary Secondary Tertiary Overlay on Form



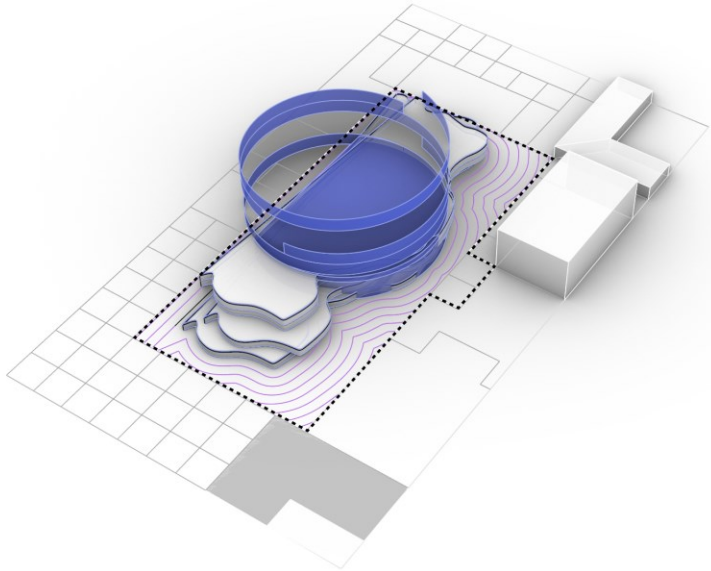
/ Function Overlay on Form

THE METANAEUM

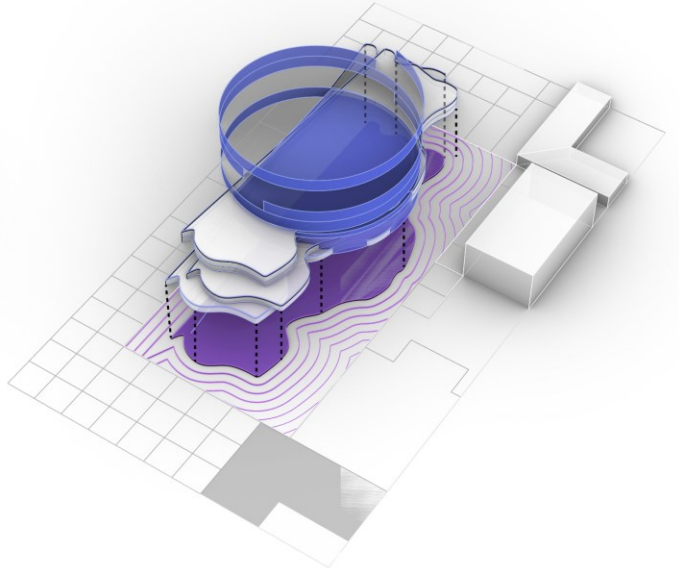
Generating Lines / Contiguous with Form



01 **Art of Emergence:**
Lines becoming
Land



02 **Refining the Natural:**
Crafting the Emergent Lines



03 **Sculpting Nature:**
Defining the Land and “**Planting**” the
Architecture

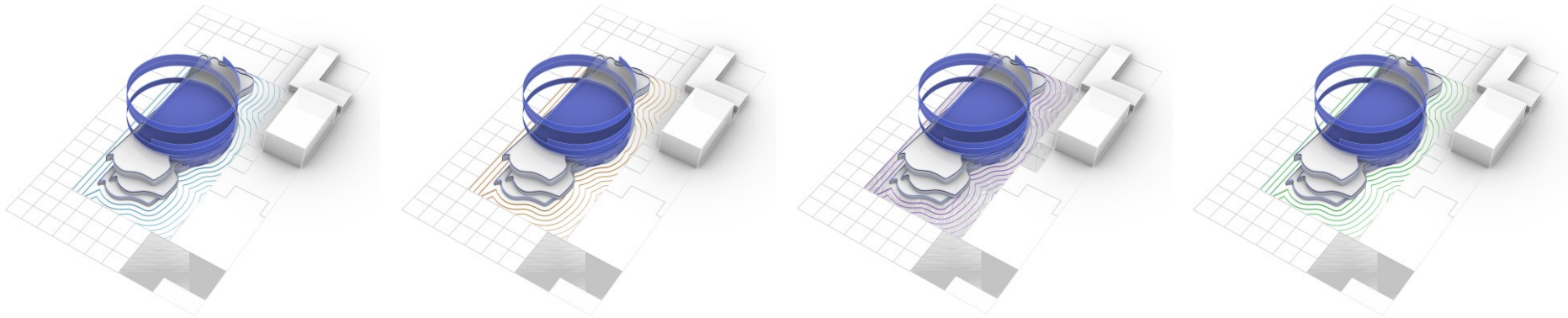
THE METANAEUM

Seasons in the Metanaeum / Transformative Landscape for an Immersive Experience

The Metanaeum challenges traditional notions of site planning by

- Showcasing temporality and context
- Highlighting the value of flexibility, adaptability, and responsiveness

in the design process.



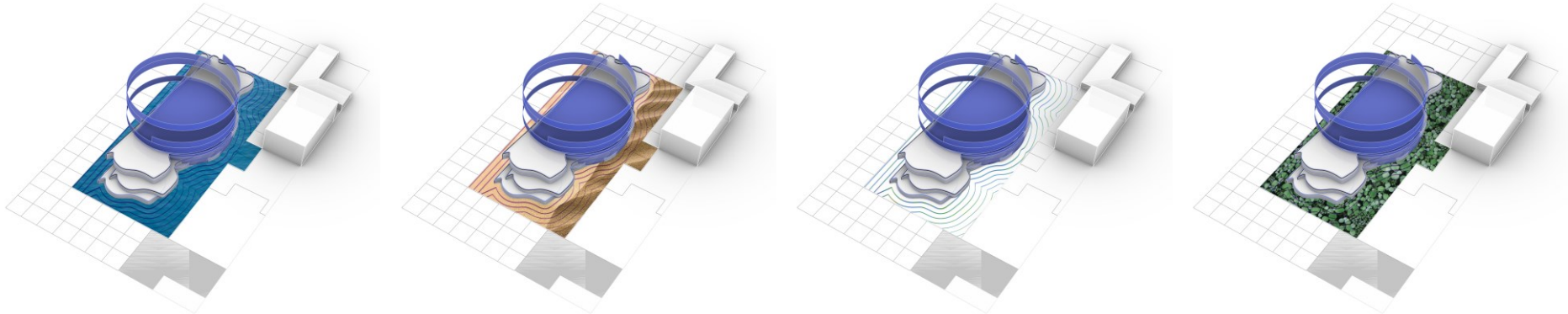
01 **Monsoon:** Water

02 **Summer:** Desert

03 **Winter:** Snow

04 **Spring:** Plants

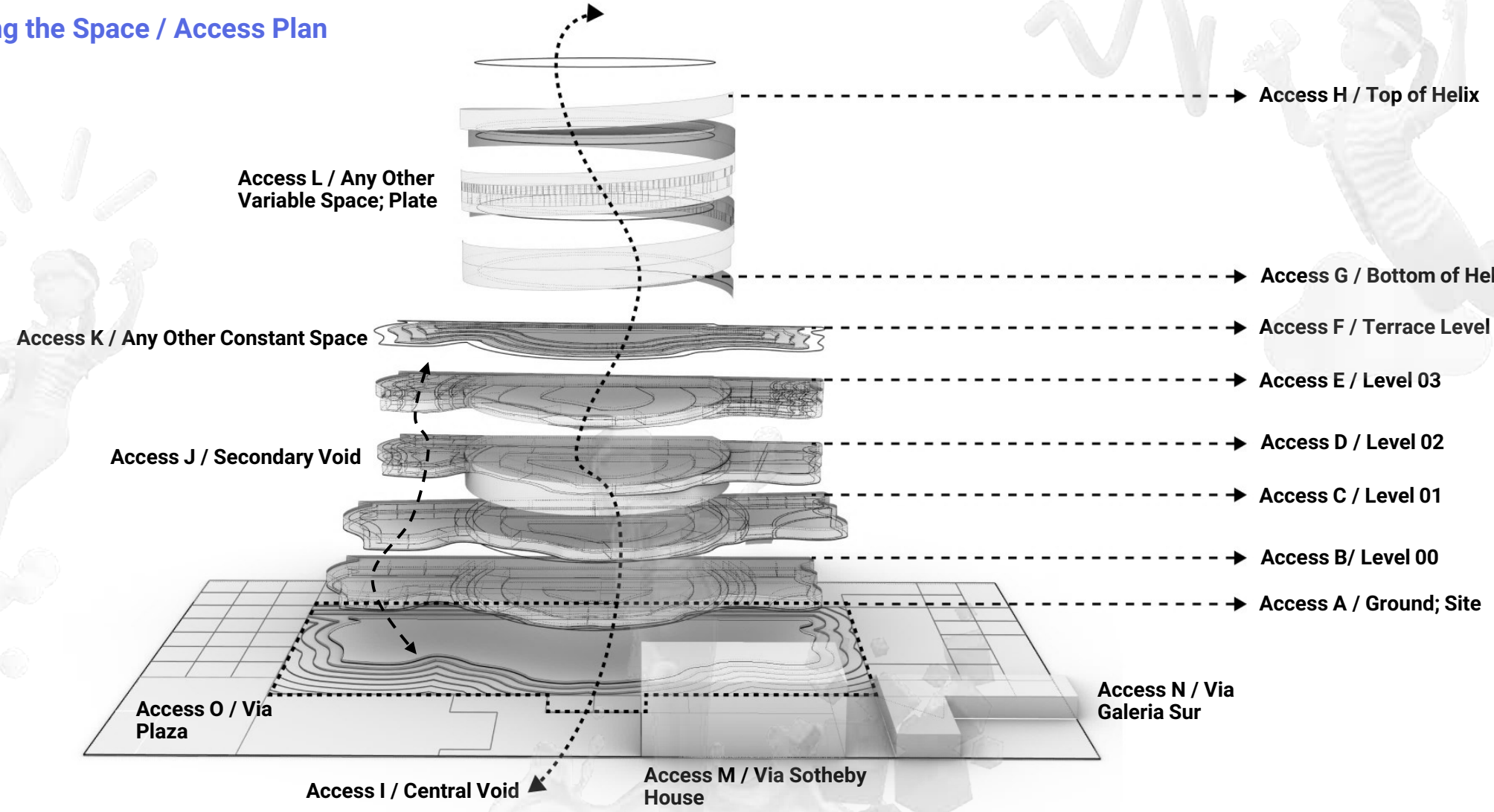
EXPLORATION
DISCOVERY
PLAY

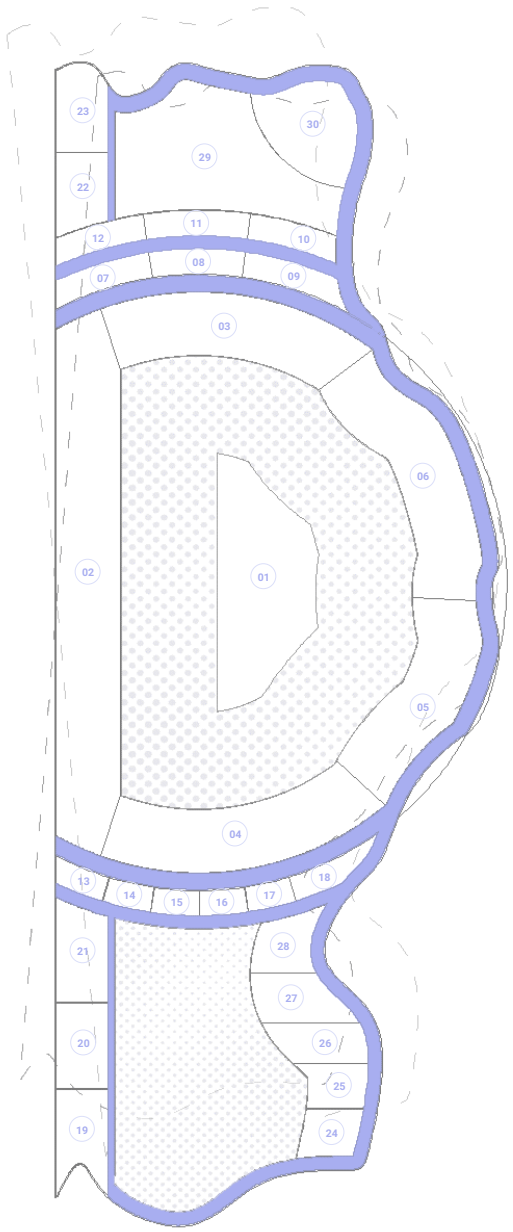


The transformation of the site as an expression of the season creates a sense of wonder, inspiring curiosity, creativity, and imagination in users of all ages and backgrounds. The Metanaeum fosters a deeper appreciation for the cyclical nature of life and the interconnectedness of all things.

THE METANAEUM

Navigating the Space / Access Plan



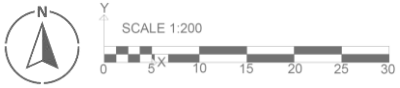


KEY FOR PLAN

01, 02	M-Agora	M_06.1
03, 04	M-Test	M_01.1
05, 06	M-View	M_07.1
07-12	M-D Gallery	M_08.2
13-18	M-D Gallery	M_08.1
19-23	M-Show	M_09.1
24-28	M-Bator	M_10.1
29	M-Net	M_11.1
30	M-Net	M_11.2

LEGEND

- Primary
- Secondary
- Tertiary
- Cutout
- Floor Plate Above
- Floor Plate Below
- Circulation



SITE AREA: 5 ACRES
BUILT-UP AREA: 65,280 SQ M
G+4 / TOTAL HEIGHT: 14 + 32.5 M

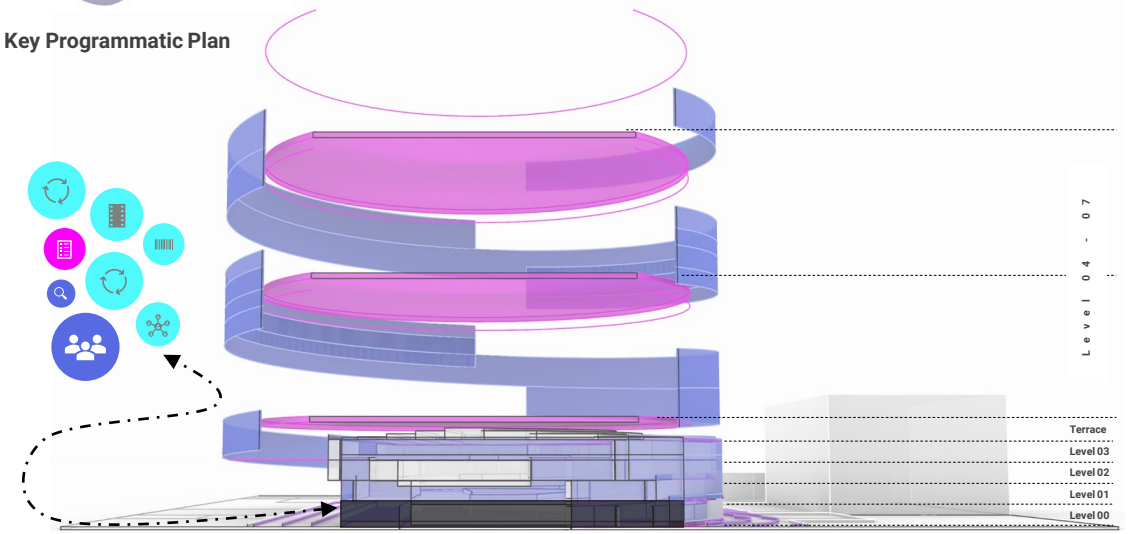
GROUND FLOOR AREA = 9550 SQ M

THE METANAEUM

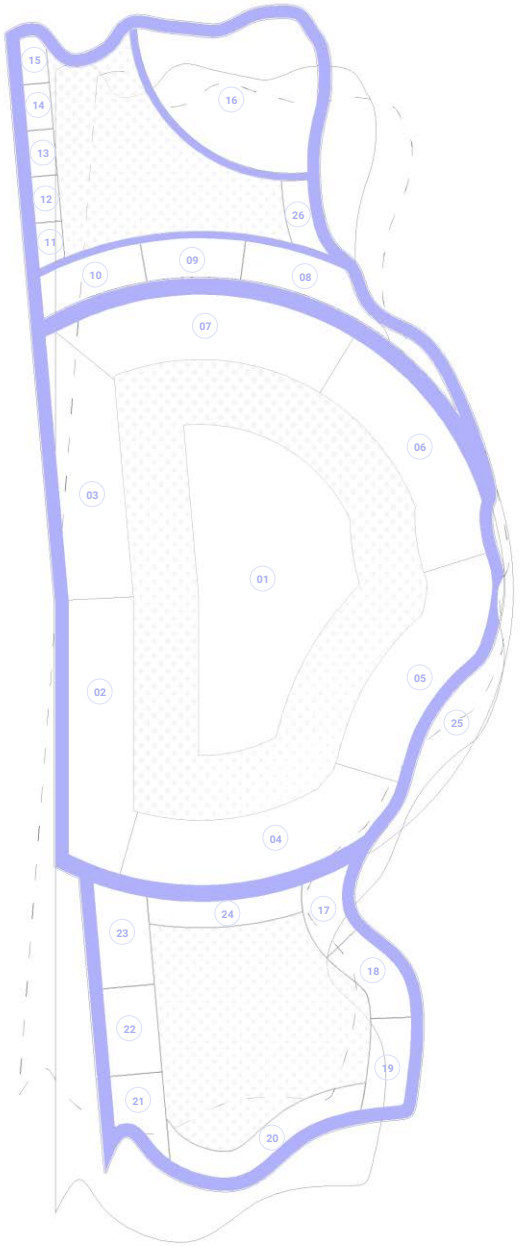
Spaces that Inspire / Floor Plan – Level 00

- M-Mulate
- M-Agora
- M-D Gallery
- M-Llab
- M-View
- M-Show
- M-Test
- M-Mate
- M-Bator
- M-Vation
- M-Net

Key Programmatic Plan



Key Programmatic Section

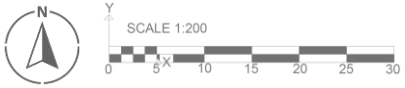


KEY FOR PLAN

01-03	M-Agora	M_06.1
04, 07	M-Test	M_01.1
05, 06	M-View	M_07.1
08-10	M-Vation	M_05.1
11-15	M-Vation	M_05.2
16, 26	M-Bator	M_10.1+2
17-20	M-Vation	M_05.2
21-24	M-Mate	M-04.3
25	M-View	M_07.1

LEGEND

- Primary
- Secondary
- Tertiary
- Cutout
- Floor Plate Above
- Floor Plate Below
- Circulation



SITE AREA: 5 ACRES
BUILT-UP AREA: 65,280 SQ M
G+3 / TOTAL HEIGHT: 14 + 32.5 M

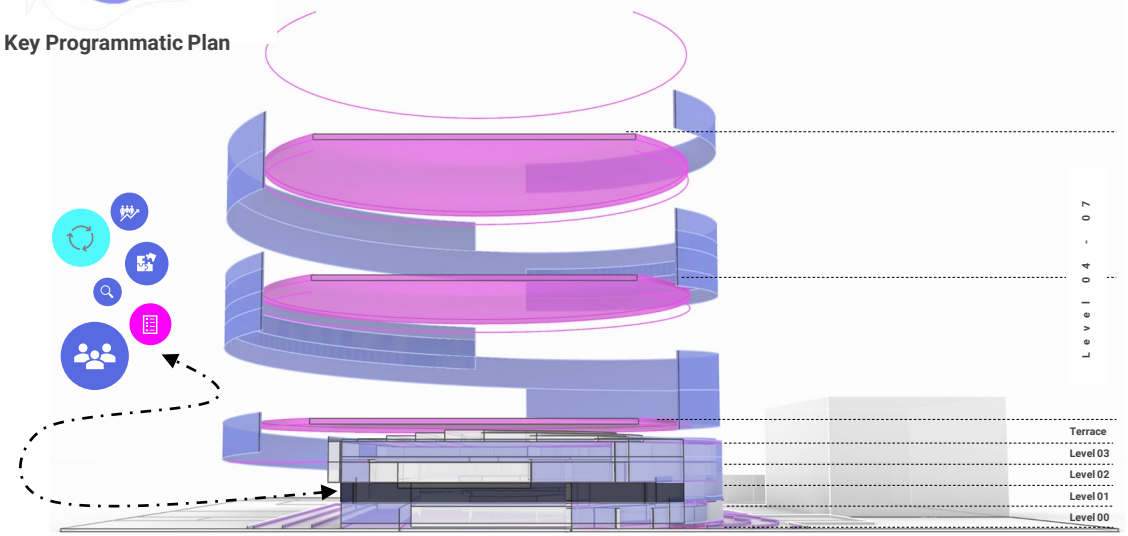
FIRST FLOOR AREA = 9550 SQ M

Key Programmatic Plan

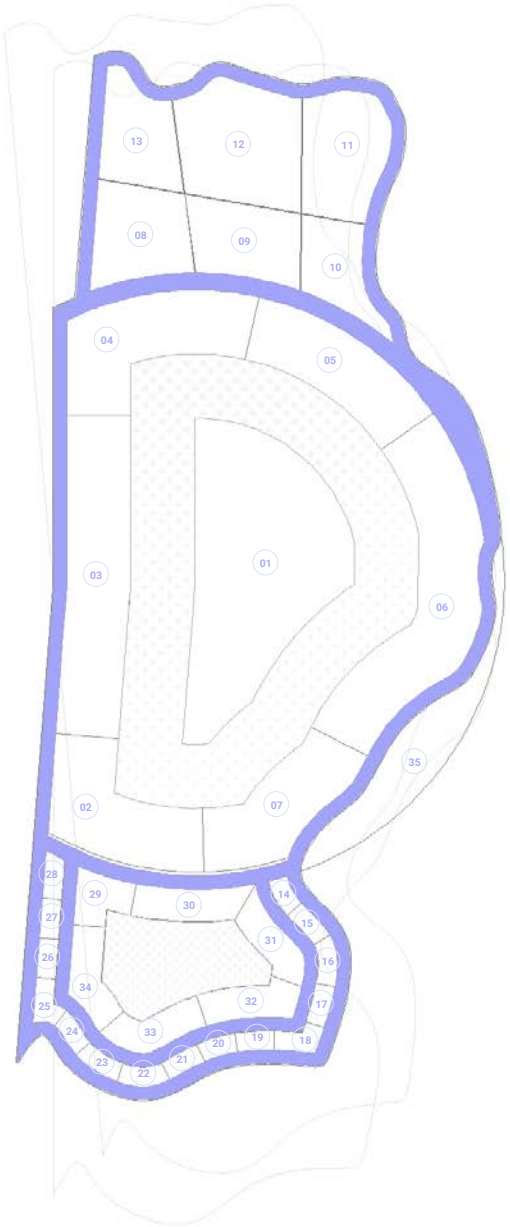
THE METANAEUM

Spaces that Inspire / Floor Plan – Level 01

- M-Mulate
- M-Agora
- M-D Gallery
- M-Llab
- M-View
- M-Show
- M-Test
- M-Mate
- M-Bator
- M-Vation
- M-Net



Key Programmatic Section

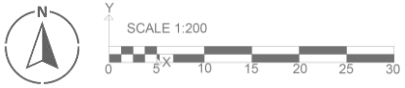


KEY FOR PLAN

01, 03	M-Agora	M_06.1
02, 04	M-View	M_07.1
03, 05-07	M-Test	M_01.2
08-13	M-Mate	M_04.2
14-28	M-Mate	M_04.1
10	M-Bator	M_10.2
29-34	M-Mate	M_04.2
35	M-View	M_07.1

LEGEND

- Primary
- Secondary
- Tertiary
- Cutout
- Floor Plate Above
- Floor Plate Below
- Circulation



SITE AREA: 5 ACRES
BUILT-UP AREA: 65,280 SQ M
G+4 / TOTAL HEIGHT: 14 + 32.5 M

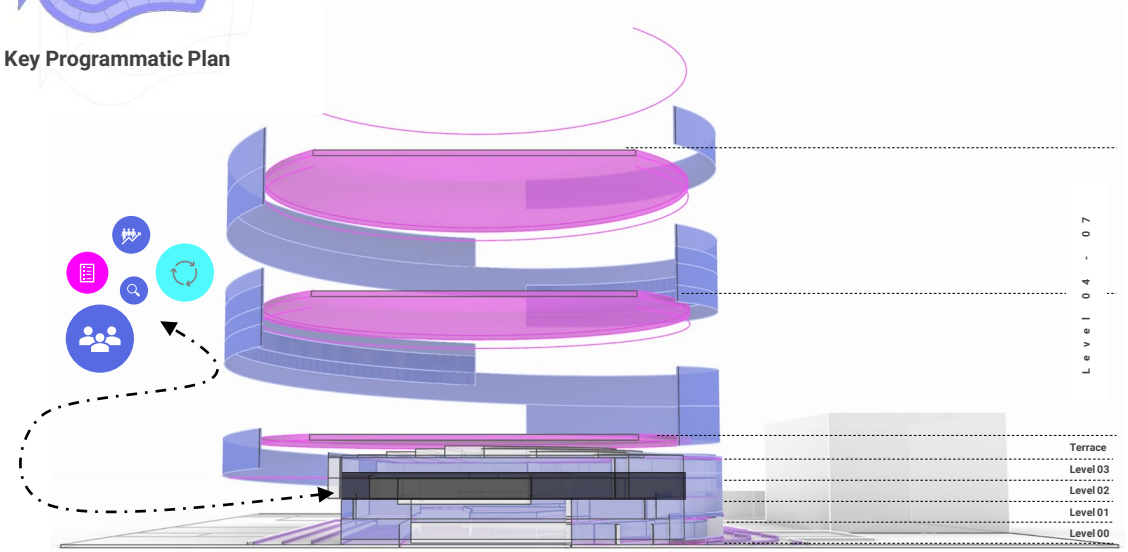
SECOND FLOOR AREA = 8540.8 SQ M

Key Programmatic Plan

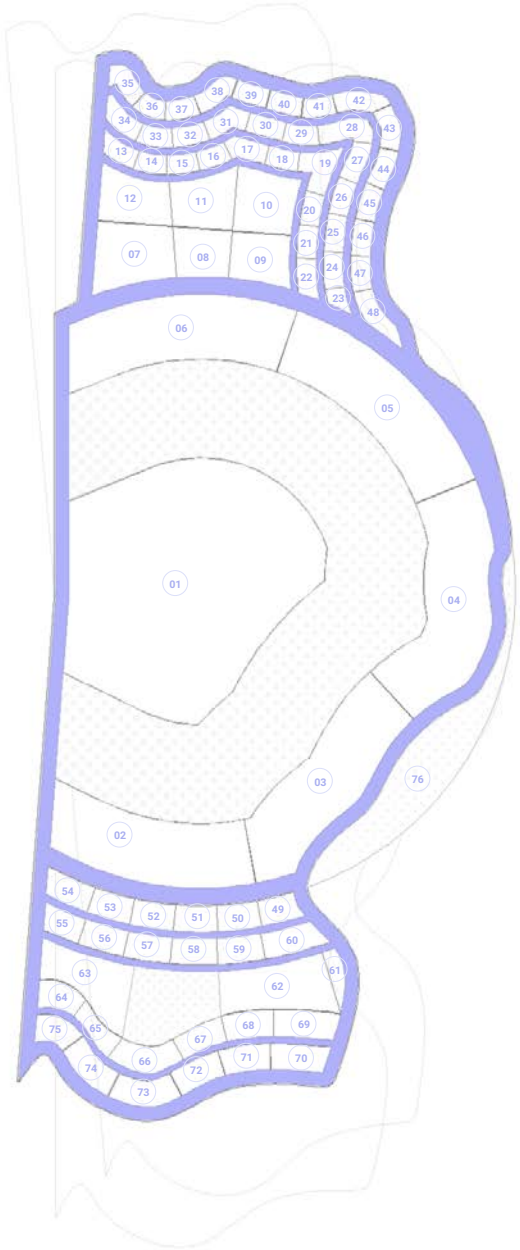
THE METANAEUM

Spaces that Inspire / Floor Plan – Level 02

- M-Mulate
- M-Agora
- M-D Gallery
- M-Llab
- M-View
- M-Show
- M-Mate
- M-Bator
- M-Test
- M-Vation
- M-Net



Key Programmatic Section

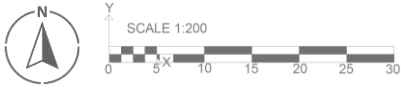


KEY FOR PLAN

01	M-Agora	M_06.1
02-07	M-Llab	M_02.1
07-12	M-Mulate	M_03
13-41	M-Test	M_01.1
42	M-Tech	M_12
43	M-Count	M-13
44-48	M-Test	M_01.1
49-60	M-Test	M_01.2
61	M-Bator	M_10.2
62	M-Vation	M_05.1
63-75	M-Test	M_01.2
76	M-View	M_07.1

LEGEND

- Primary
- Secondary
- Tertiary
- Cutout
- Floor Plate Above
- Floor Plate Below
- Circulation



SITE AREA: 5 ACRES
BUILT-UP AREA: 65,280 SQ M
G+4 / TOTAL HEIGHT: 14 + 32.5 M

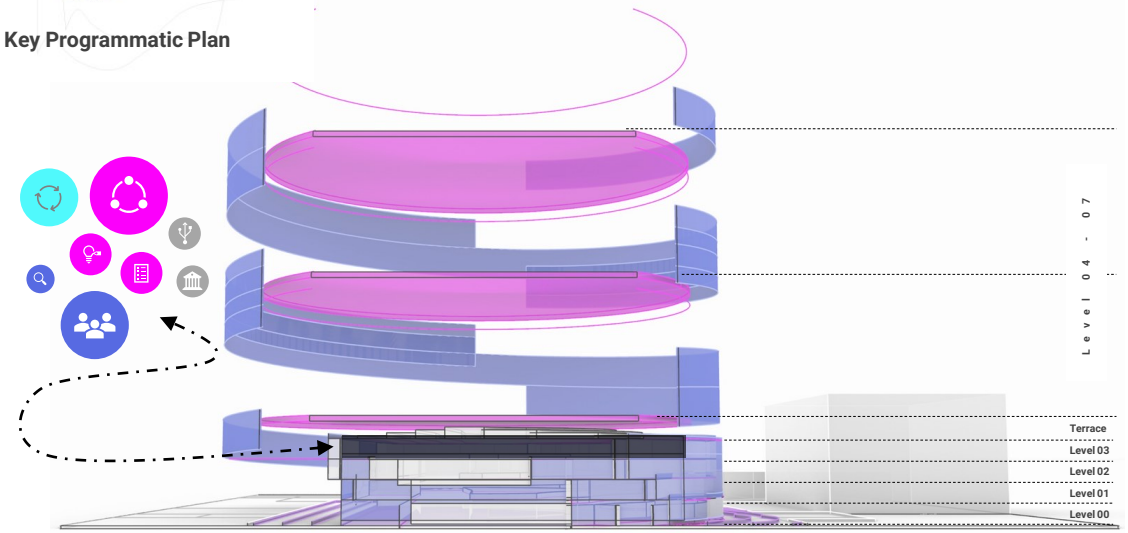
THIRD FLOOR AREA = 8540.8 SQ M

Key Programmatic Plan

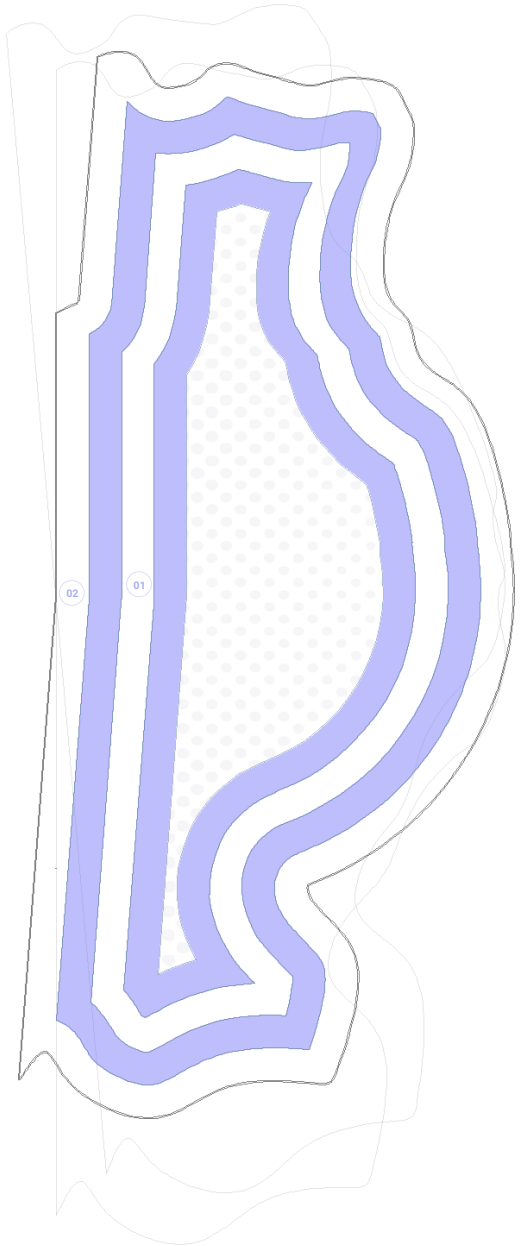
THE METANAEUM

Spaces that Inspire / Floor Plan – Level 03

- M-Mulate
- M-Agora
- M-D Gallery
- M-Llab
- M-View
- M-Show
- M-Test
- M-Mate
- M-Bator
- M-Vation
- M-Net



Key Programmatic Section

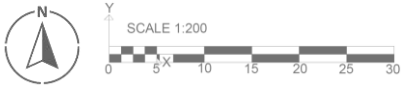


KEY FOR PLAN

01	M-Test	M_02.1
02	M-View	M_07.1

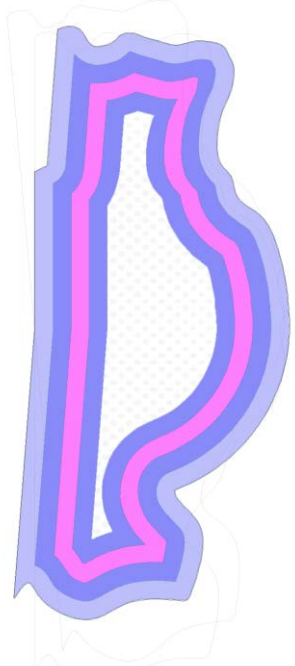
LEGEND

- Primary
- Secondary
- Tertiary
- Cutout
- Floor Plate Above
- Floor Plate Below
- Circulation



SITE AREA: 5 ACRES
BUILT-UP AREA: 65,280 SQ M
G+4 / TOTAL HEIGHT: 14 + 32.5 M

TERRACE FLOOR AREA = 8540.8 SQ M

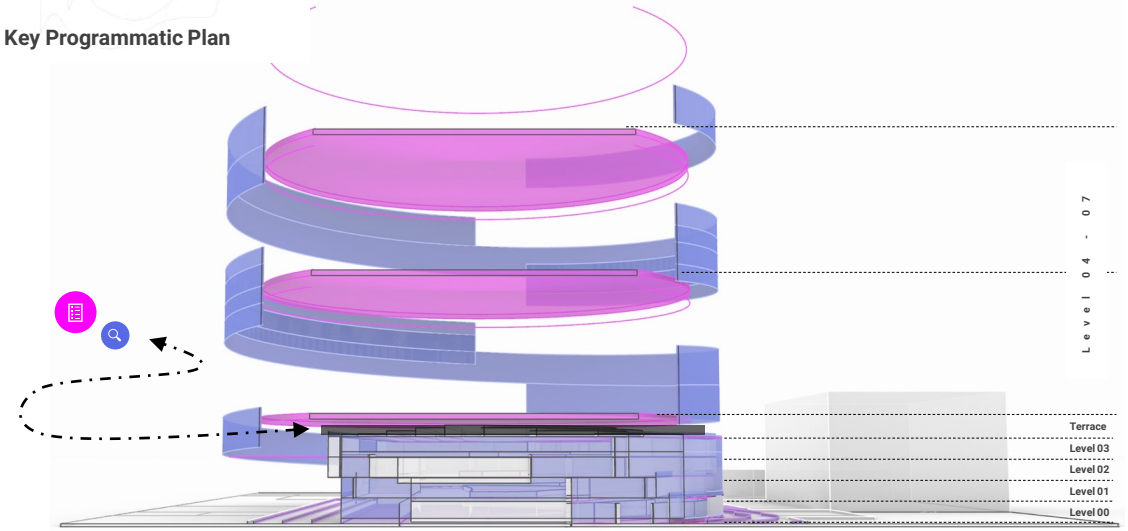


Key Programmatic Plan

THE METANAEUM

Spaces that Inspire / Floor Plan – Level 04

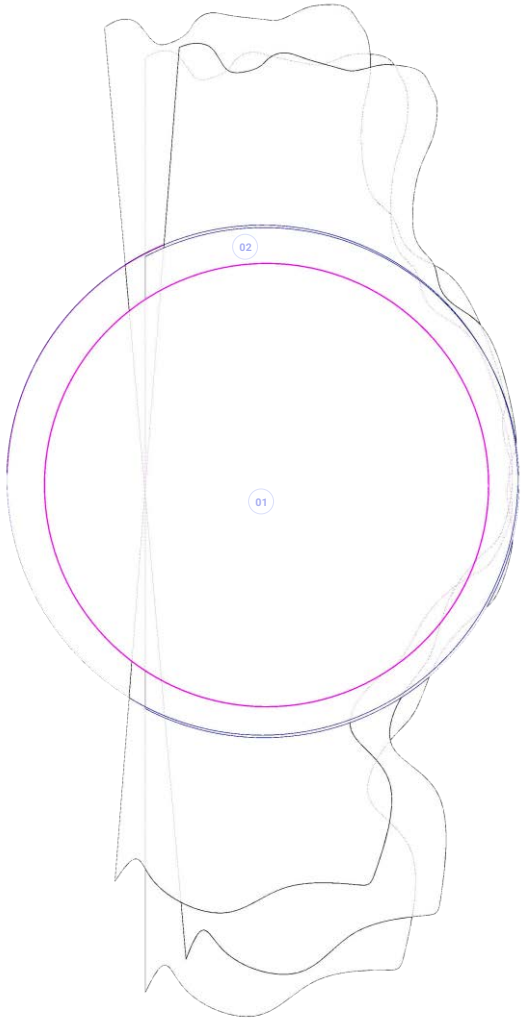
- M-Mulate
- M-Agora
- M-D Gallery
- M-Llab
- M-View
- M-Show
- M-Test
- M-Mate
- M-Bator
- M-Vation
- M-Net



Key Programmatic Section

THE METANAEUM

Spaces that Aspire / Floor Plan – Level 05 /06 / 07



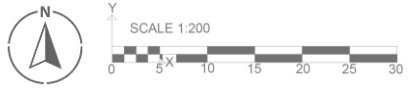
USER GENERATED

KEY FOR PLAN

01	M-Mulate	M_03
02	M-View	M_07.1

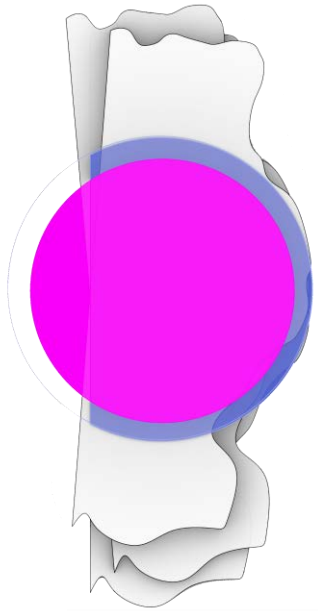
LEGEND

- Primary
- Secondary
- Tertiary
- Cutout
- Floor Plate Above
- Floor Plate Below
- Circulation



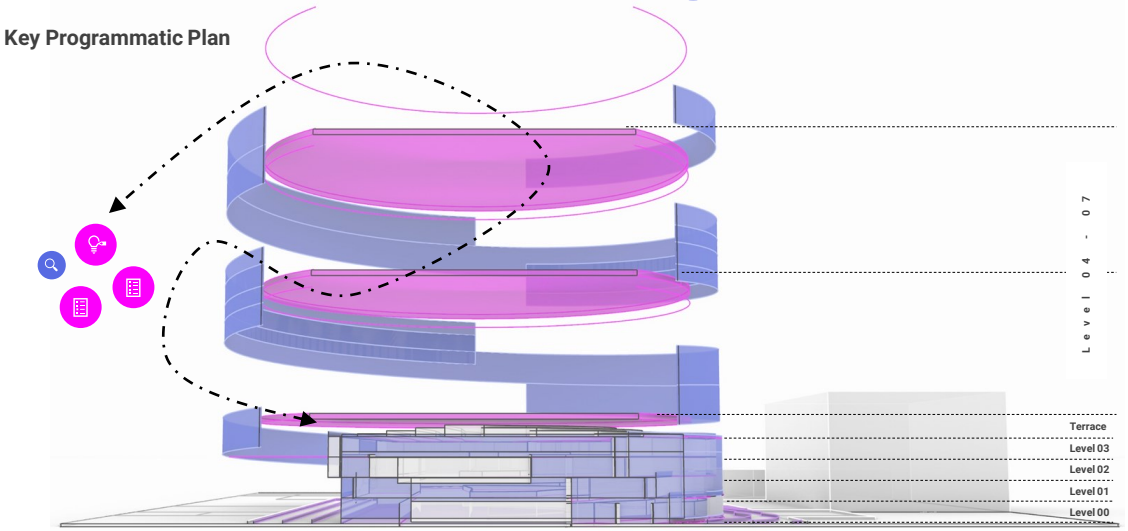
SITE AREA: 5 ACRES
BUILT-UP AREA: 65,280 SQ M
G+4 / TOTAL HEIGHT: 14 + 32.5 M

FLOAT PLATE UNIT AREA = 5470 SQ M
FLOAT PLATE TOTAL AREA = 16410 SQ M



Key Programmatic Plan

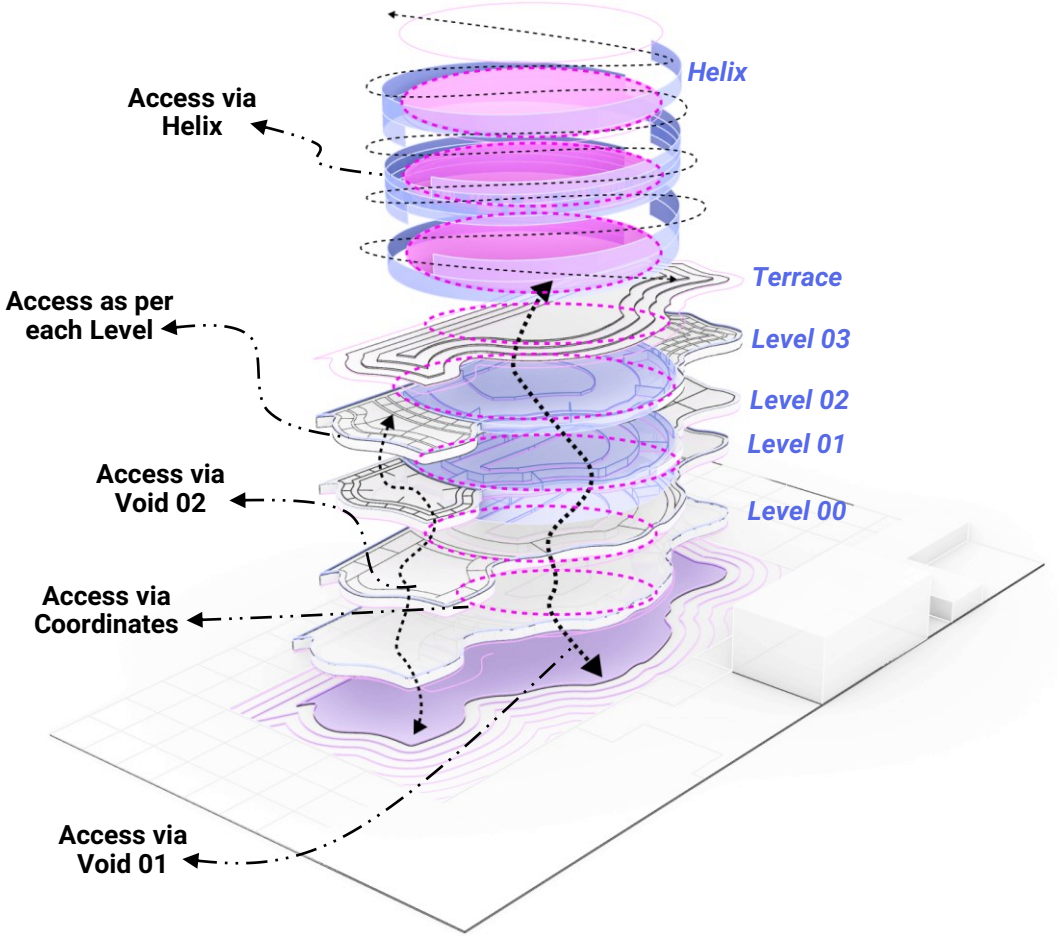
- M-Mulate
- M-Agora
- M-D Gallery
- M-Llab
- M-View
- M-Show
- M-Test
- M-Mate
- M-Bator
- M-Vation
- M-Net

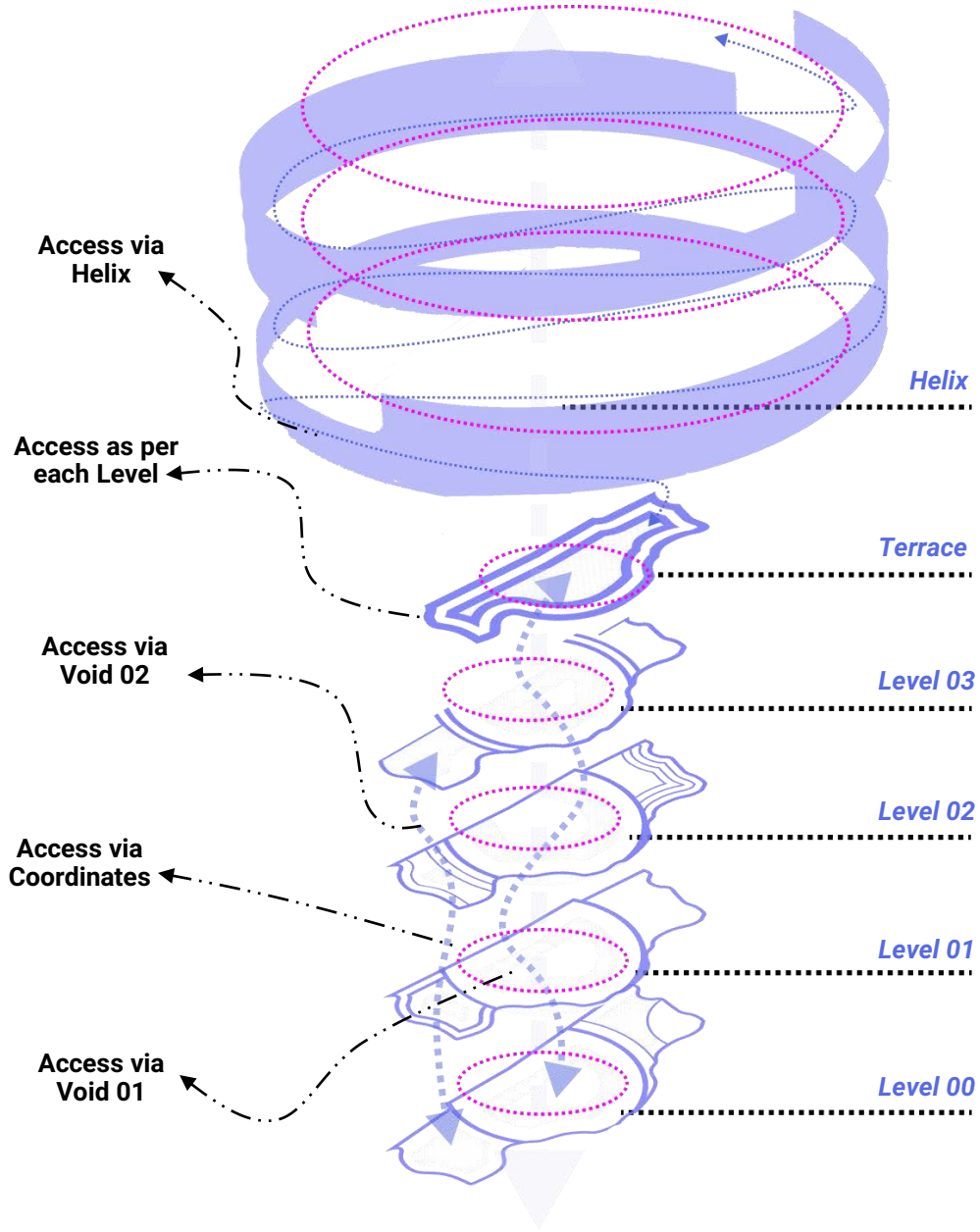


Key Programmatic Section

THE METANAEUM

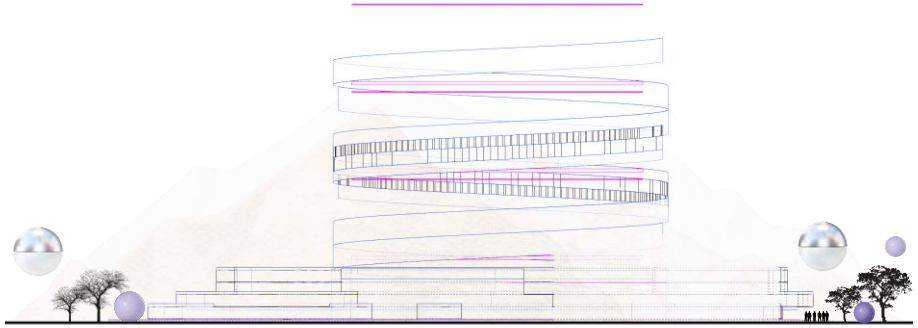
Movement in Motion: Floating through the Metanaeum / Circulation Plans



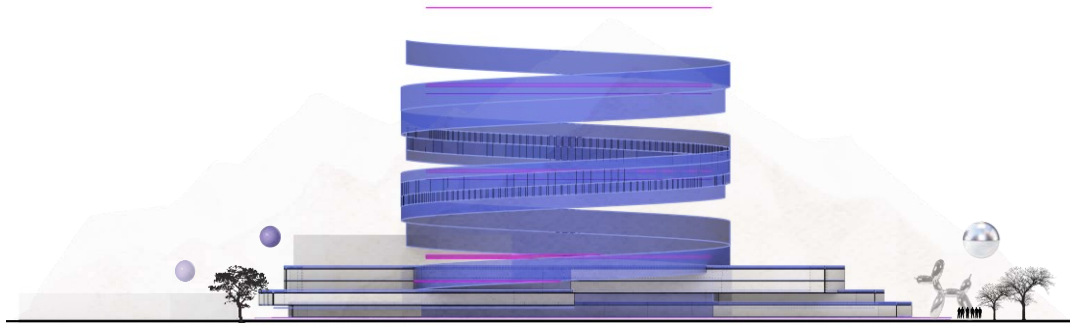


THE METANAEUM

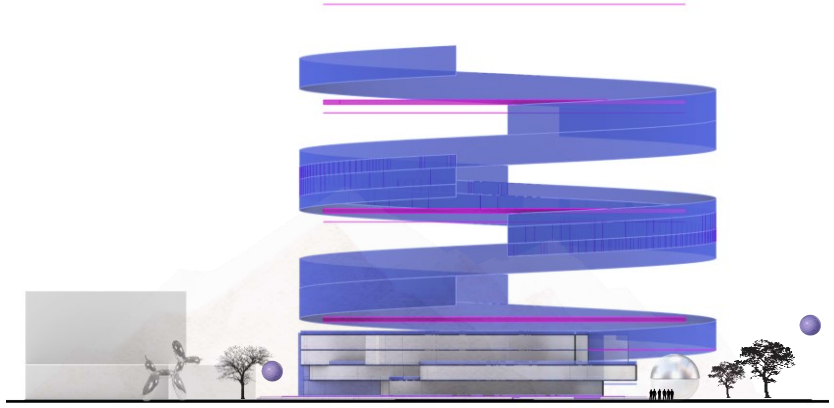
Beyond the Borders / Elevations



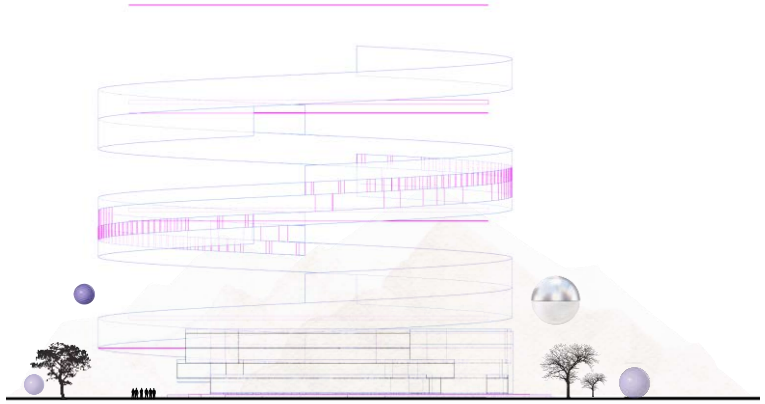
ELEVATION A



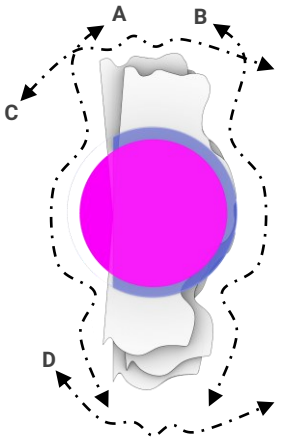
ELEVATION B



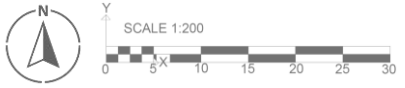
ELEVATION C



ELEVATION D



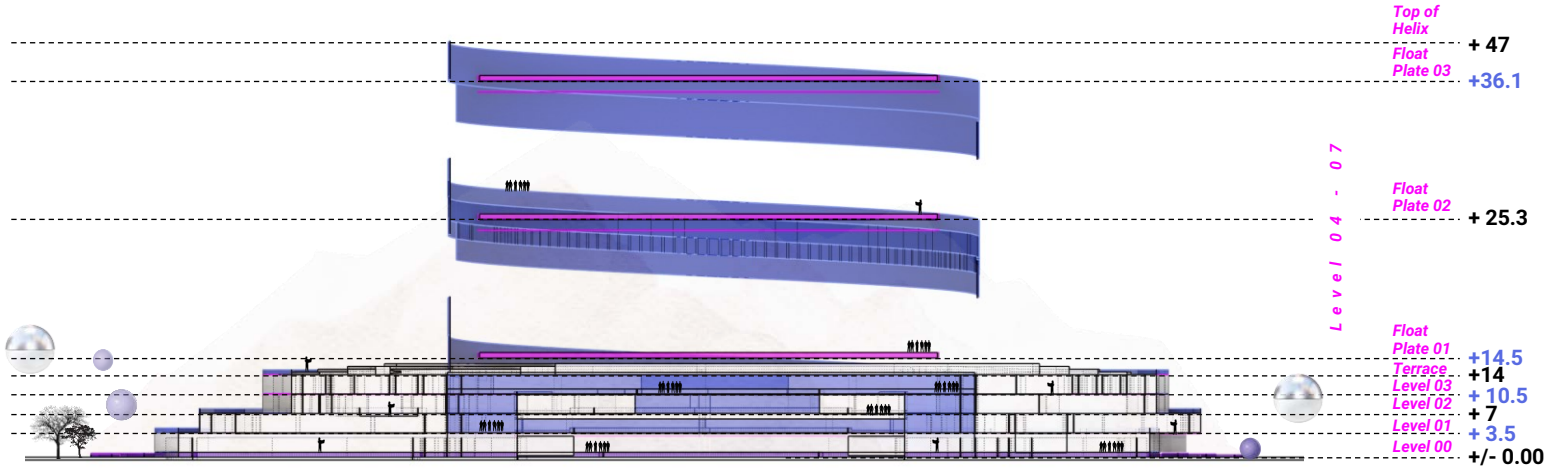
Key Plan



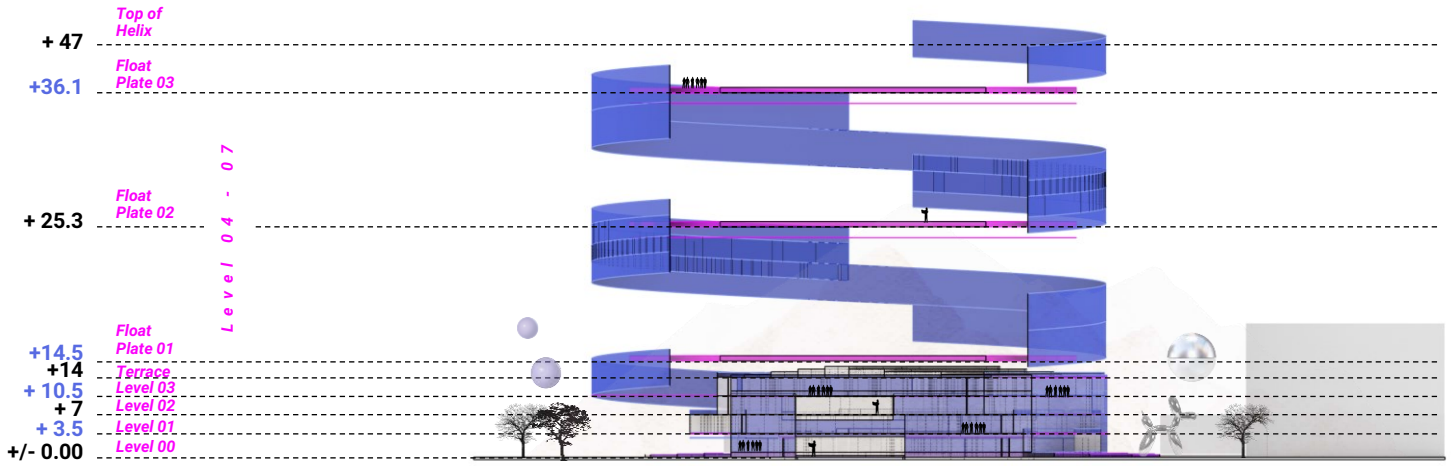
SITE AREA: 5 ACRES
BUILT-UP AREA: 65,280 SQ M
G+4 / TOTAL HEIGHT: 14 + 32.5 M

THE METANAEUM

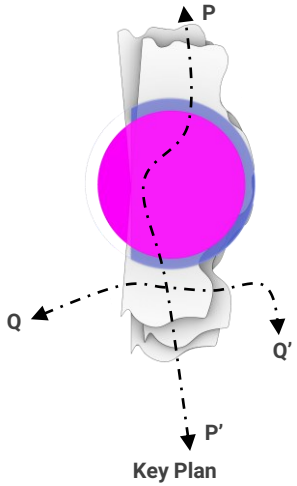
Beyond the Surface / Sections



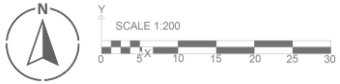
SECTION PP'



SECTION QQ'



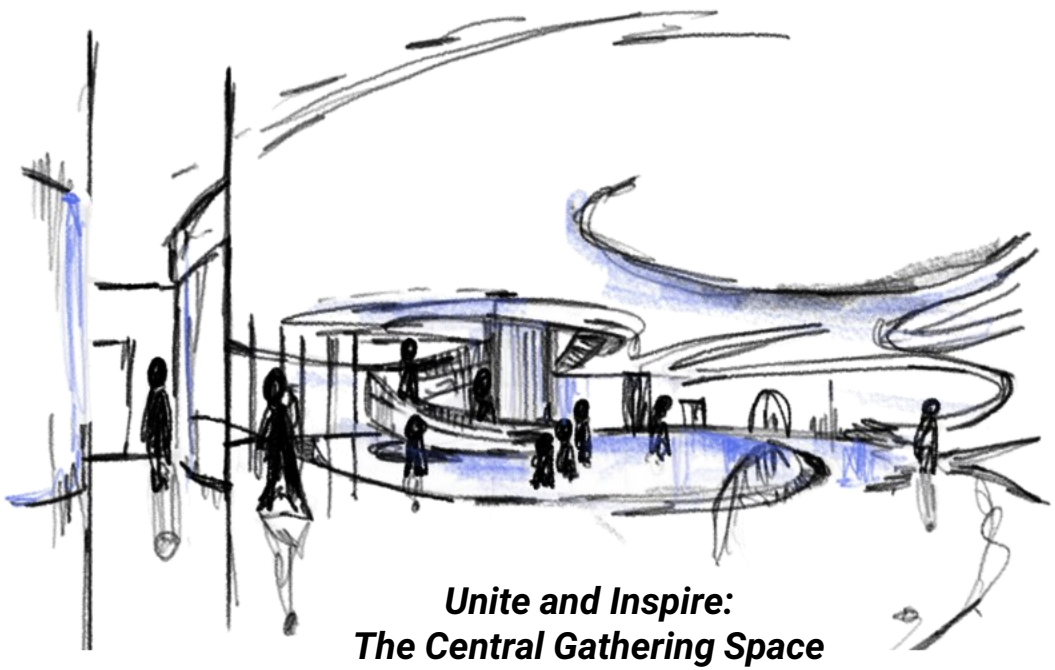
Key Plan



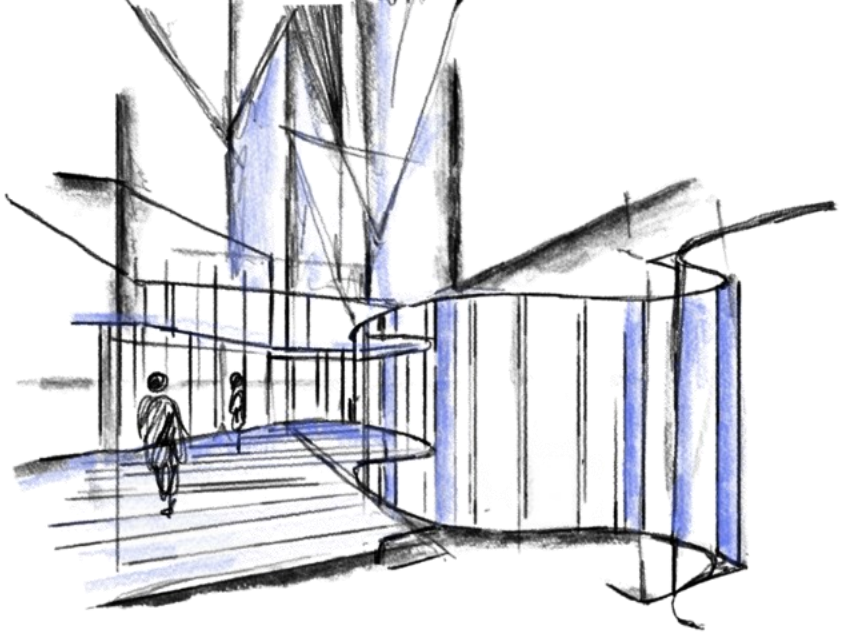
SITE AREA: 5 ACRES
BUILT-UP AREA: 65,280 SQ M
G+4 / TOTAL HEIGHT: 14 + 32.5 M

All Dimensions are in Meters


SPATIAL EXPERIENCE
Spaces that inspire creativity, collaboration, and innovation

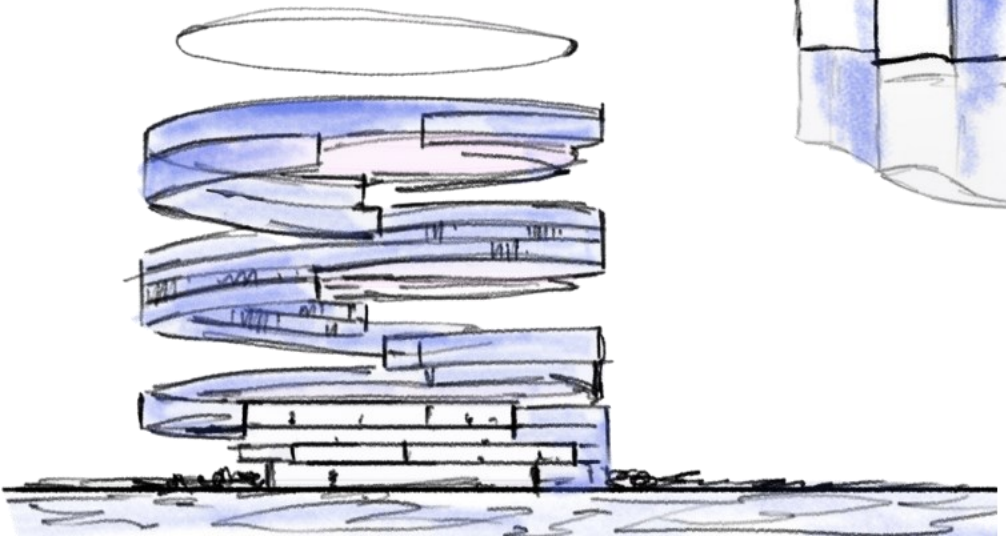


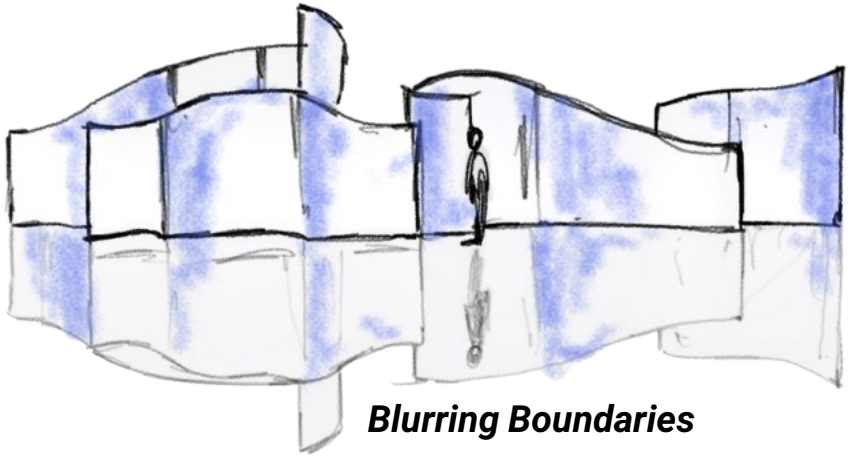
Unite and Inspire:
The Central Gathering Space



Floating through the Interiors with Walkways

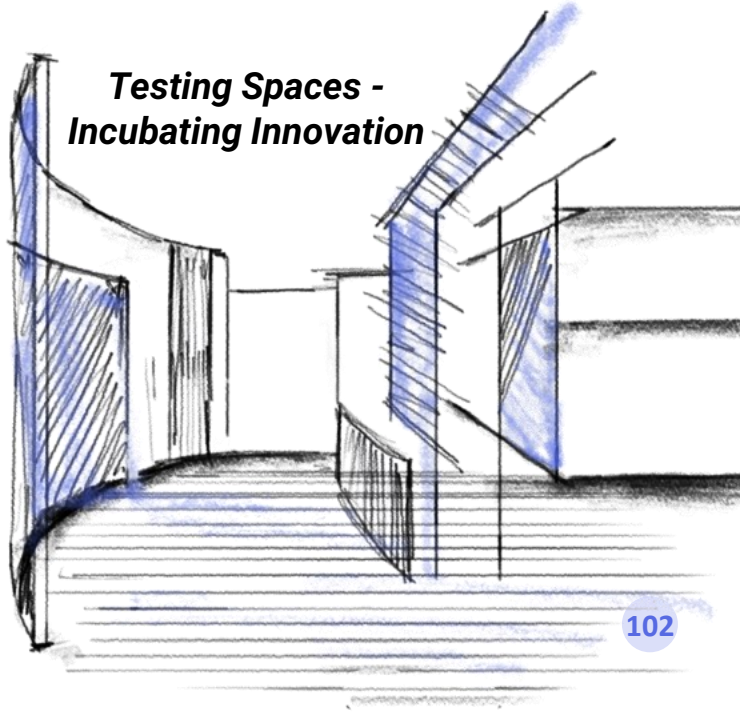
Metanaeum's Harmony of
Constant & Variable





Blurring Boundaries

Testing Spaces -
Incubating Innovation

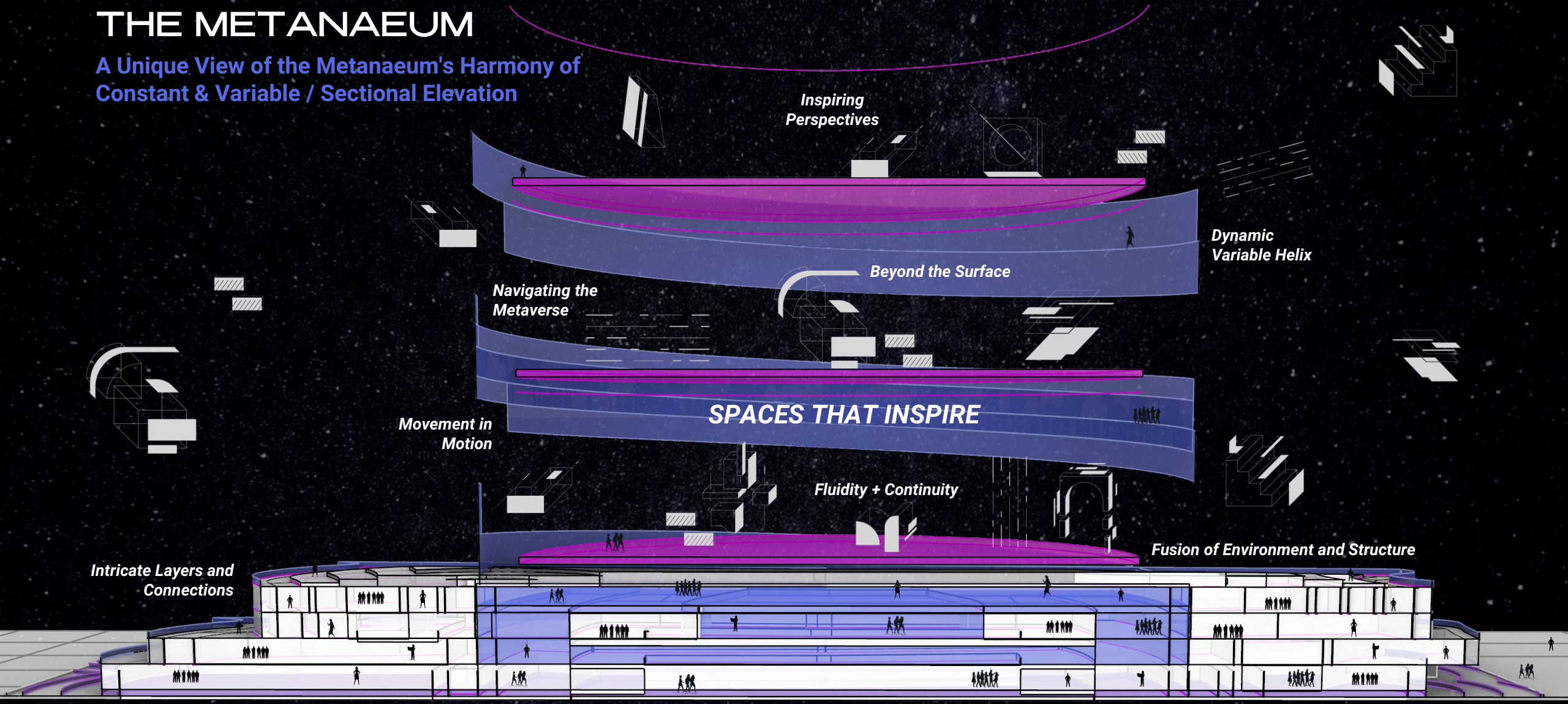


SPATIAL EXPERIENCE

Fostering Growth, Innovation and Connection

THE METANAEUM

A Unique View of the Metanaeum's Harmony of Constant & Variable / Sectional Elevation



THE METANAEUM

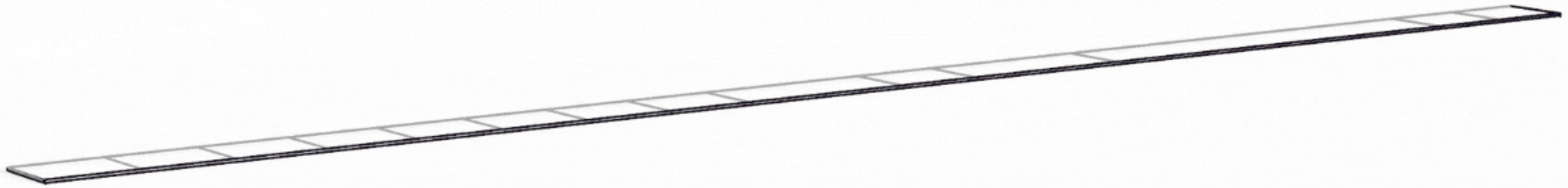
A Unique View of the Metanaeum's Harmony of Constant & Variable / Sectional Elevation

Innovative Design
Organic stacked and helical variable structure offers unique and innovative design

Collaboration and Creativity
Encourages collaboration and creativity, with spaces for testing, congregation, and education

Immersive Experience
Integration with the Metaverse and dynamic seasonal transformations provide a highly engaging and immersive experience for users

Time and Space
Uncovers the temporal and spatial dimensions of the Metanaeum through its details



THE METANAEUM

A Unique View of the Metanaeum's Harmony of Constant & Variable / Sectional Elevation

- **Showcases the seamless harmony between the building's constant and variable structures.**
- **The organic stacked form of the constants is perfectly complemented by the helical shape of the variables, creating an innovative design that is both functional and visually striking.**
- **Offers a glimpse into the building's internal workings, highlighting the careful attention paid to circulation and access.**
- **Overall, this view demonstrates the Metanaeum's commitment to harmonizing design with function in a way that encourages creativity, collaboration, and exploration.**

USER CAPACITY AND ENGAGEMENT

Limitless Minds Connect and Create

Architectural Capacity:

- **Proposed built-up area: 65,280 sq. m.**
- ***Average* space per user: 10 sq. m.**
- **Total number of users that can be accommodated architecturally: 6,528 users**

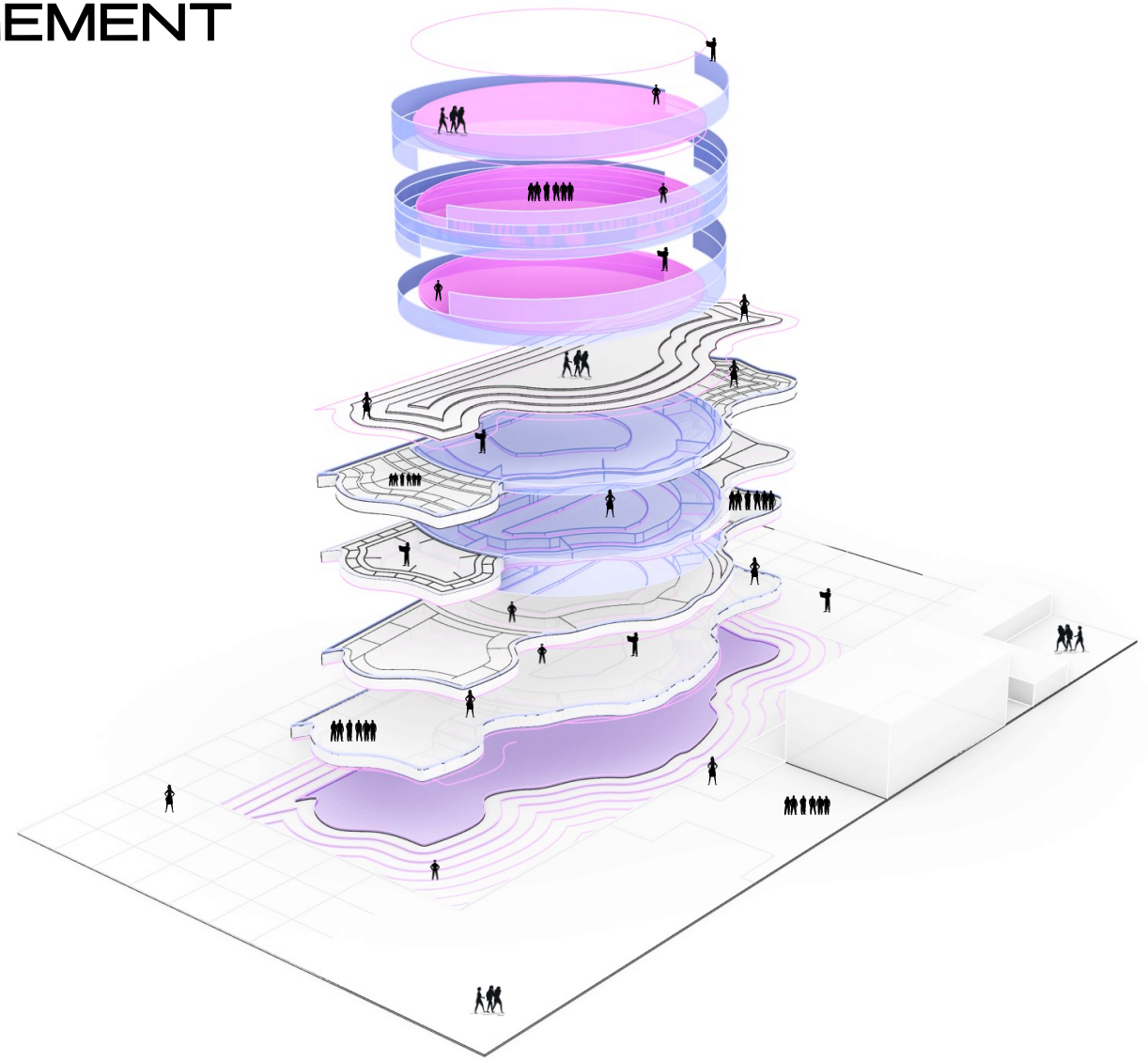
Database Capacity:

- **Capacity to handle up to 10,000 concurrent users**

Metanaeum Capacity:

- **8,000 Users**

- **Subscription Model:** Architects can subscribe to Metanaeum through pricing plans.
- **User Segregation:** Based on subscription type and access levels. Subscribed Architects have dedicated spaces and privileges. Other users may have limited access or temporary access to specific areas.
- **Capacity and Booking:** Subscribed Architects can access the platform without booking slots. Some spaces still require a reservation, such as simulators.
- **Utilization and Access Control:** Measures like user limits and access queues manage concurrent users.



ARCHIVATAR

Unleashing an Identity in the Metanaeum / Avatars & Portals

Every user has their own ArchiVatar, a digital embodiment of their design identity.
With their ArchiVatars, users can seamlessly connect, collaborate, and share ideas with fellow architects and designers, forging meaningful connections in this virtual realm of limitless possibilities.

Architects via their ArchiVatars can traverse the digital realm
Using helical portals or walking, allowing them to experience and immerse in the sensory and spatial curations

DYNAMIC SCALING: METANAEUM AT DESIRED SCALE

Unleashing Imagination, Redefining Perception

Metanaeum offers users the unique ability to scale themselves within the digital realm, allowing for diverse spatial experiences and personalized exploration.

Users can choose from preset scales, ranging from actual human scale (1.6 meters in height) to smaller and larger scales, creating a sense of presence and altering their perception of spaces.

As if you were physically present, immersing yourself in true-to-life dimensions

MINIATURE SCALE

Shrink yourself down to a fraction of the human scale, unlocking new perspectives and uncovering intricate details

HUMAN SCALE

Amplify your presence and feel the grandeur by scaling yourself up to monumental proportions

GIANT SCALE

PERCEPTION

Scaling allows users to perceive spaces from various vantage points, unveiling new design possibilities and spatial relationships.

EXPLORATION

Different scales provide users with a range of areas to work, test, and collaborate within, fostering creativity and adaptability.

IMMERSION

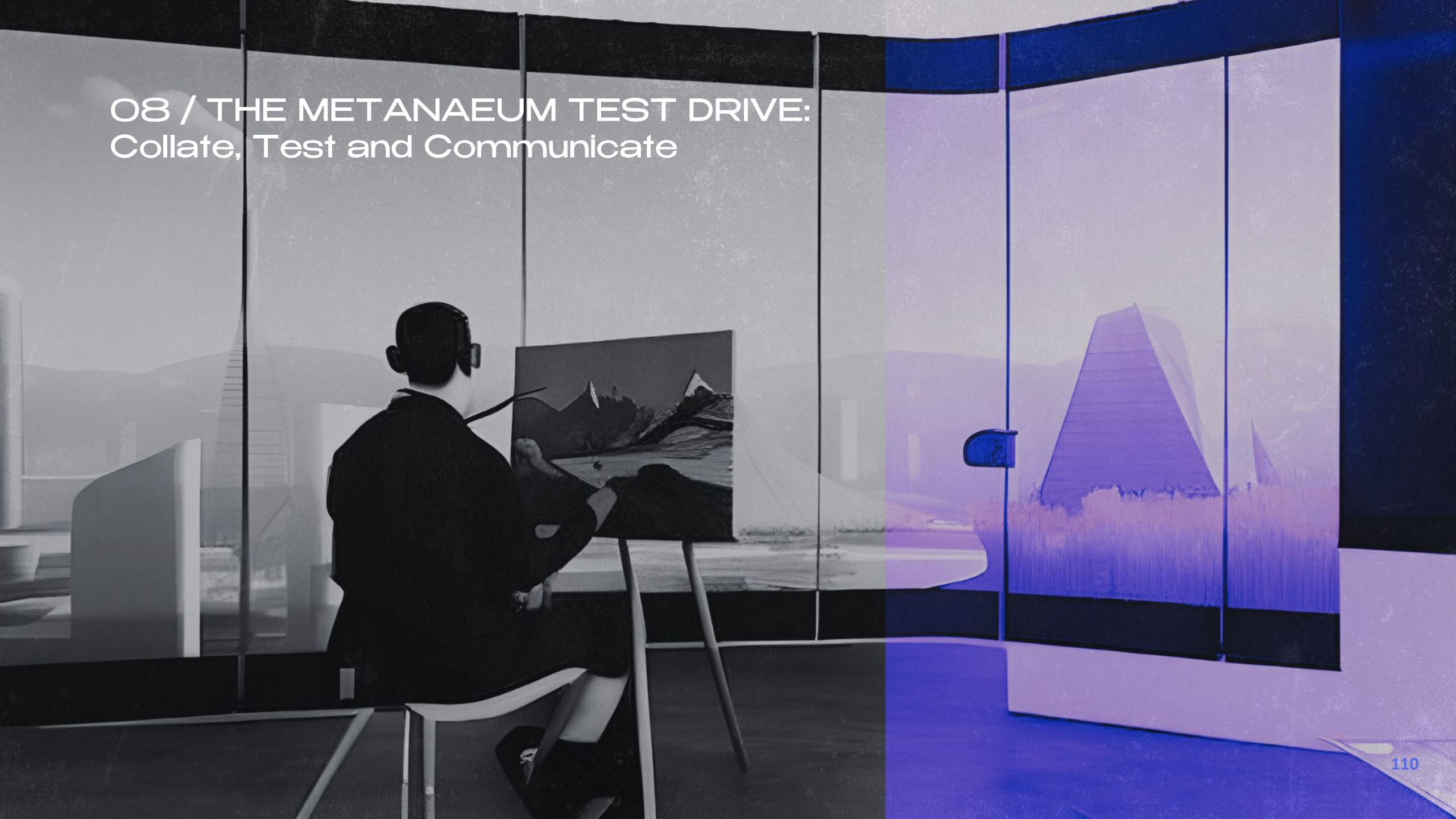
Scaling enhances the immersive experience, enabling users to feel more connected to the virtual environment and amplifying the sense of presence.

COMPARATIVE ANALYSIS

By experiencing spaces at different scales, users can compare design concepts, evaluate proportions, and refine their architectural vision.

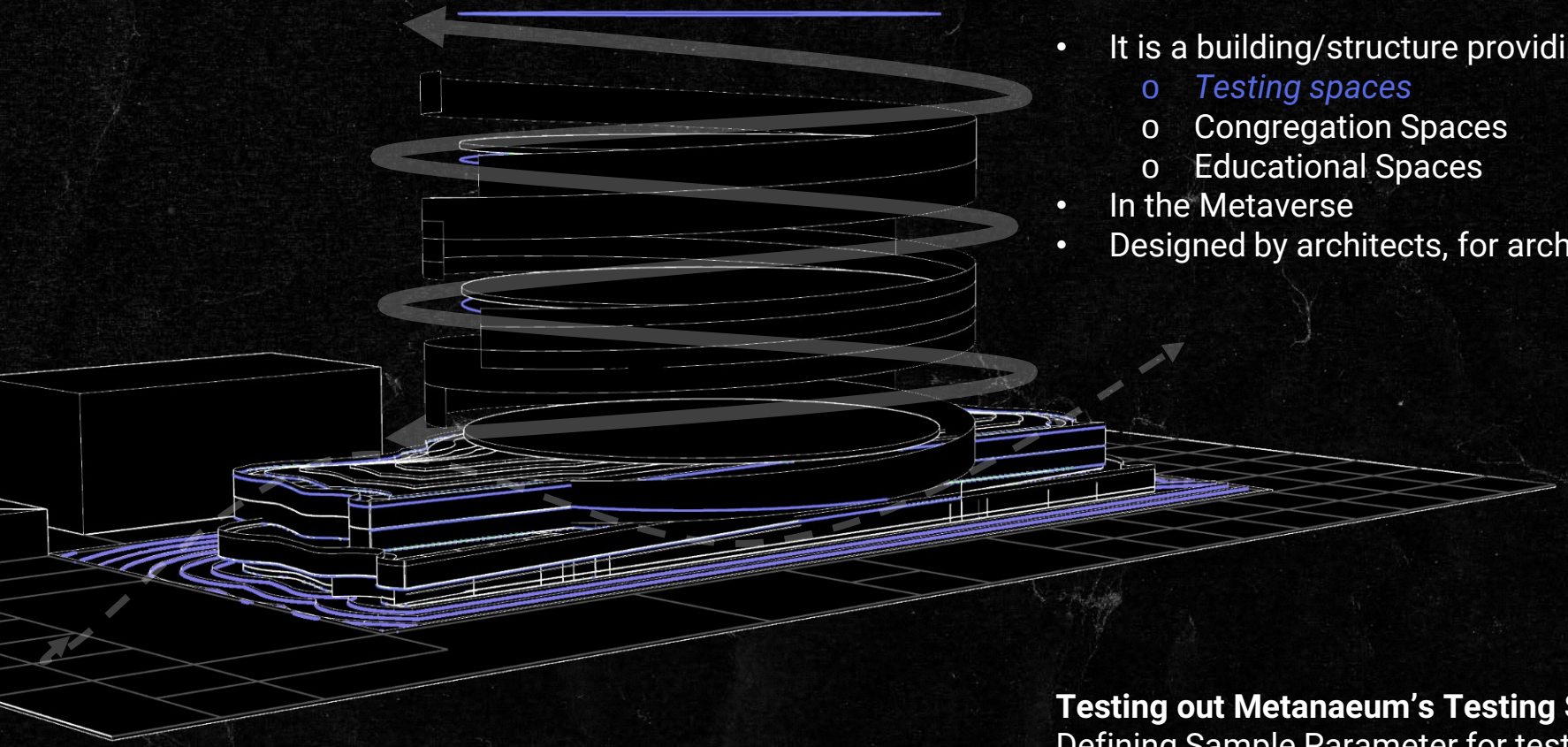
With dynamic scaling, Metanaeum empowers architects to transcend the constraints of physical reality and design in a realm where imagination knows no bounds.

08 / THE METANAEUM TEST DRIVE:
Collate, Test and Communicate



THE METANAEUM

For Architects, By Architects / Creativity without Constraint



What is the Metanaeum?

- It is a building/structure providing
  - *Testing spaces*
  - Congregation Spaces
  - Educational Spaces
- In the Metaverse
- Designed by architects, for architects

Testing out Metanaeum's Testing Spaces >
Defining Sample Parameter for testing XYZ building >
Defining User Personas who are 'hypothetically' testing their projects >
Analyzing output generated, how it differs

THE METANAEUM TEST DRIVE

Sample Project 00_01

ART GALLERY

Location
Delhi, India

SHAPE, SIZE + SCALE
Single-story building, Rectangular footprint = 1000 sq m. Design = Simple, modern design that blends in with the surrounding urban context.

ENVIRONMENTAL
Densely Populated Urban Area with High noise level and poor air quality.

SITE CONDITIONS
The site is long and narrow, with a park to the north and a busy road to the south.

PROGRAM
A variety of contemporary art exhibitions, with a focus on supporting emerging Indian artists.

USERS
Visitors to view the exhibitions, Artists + Curator
Capacity = 300-400 px

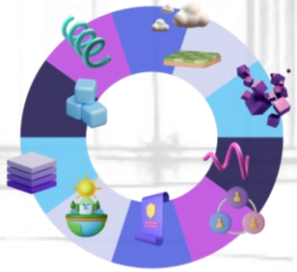
BUILDING CODE
Local zoning, accessibility, fire safety, and energy codes

SUSTAINABILITY
A variety of sustainable features - rainwater harvesting, natural ventilation, and passive solar design.

INTANGIBLES
Create a sense of calm and introspection that allows visitors to fully engage with the artwork.

STRUCTURE
A flexible and modular structure that allows for easy reconfiguration of exhibition spaces.

MATERIAL
Incorporate locally sourced and sustainable materials such as sandstone and reclaimed wood.



As per the National Building Code of India (NBC) 2016, including the NBC-SP 7: National Structural Code of India 2016 for design of the building structure and fire safety codes as per the NBC-SP 88: National Building Code of India Part 4 Fire and Life Safety 2017.

THE METANAEUM TEST DRIVE

Sample Project 00_02

PERFORMING ARTS CENTRE

Location
Mumbai, India

SHAPE, SIZE + SCALE
Multi-story building with a parametric façade that responds to the surrounding urban context. Building Footprint = 5,000 sq m; Height = 25 m.

PROGRAM
Host a variety of performances + Spaces for rehearsals, workshops, and other educational activities.

INTANGIBLES
Create a sense of awe and wonder that enhances the audience's experience of the performances.

ENVIRONMENTAL
Densely Populated Urban Area with High noise level and poor air quality.

USERS
Performers, Audience Members, and Educators. Capacity = 600-700 px

STRUCTURE
A kinetic façade that responds to the changing urban context, creating an ever-changing and dynamic visual experience for passersby.

SITE CONDITIONS
Irregularly shaped site with multiple access points from different roads.

BUILDING CODE
Local zoning, accessibility, fire safety, and energy codes

MATERIAL
Incorporate sustainable materials, such as bamboo and recycled steel, in a way that celebrates the craft of traditional Indian artisans.

SUSTAINABILITY
A variety of features - rainwater harvesting, natural ventilation, + passive solar design, + with renewable energy sources

As per the National Building Code of India (NBC) 2016, including the NBC-SP 7: National Structural Code of India 2016 for design of the building structure and fire safety codes as per the NBC-SP 88: National Building Code of India Part 4 Fire and Life Safety 2017.

THE METANAEUM TEST DRIVE

Sample Project 00_03

MIXED USE HIGH RISE

Location
Bangalore, India

SHAPE, SIZE + SCALE
Parametric shape with a unique façade system. 60 floors with a total height of 280 m. Gross floor area = 1,20,000 sq m.

PROGRAM
Mixed-use program including offices, conference facilities, retail, and a sky lounge.

INTANGIBLES
Incorporation of spatiality and lighting for well-being and productivity.

ENVIRONMENTAL
Hot & humid climate, heavy monsoon rains, high wind loads, + frequent seismic activity.

USERS
Large workforce of 6,000 people, including executives, managers, and support staff.

STRUCTURE
A Reinforced concrete structure designed to withstand high wind loads and seismic activity.

SITE CONDITIONS
Urban site with limited space, surrounded by other high-rise buildings.

BUILDING CODE
Local zoning, accessibility, fire safety, and energy codes

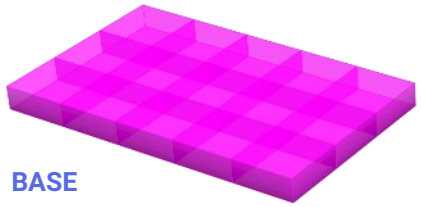
MATERIAL
Use of sustainable materials and energy-efficient systems to reduce carbon footprint and operating costs.

SUSTAINABILITY
A variety of features - rainwater harvesting, natural ventilation, + passive solar design, + with renewable energy sources

As per the National Building Code of India (NBC) 2016, including the NBC-SP 7: National Structural Code of India 2016 for design of the building structure and fire safety codes as per the NBC-SP 88: National Building Code of India Part 4 Fire and Life Safety 2017.

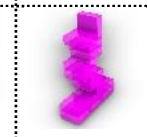
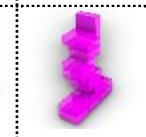
THE METANAEUM USER

Persona + Sample M-Massing – User P



BASE

User	P
User Group	Architecture student
Age	21
Location	New Delhi
Bio	Third-year architecture student at a Delhi university. Passionate about design and sustainability.
Personality	Creative, curious, and hardworking. Enjoys taking on new challenges and learning.
Interests	Sustainable design, urban planning, traveling, sketching
Influences	B.V. Doshi, Laurie Baker, Charles Correa
Needs	Access to latest software and technology, networking opportunities, ability to showcase work to potential employers.
Wants	Collaboration platform for architects, sustainable design and urban planning resources, wider audience to showcase work.
Goals	Graduate with honors, land job at top architecture firm, make positive environmental impact.
Expectations	Resources and support for success in studies and career. Community of like-minded individuals for feedback and support.
Motivation	Passion for design and desire to make a positive impact on the environment.
Pain Points	Opportunities to collaborate with others

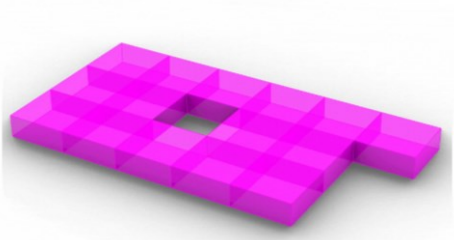
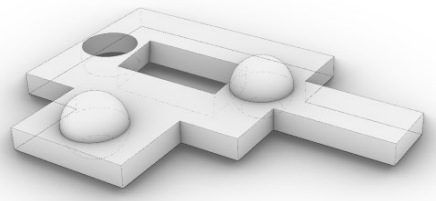
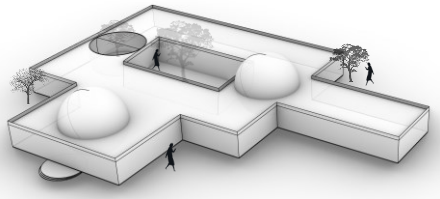
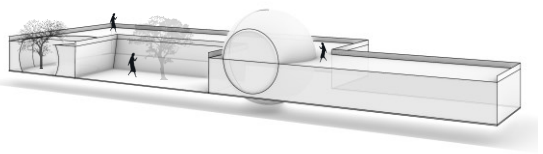
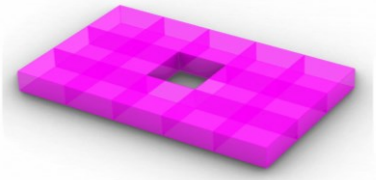
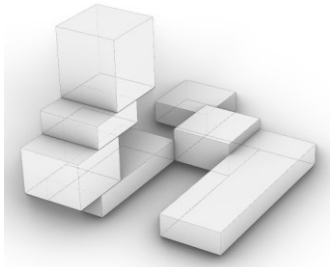
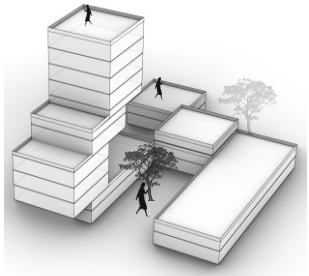
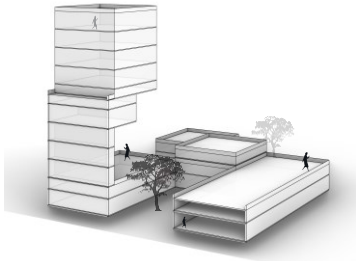
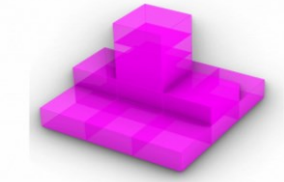
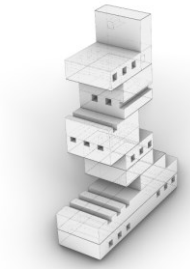
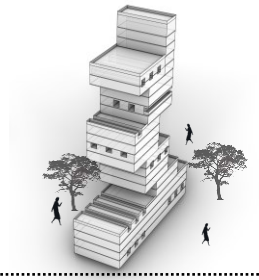
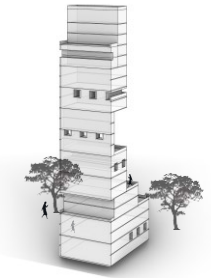
(ENV) - Environmental	(SC) - Site Conditions	(SS) - Shape, Scale, Size	(PR) – Program	(US) – Users	(BC) – Building Codes	(SUS) – Sustainability	(MT) – Material	(ST) – Structure	(IT) – Intangibles
01_00P									
									
Courtyard To Combat Noise & Air Pollution	Open – Park Side Define Entry + Close – Road Side	Shifting Mass To Blend In With Urban Context	Double Ht. Volumes As Per Program	Buffer Zone For User Entry And Movement	Increasing Spaces Etc As Per Building Norms	Sunken Courtyard For Passive Cooling	Locally Sourced Material – Slate + Grit	Modular Units With Flexibility	Calm And Introspection Via Courtyard And Sunken Court
02_00P									
									
Courtyard to combat Noise & Air Pollution	Irregular Site with Multiple Access Points	Multi-story with Parametric Facade	Segregation as per functionality – semi-public + public	Ease of movement and access within building	Setbacks and Height factors – Overlayed	Voids for sustainable heating and cooling	Locally sourced material – Recycled steel + Bamboo	Kinetic Parametric Façade as per urban parameters	A sense of awe and wonder through spatiality
03_00P									
									
Stacking of mass to account for seismic stability	High rise due to limited space, efficient use of space	Unique staggered façade system driven by urban parameters	Reoriented mass as per functionality and iconic cues	Shifting of mass for better circulation	Reduction of cantilevered masses as per norms	Allocation for incorporating sustainable features	Moss Concrete + Steel to reduce carbon footprint	Structural stability via reinforced concrete	Staggered mass allows for spatiality and better lighting

Exploring the possibilities: Hypothetical projects tested by diverse user personas

THE METANAEUM - TEST DRIVE – OUTPUT 01

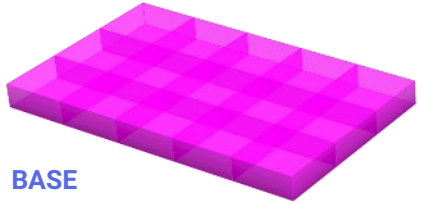
Exploring the possibilities: Hypothetical projects tested by diverse user personas

User P – Architecture Student

Sample Project	M-Massing	Form	Form Development 01	Form Development 02
01_01	01_01P	01_02P	01_03P	01_03P
ART GALLERY				
02_01	02_01P	02_02P	02_03P	02_03P
PERFORMING ARTS CENTRE				
03_01	03_01P	03_02P	03_03P	03_03P
MIXED-USE HIGH RISE				

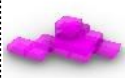
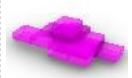
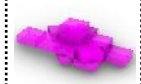
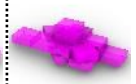
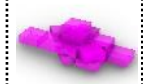
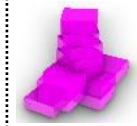
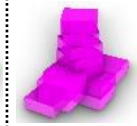
THE METANAEUM USER

Persona + Sample M-Massing – User Q



BASE

User	Q
User Group	Young Architect
Age	28
Location	Mumbai
Bio	Recent architecture school graduate working at mid-sized Mumbai firm. Interested in sustainable design.
Personality	Enthusiastic, detail-oriented, and creative. Enjoys taking on new challenges and learning.
Interests	Sustainable design, public art, travel, photography.
Influences	Bjarke Ingels, Tadao Ando, Maya Lin
Needs	Mentorship and professional development opportunities, exposure to various design styles and techniques, ability to showcase work to potential clients and employers.
Wants	Connect with architects and professionals, sustainable design + urban planning resources, wider audience to showcase work.
Goals	Gain experience and expertise in architecture + develop strong professional network
Expectations	Mentorship, development, and networking opportunities. Community of like-minded individuals for feedback and support.
Motivation	Passion for design and desire to contribute to sustainable and innovative projects.
Pain Points	Finding mentorship and networking opportunities, access to design resources, and being overwhelmed by online information.

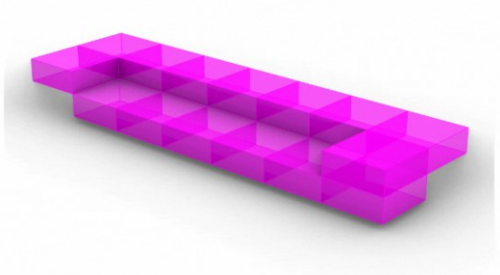
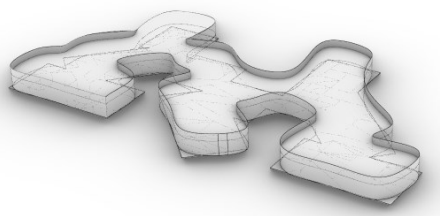
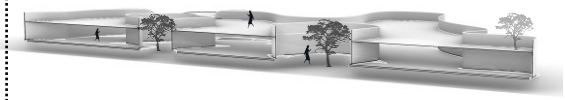
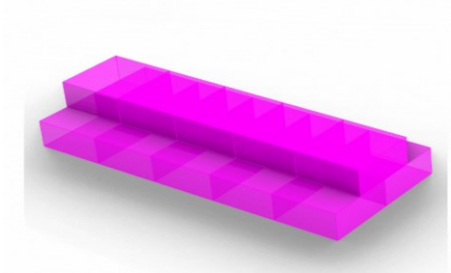
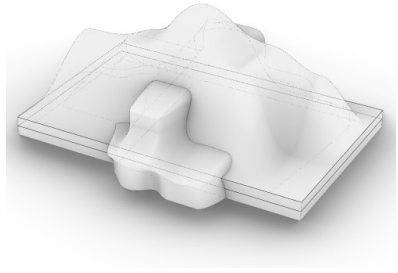
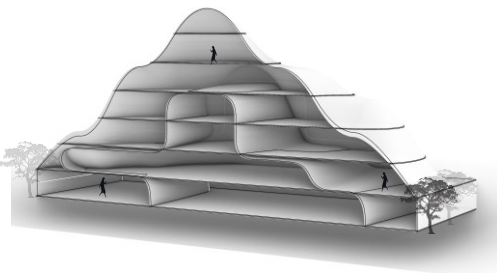
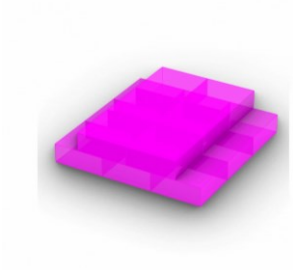
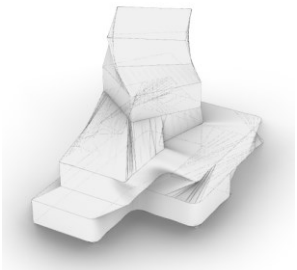
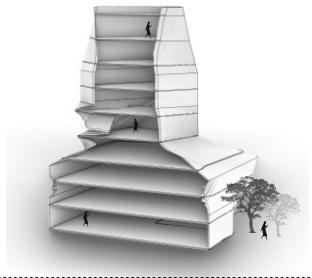
	(ENV) - Environmental	(SC) - Site Conditions	(SS) - Shape, Scale, Size	(PR) – Program	(US) – Users	(BC) – Building Codes	(SUS) – Sustainability	(MT) – Material	(ST) – Structure	(IT) – Intangibles
01_00Q	 Courtyard to combat Noise & Air Pollution	 Definition of entry from the road	 Tilting of masses for internal spatial quality	 Repositioning of masses as per program	 Repositioning of masses as per easier access	 Setbacks and distances between masses as per norms	 Tilted masses allows better light + ventilation	 Locally sourced material – Timber	 Modular units with Flexibility for reconfiguration	 Spaces encouraging calm and introspection
02_00Q	 Positioning of mass to reduce noise + air pollution	 Stacking to account for multiple access points	 Restacking to blend with urban context	 Creation of masses as per the functionality, play with heights	 Reorientation of blocks for better views and circulation	 Footprint consolidated as per norms	 Turning of masses for better light and ventilation	 Bamboo, jute and cane to celebrate Indian artisans	 Kinetic bamboo façade for different experiences	 Spaces that arouse a feeling of awe and wonder
03_00Q	 Stacking of mass to account for seismic stability	 Compacting structure as per space and adding green opp.	 Creating a parametric façade on a unique base	 Shifting masses as per functionality and circulation	 Shifting of mass for more efficient circulation	 Modifying heights and voids as per norms	 Adding staggering within masses for wind movement	 Use of moss concrete with steel	 Structural system to deal with winds + seismic forces	 Twisted masses allow for light and ventilation increasing productivity

Exploring the possibilities: Hypothetical projects tested by diverse user personas

THE METANAEUM - TEST DRIVE – OUTPUT 02

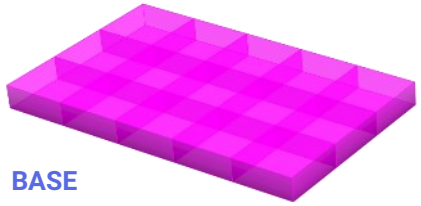
Exploring the possibilities: Hypothetical projects tested by diverse user personas

User Q – Young Architect

Sample Project	M-Massing	Form	Form Development 01	Form Development 02
01_01	01_01Q	01_02Q	01_03Q	01_03Q
ART GALLERY				
02_01	02_01Q	02_02Q	02_03Q	02_03Q
PERFORMING ARTS CENTRE				
03_01	03_01Q	03_02Q	03_03Q	03_03Q
MIXED-USE HIGH RISE				

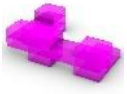
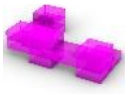
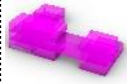
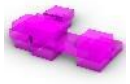
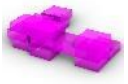
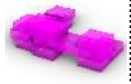
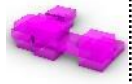
THE METANAEUM USER

Persona + Sample M-Massing – User R



BASE

User	R
User Group	Principal Architect
Age	55
Location	Banglore
Bio	Experienced architect and principal of a successful Bangalore firm with 30+ years of diverse project experience. Passionate about mentoring young architects.
Personality	Experienced, knowledgeable, and patient, enjoys mentoring and collaborating with younger architects.
Interests	Sustainable design, historic preservation, traveling, reading.
Influences	Le Corbusier, Louis Kahn, Frank Lloyd Wright
Needs	Access to latest software and technology, opportunities to mentor and collaborate, exposure to various design styles and techniques.
Wants	Connect with senior architects and industry professionals, access to resources and ability to mentor younger architects.
Goals	To continue developing his skills, to mentor and support younger architects, and to contribute to innovative and sustainable architecture projects.
Expectations	Opportunities for mentoring and collaboration with younger architects, access to resources, and a community of professionals who share his passion
Motivation	Desire to share his expertise, support younger architects, and contribute to sustainable design and innovation in architecture.
Pain Points	Lack of emphasis on sustainable design and historic preservation, Keeping up with the latest technology.

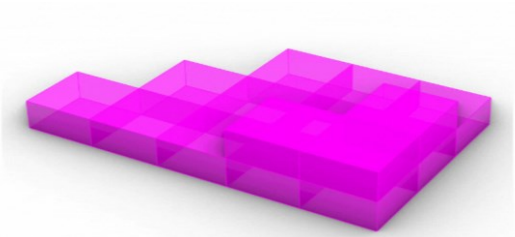
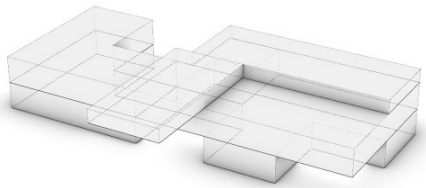
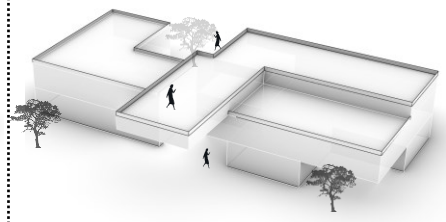
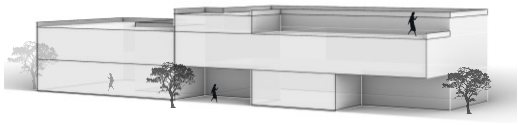
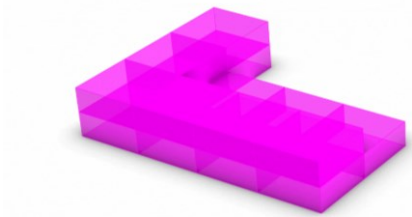
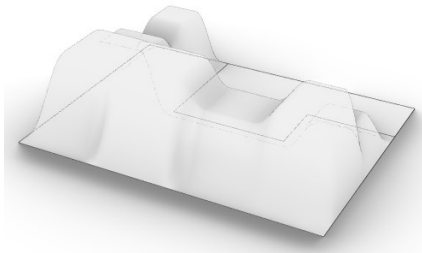
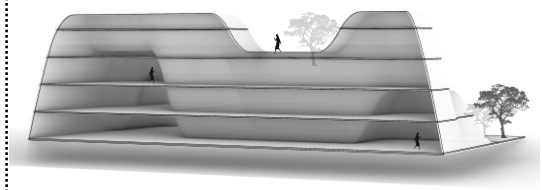
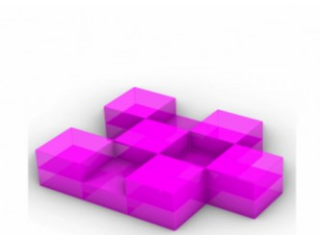
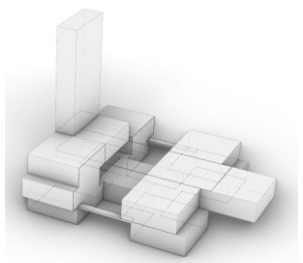
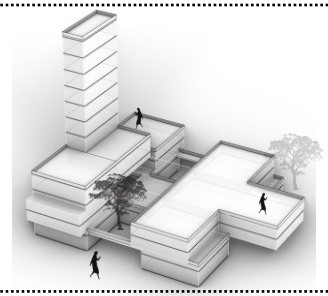
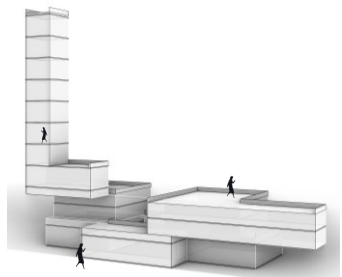
(ENV) - Environmental	(SC) - Site Conditions	(SS) - Shape, Scale, Size	(PR) – Program	(US) – Users	(BC) – Building Codes	(SUS) – Sustainability	(MT) – Material	(ST) – Structure	(IT) – Intangibles
01_00R									
									
Mass segregation into heavy and light	Open towards park, closed towards road	Definition of entry and Double Ht. Spaces	Positioning of mass as per circulation	Definition of walkways and corridors	Positioning mass within setbacks	Cross Ventilation through voids	Locally sourced material – Sandstone	Modular units with Flexibility	Calm and Introspection voids and open spaces
02_00R									
									
L-shaped stacked mass to combat Noise & Air Pollution	Stacking to incorporate multiple access points	Stacking to create multi-story, respond to urban context	Spatial experience created as per functions	Voids for user circulation and ease of use	Heights readjusted as per norms	Balconies and other open spaces	Recycled steel with glass to celebrate Indian artisans	Kinetic steel façade with digital panels – New India	Panels and spatial quality create awe and wonder
03_00R									
									
Solids and Voids to inculcate passive techniques	Compacting of masses due to limited space	Stacking of masses to create high rise	Repositioning of masses as per functionality	Introduction of voids for better views and movement	Inclusion of open spaces and balconies as per norms	Reorientation of masses as per sustainability + central courtyard	Geopolymer concrete with steel	Structural stability against wind and seismic forces	Open spatial plan with ventilation to increase productivity

Exploring the possibilities: Hypothetical projects tested by diverse user personas

THE METANAEUM - TEST DRIVE – OUTPUT 03

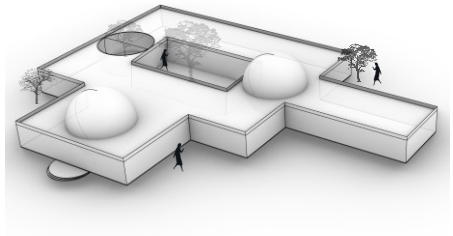
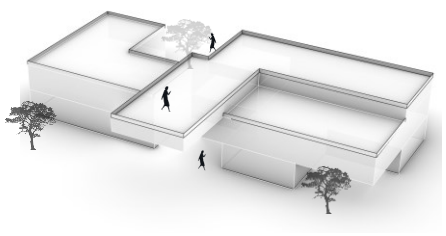
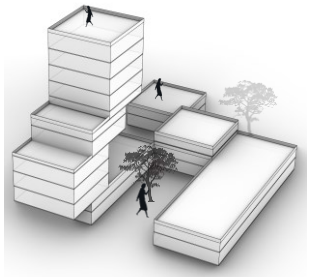
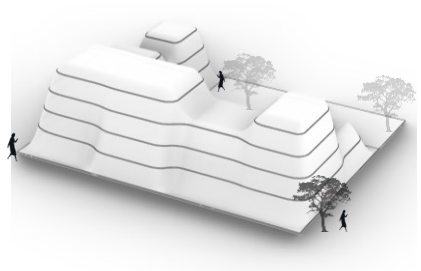
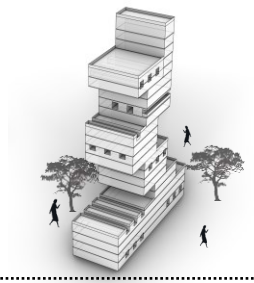
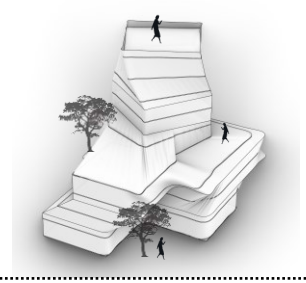
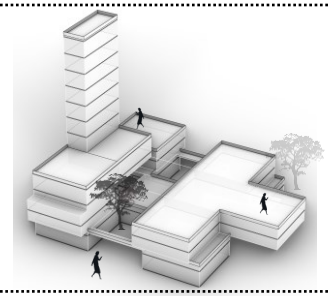
Exploring the possibilities: Hypothetical projects tested by diverse user personas

User R – Senior Architect

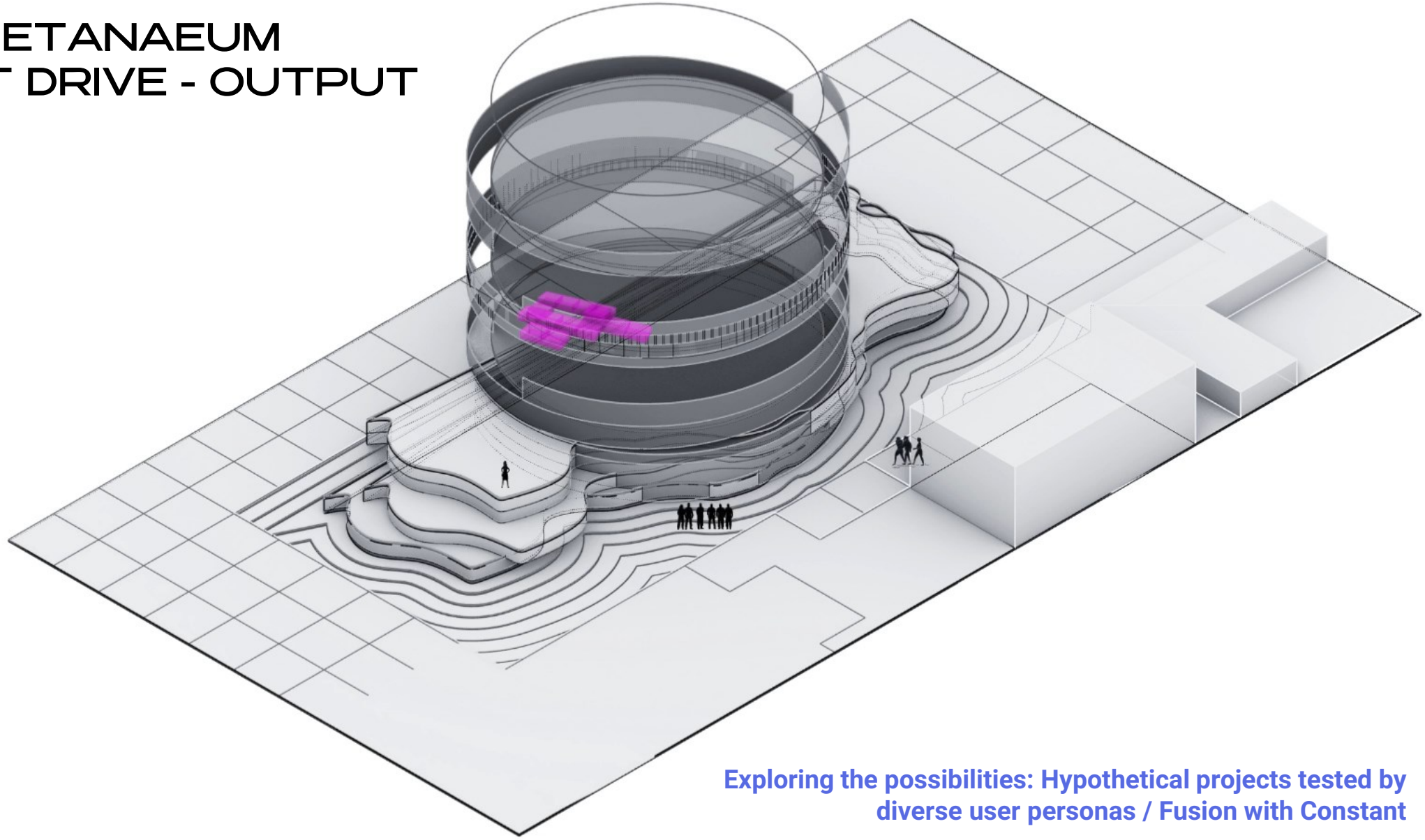
Sample Project	M-Massing	Form	Form Development 01	Form Development 02
01_01	01_01R	01_02R	01_03R	01_03R
ART GALLERY				
02_01	02_01R	02_02R	02_03R	02_03R
PERFORMING ARTS CENTRE				
03_01	03_01R	03_02R	03_03R	03_03R
MIXED-USE HIGH RISE				

THE METANAEUM - TEST DRIVE - OUTPUT

Exploring the possibilities: Hypothetical projects tested by diverse user personas

Sample Project	User P – Architecture Student	User Q – Young Architect	User R – Senior Architect
01_03	01_03P	01_03Q	01_03R
ART GALLERY			
02_03	02_03P	02_03Q	02_03R
PERFORMING ARTS CENTRE			
03_03	03_03P	03_03Q	03_03R
MIXED-USE HIGH RISE			

THE METANAEUM
- TEST DRIVE - OUTPUT



Exploring the possibilities: Hypothetical projects tested by diverse user personas / Fusion with Constant

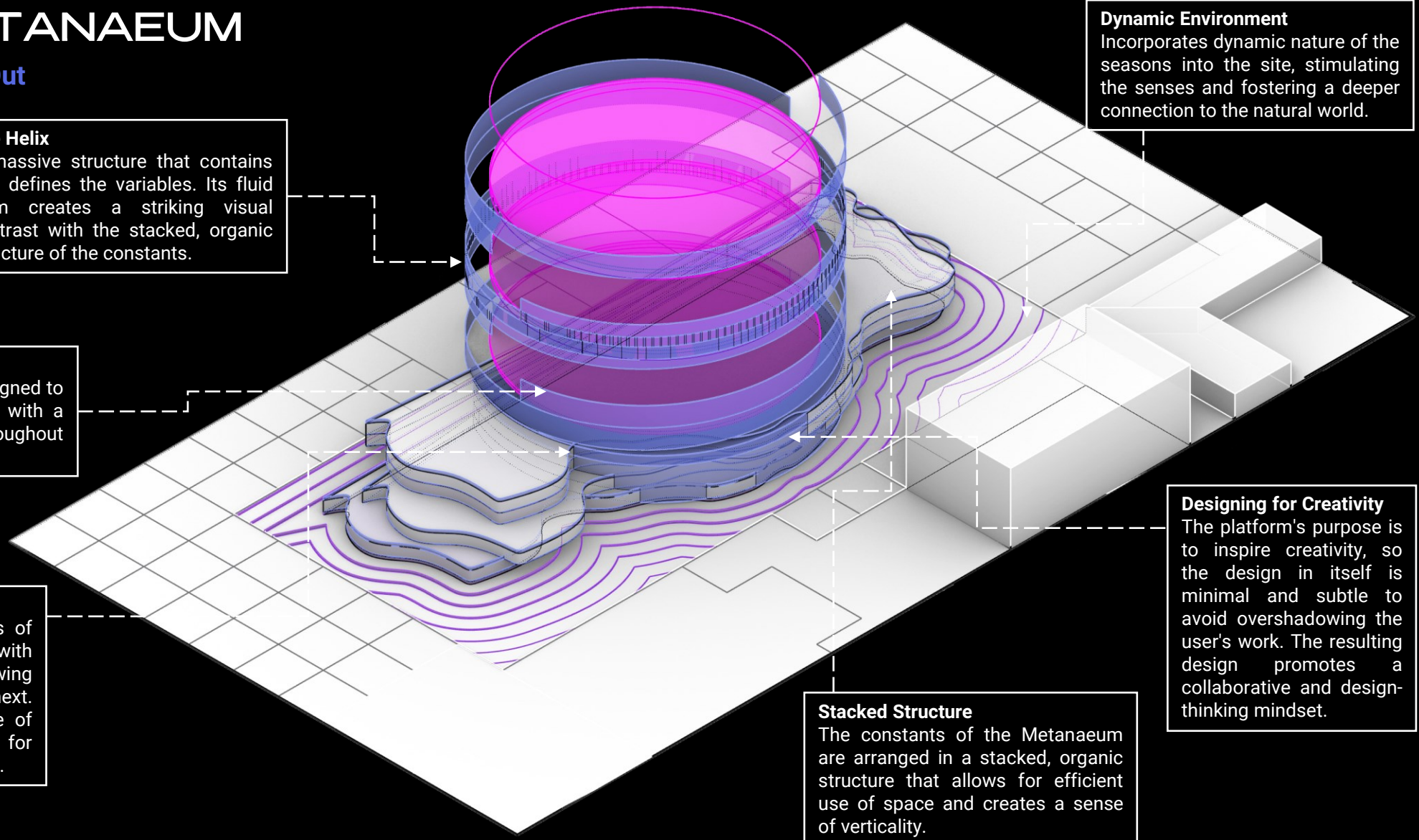
THE METANAEUM

Immersing In / Out

The Helix
A massive structure that contains and defines the variables. Its fluid form creates a striking visual contrast with the stacked, organic structure of the constants.

Fluid Circulation
The circulation is designed to be fluid and intuitive with a seamless flow throughout the structure.

Intersecting Spaces
Designed as a series of intersecting spaces, with each area flowing seamlessly into the next. This creates a sense of continuity and allows for a cohesive experience.

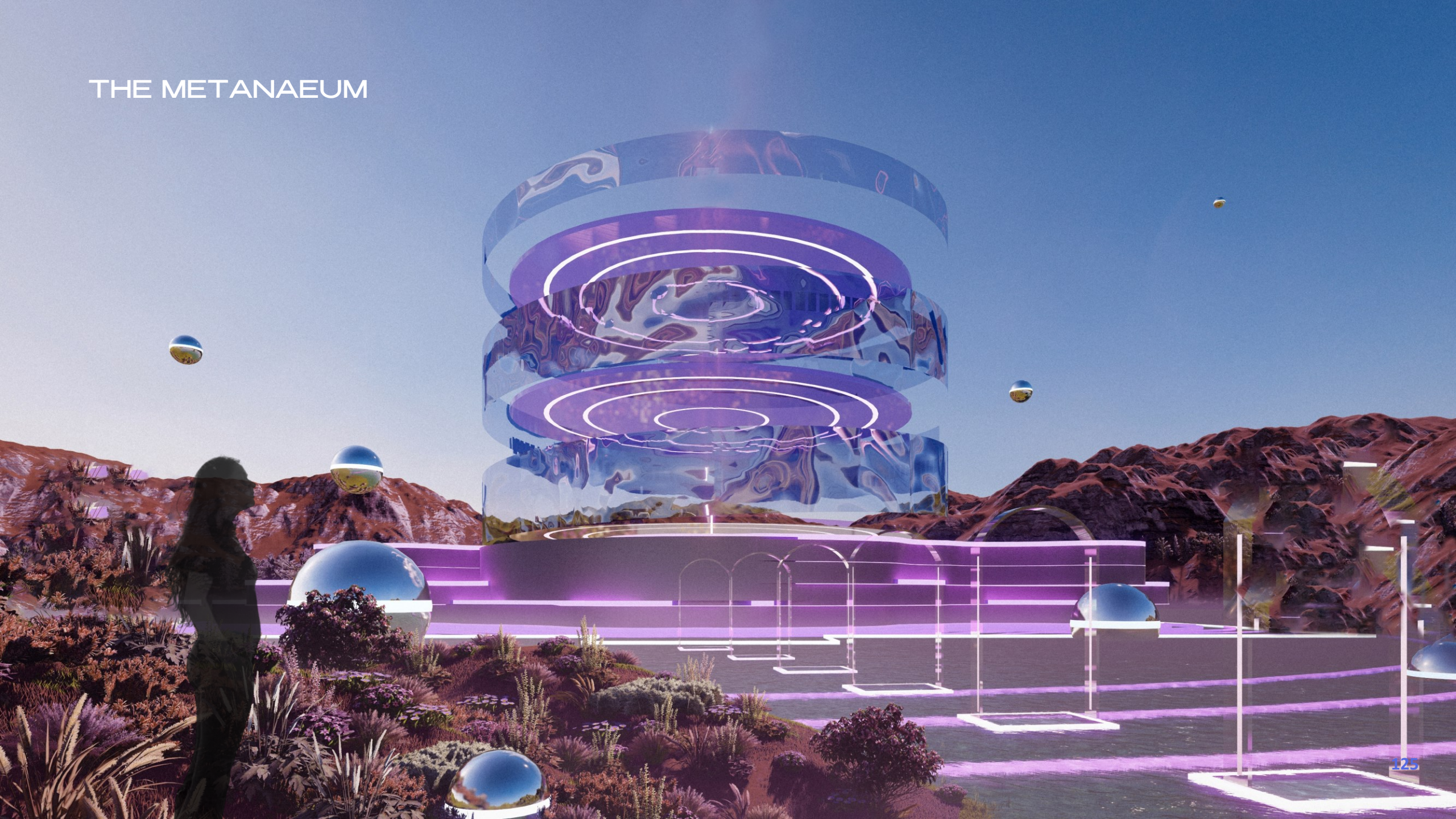


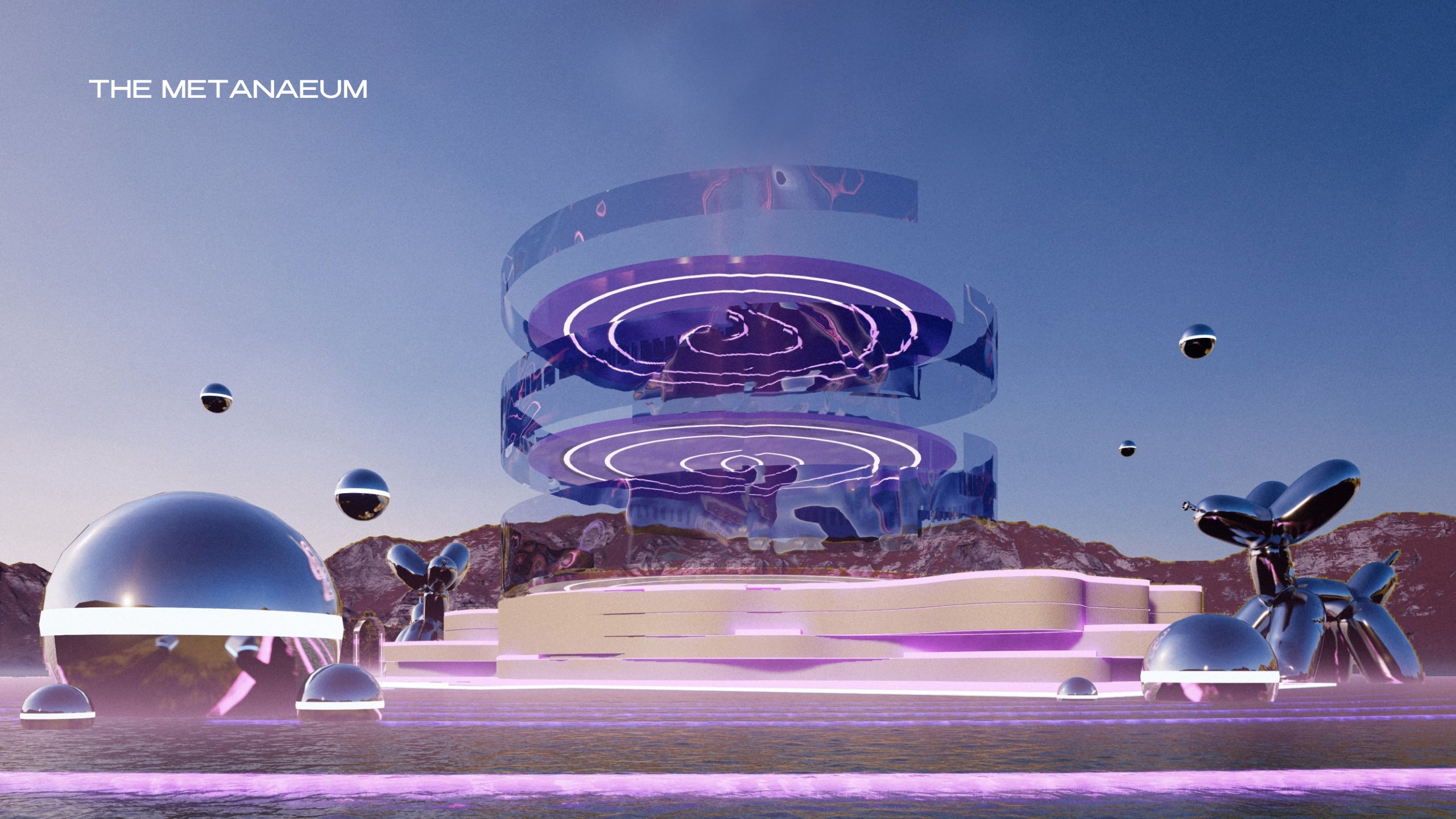
Dynamic Environment
Incorporates dynamic nature of the seasons into the site, stimulating the senses and fostering a deeper connection to the natural world.

Designing for Creativity
The platform's purpose is to inspire creativity, so the design in itself is minimal and subtle to avoid overshadowing the user's work. The resulting design promotes a collaborative and design-thinking mindset.

Stacked Structure
The constants of the Metanaeum are arranged in a stacked, organic structure that allows for efficient use of space and creates a sense of verticality.

THE METANAEUM

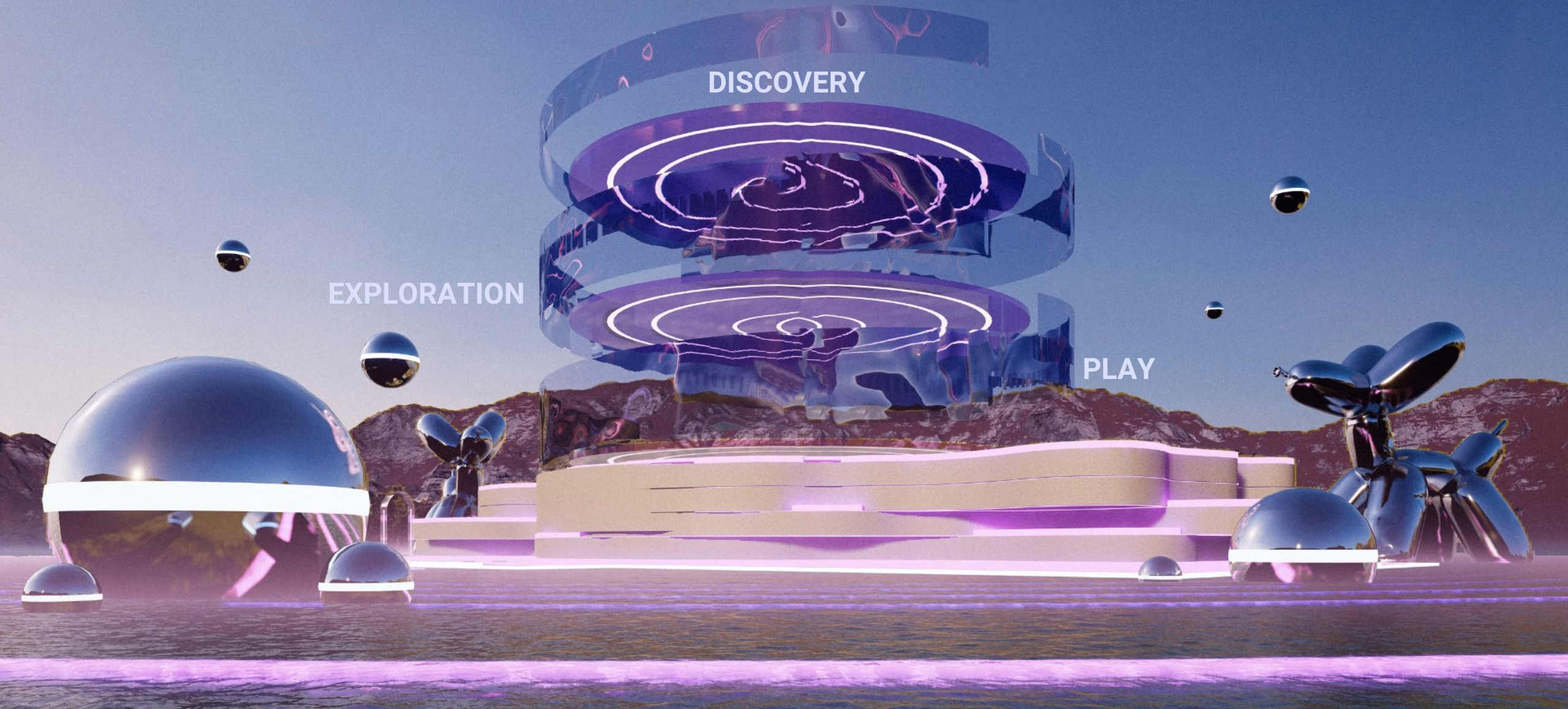



THE METANAEUM


THE METANAEUM

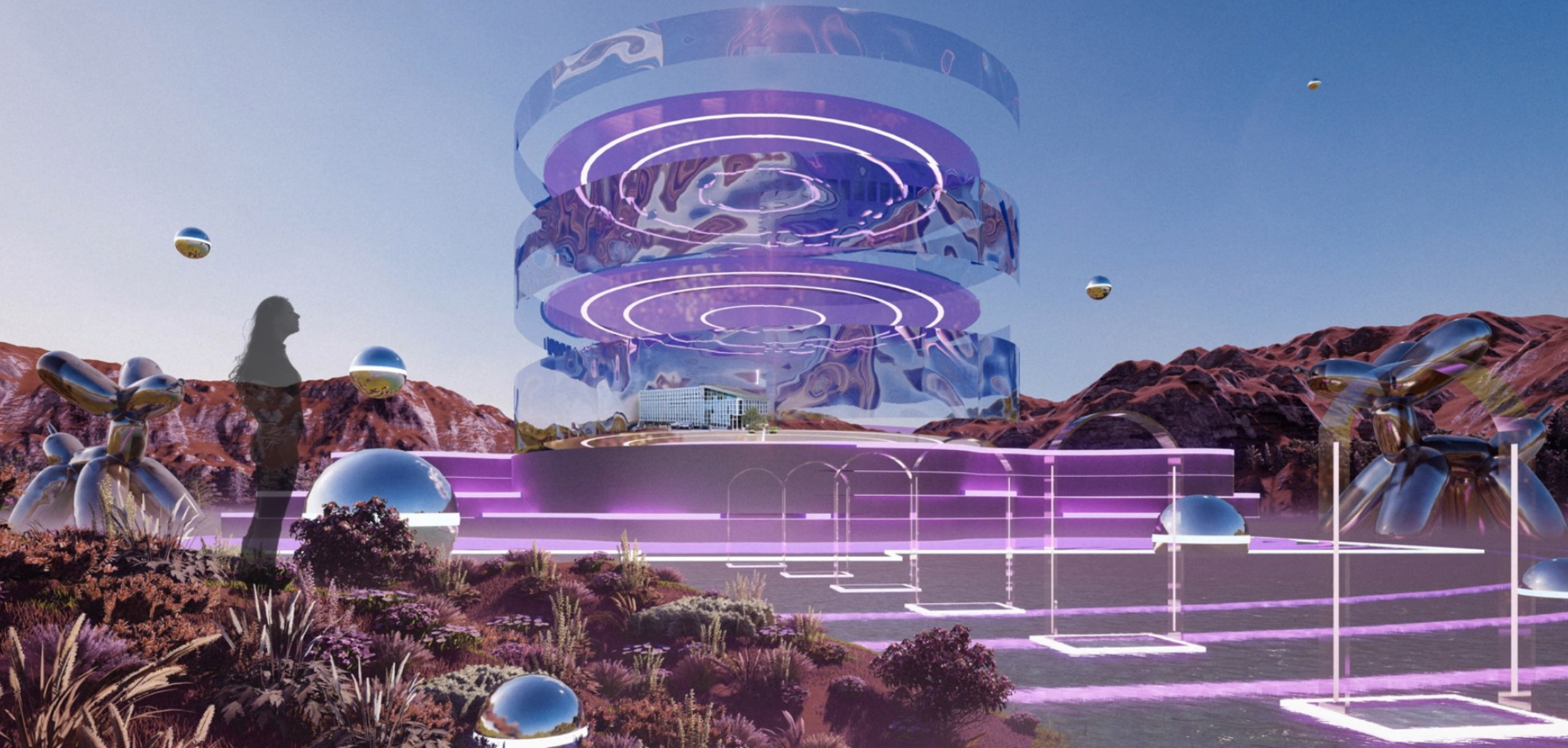
THE METANAEUM

Seasons in the Metanaeum / Transformative Landscape for an Immersive Experience



THE METANAEUM

Exploring the Possibilities: Hypothetical Projects tested by diverse User Personas



THE METANAEUM

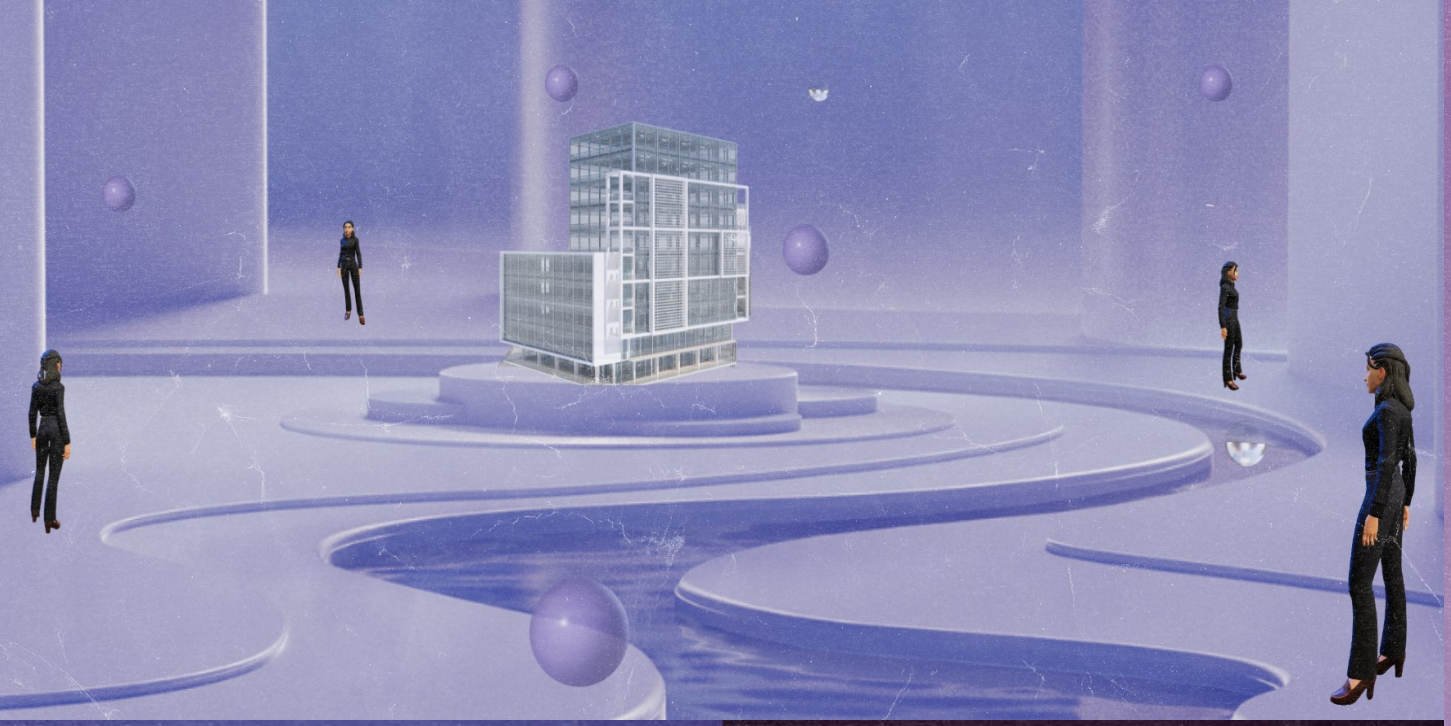

Unleashing Collective Potential / Group Testing Space

Empowering Growth / Resource Centre

Nurturing Ideas, Igniting Success / Business Incubator

Virtual Worlds, Real Experiences / Simulation Spaces

Virtual Worlds, Real Experiences / Testing + Simulation Spaces



Virtual Worlds, Real Experiences /
Testing + Simulation Spaces

Immerse, Experience, Discover / Testing + Simulations

Discovering Artistry and Inspiration / Galleries


Innovate, Create, Transform / Technology Lab

09 / FOUNDATIONS FOR THE METANAEUM:

Requirements and Considerations

TECHNICAL REQUIREMENTS

SECURITY
- Ensure user data security *through* encryption, multi-factor authentication, access controls, and security audits.

COMPATIBILITY
- Compatible with diverse systems, devices, and software *through* standard protocols, interfaces, and compatibility testing.

RELIABILITY
- Ensure high uptime and reliability *through* redundant systems, failover mechanisms, and proactive monitoring/maintenance.

SCALABILITY
- Scale up or down as needed, to *accommodate* changing demand and user needs.

PERFORMANCE
- Deliver high performance/low latency *through* optimized architecture, caching/CDNs, and hardware acceleration.

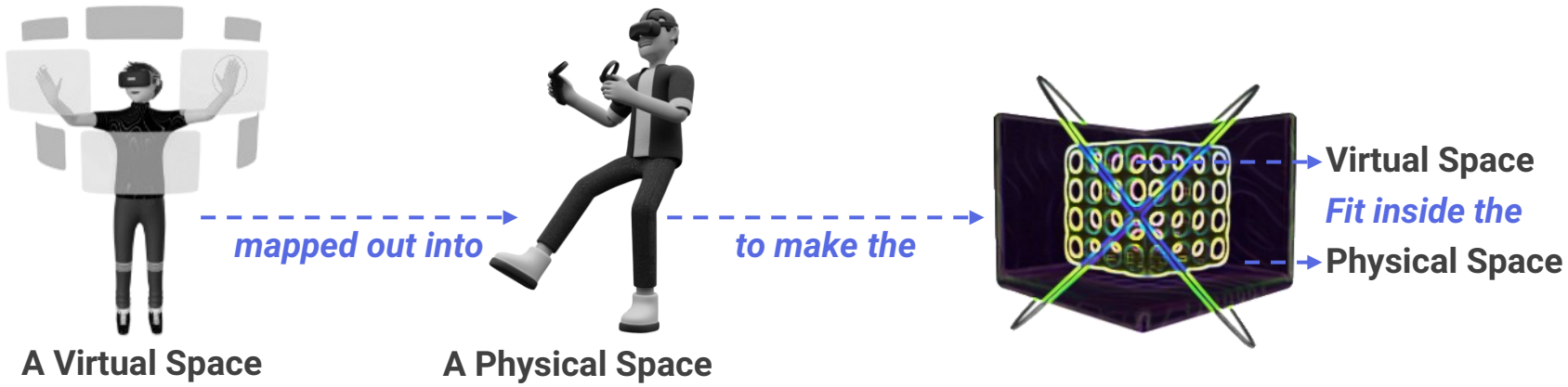
LIGHTING + AUDIO VISUALS
- Support adjustable lighting, sound, AV presentation, and accurate design rendering *through* real-time lighting engines, spatial audio, video integrations, and customizable rendering algorithms.

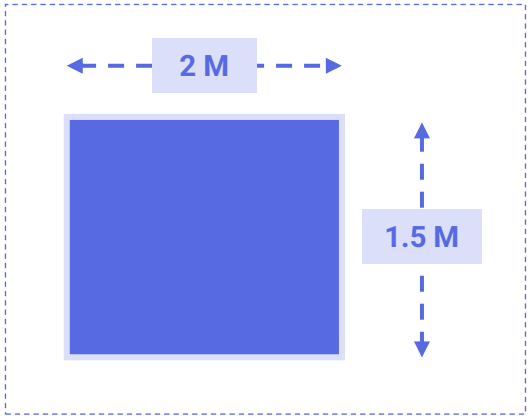
HARDWARE
- Run on various hardware devices (computers, mobile, VR headsets) *through* cross-platform tools/frameworks and device-specific optimization.

SPATIAL REQUIREMENTS

In the Real World

To achieve a realistic and comfortable VR experience, the right amount of space is essential.





Minimum Requirement
2 x 1.5 M
= 3 SQ. M of space

LEGAL / REGULATORY REQUIREMENTS

- The Indian Data Protection Bill, which is currently being developed, may require compliance with data privacy and security standards for handling the personal information of users.
- The Persons with Disabilities Act mandates accessibility requirements for public buildings and services, which may extend to digital platforms as well.
- The Indian Information Technology Act imposes cybersecurity obligations on organizations that handle sensitive information, such as financial data or personally identifiable information.
- The Indian Copyright Act provides for the protection of intellectual property, including architectural designs, and may require obtaining necessary permissions or licenses for their use or reproduction.
- The National Building Code of India provides guidelines and standards for building design, construction, and safety, which may be applicable to digital platforms that involve building simulation or visualization.
- The Environmental Impact Assessment (EIA) process, as per the Indian EIA Notification 2020, is mandatory for any project that falls under its purview. If the platform involves the design and planning of real-world construction projects, compliance with EIA requirements may be necessary.

SUSTAINABILITY

01

ENERGY EFFICIENCY

Metanaeum aims to prioritize energy-efficient hardware and software

- **To minimize energy consumption**
- **Reduce its carbon footprint**
- **Minimize environmental impact**

02

ENVIRONMENTAL IMPACT

Metanaeum hopes to be designed to minimize its overall environmental impact, potentially through the use of

- **Renewable energy sources**
- **Waste reduction**
- **Emissions reduction**

03

SOCIAL RESPONSIBILITY

- **Metanaeum promotes social responsibility and ethical practices in the architecture profession, with a particular focus on diversity, inclusion, and equity.**
- **This can have a positive social impact and ensure the architecture profession benefits a wide range of individuals and communities.**

SENSORY AND SPATIAL EXPERIENCES

The metaverse currently offers robust support for sight and sound, providing users with immersive visual and auditory experiences.

Aspect	Sight Experience	Sound Experience
Perception	Visual elements create a sense of space and depth.	Soundscapes contribute to the perception of the size and ambiance of a space.
Sensory Impact	Visual aesthetics influence emotions and atmosphere.	Acoustic qualities impact mood and immersion within a space.
Focal Points	Eye-catching architectural features guide attention.	Sound sources or focal points influence movement and orientation.
Spatial Awareness	Visual cues help comprehend spatial relationships.	Sound reflections and reverberations aid in perceiving room dimensions.
Wayfinding	Visual landmarks assist in navigation and orientation.	Acoustic cues and echoes can serve as auditory markers for wayfinding.
Atmosphere	Lighting design sets the tone and creates ambiance.	Sound design and acoustics contribute to the atmosphere and character.

However, the development of the metaverse doesn't stop there. The integration of the remaining three senses - smell, touch, and taste - is a matter of when not how.

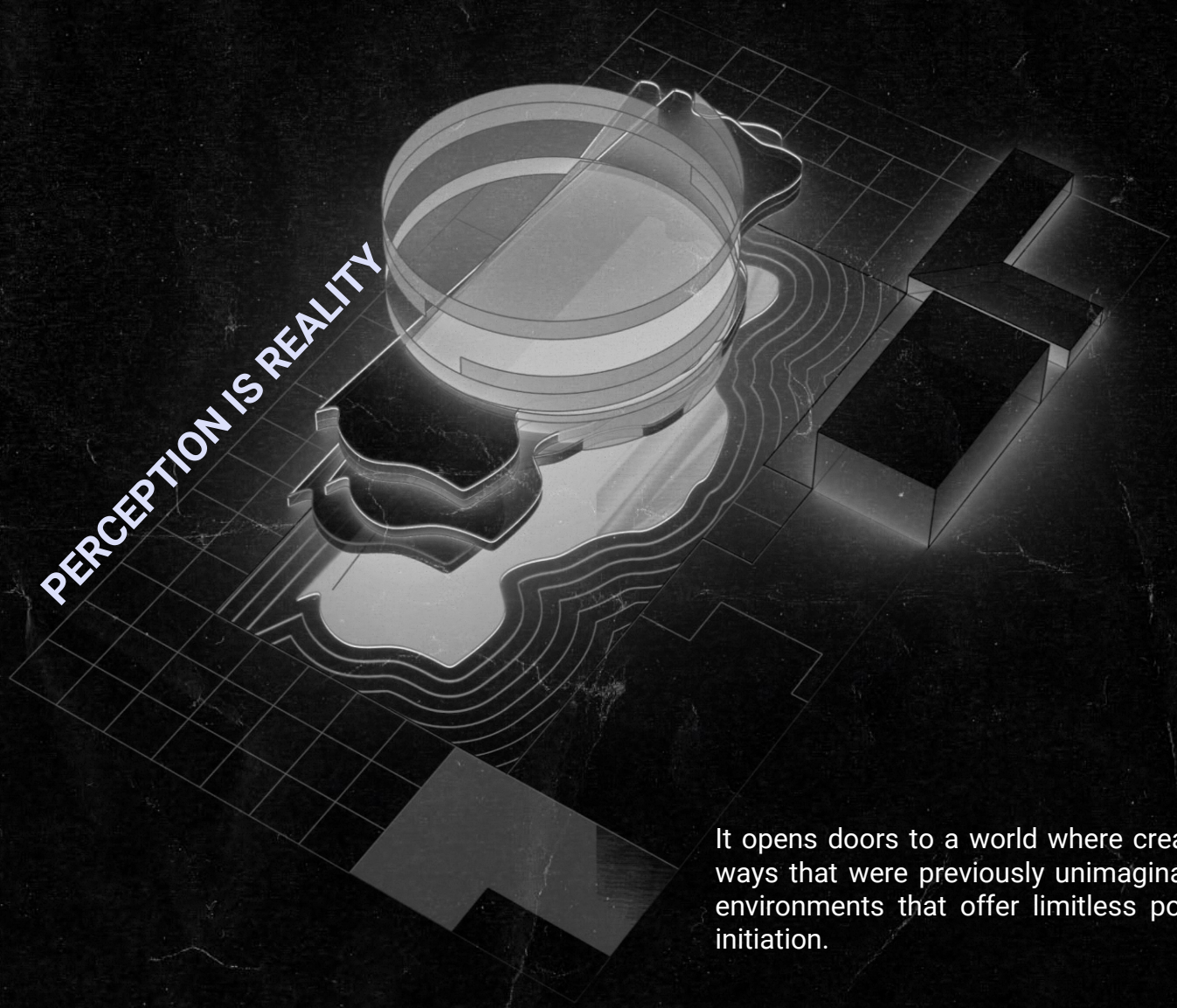
SMELL is being explored through OVR headsets with scent cartridges, simulating scents for a more realistic experience.

TOUCH is addressed through haptic technology, allowing users to feel physical sensations using specialized gloves or suits.

TASTE is being considered through the use of electrolytes to simulate virtual flavors.

While these senses are still under development, the progress made in supporting sight and sound showcases the metaverse's potential for a multi-sensory experience. As technology advances, it's only a matter of time before these additional senses are seamlessly integrated, further enhancing immersion and realism.

WHY METANAEUM IN THE METAVERSE?



"How is it any different from anything else you do through a screen or any other software?"

"Who would want that when you can get the real thing?"

It's not that the future metaverse or the proposed Metanaeum will replace the real world - it's not meant to!

What it's supposed to do is complement it, enhance it, and open up countless doors to new, incredible possibilities and opportunities.

It opens doors to a world where creativity knows no bounds and where imagination can be brought to life in ways that were previously unimaginable. It allows users to transcend physical limitations and explore virtual environments that offer limitless potential. It reduces the cost associated with changes post-construction initiation.

CONCLUSION

Architects have the power to shape a better future by transcending the physical realm and unleashing their imagination.

Empowering architects to unleash their creativity without any constraints and with limitless resources.

Fostering innovation and growth in architecture through collaboration and idea-sharing for a boundless future.

THANK YOU

AADYA GARG / 180BARCH005