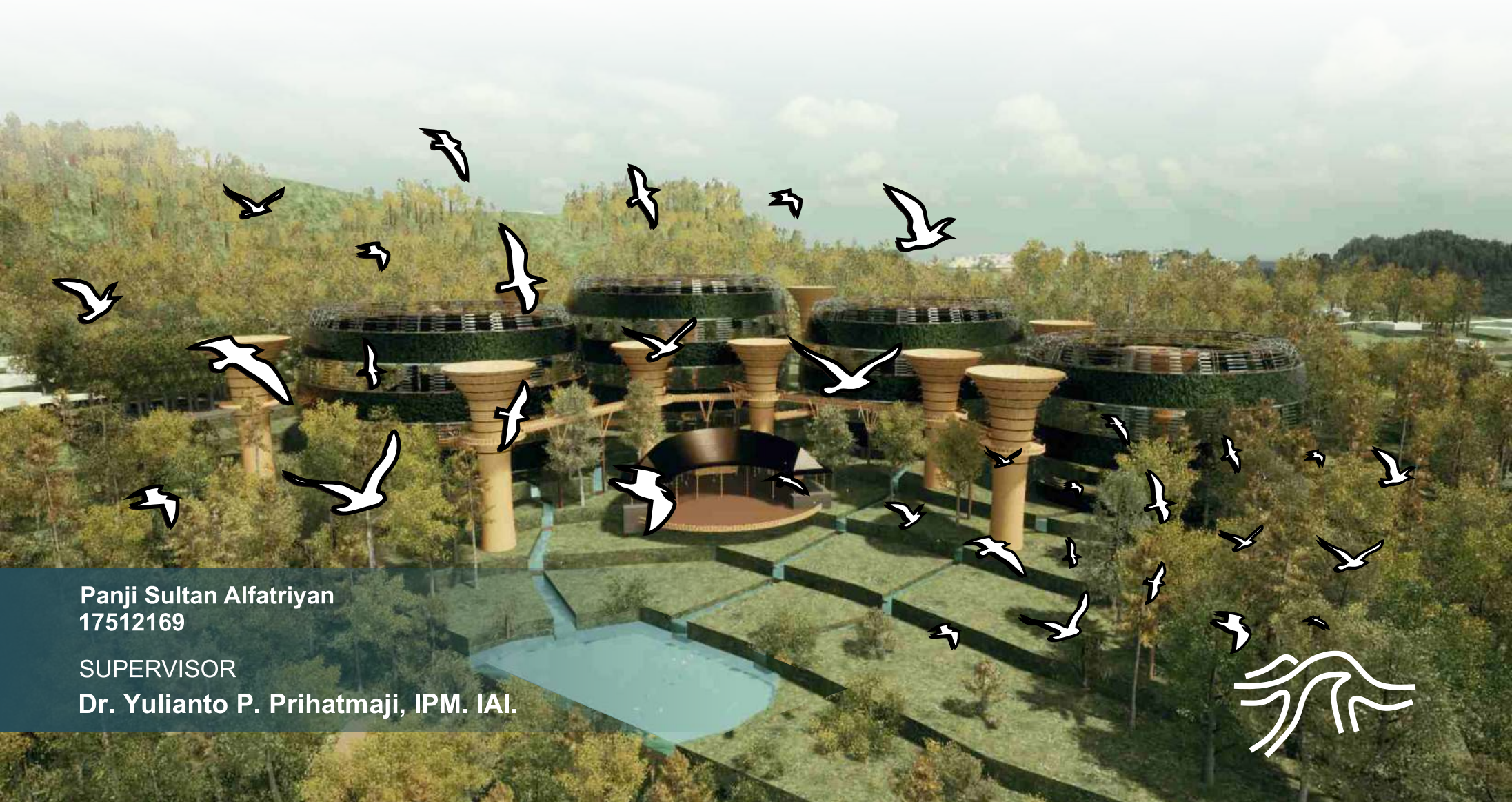


International Undergraduate
Program in Architecture
Final Architectural Design Studio



Design of
Jatimulyo Bird Conservation
in Kulonprogo with Enviromental Behaviour Design Approach



Panji Sultan Alfatriyan
17512169

SUPERVISOR

Dr. Yulianto P. Prihatmaji, IPM. IAI.



DEPARTMENT of
ARCHITECTURE



한국건축학교육인증원
Korea Architectural Accrediting Board



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International Undergraduate Program in Architecture

Final Architectural Design Studio
2021/2022

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Department of Architecture
Faculty of Civil Engineering and Planning
Universitas Islam Indonesia
2021



Validation Page

Final Architectural Design Studio Entitled:

**Design of Jatimulyo Bird Conservation
in Kulonprogo with Enviromental Behaviour Design Approach**

Student's Full Name : **Panji Sultan Alfatriyan**

Student's Number : **17512169**

Has been evaluated and agreed on : Yogyakarta, 23 November 2022

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Final Architectural Design Studio Entitled:

Design of Jatimulyo Bird Conservation in Kulonprogo with Enviromental Behaviour Design Approach

Student's Full Name : **Panji Sultan Alfatriyan**
Student's Number : **17512169**
Design Report Quality of FADS : ~~Average~~ / ~~Good~~ / **Excellent *** circle one

With the result of that, this product is

Recommended / ~~Not Recommended *~~ circle one

To be a reference for Final Architectural Design Studio

Yogyakarta, 22 December 2022

Supervisor

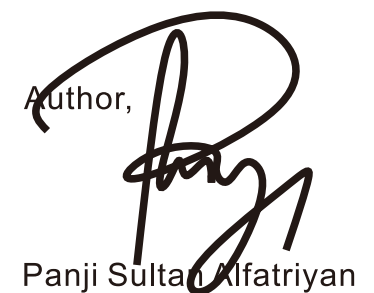
Dr. Yulianto P. Prihatmaji, S.T., M.T., IPM., IAI.

Foreword

Praise and gratitude I pray for the presence of Allah SWT, author was able to complete the Final Architectural Design Studio Project entitled “Design of Conservation House for Turtle in Goa Cemara, Sanden, Bantul with Ecological Approach” up to this stage.

The process of preparing this thesis certainly cannot be separated from the help and support from various parties. Therefore, on this occasion the researcher would like to express his gratitude to:

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11. All my Architecture 2017 who I cannot mention one by one, for the memories we made.
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Statement of Authenticity

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Author,



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DESIGN PREMISE

Indonesia is a large country with biodiversity, ranging from flora to fauna spread in almost all regions. we can find millions of fauna around us , one of kind is birds, animals that highly populated . BirdLife International notes that Indonesia is home to at least 17% of the world's bird species population. based on endemism, Indonesia is in position 1 which has the most endemic bird species in the world. with a total of 1,812 species. Despite highly populated bird species, Indonesia also has a bunch of threatened bird. Based on their threatened status, there are 179 bird species in Indonesia which are included in the list of globally threatened bird species.

Birds have an important role in the ecosystem, as pollinators, seed dispersers and ecosystem controllers. The bird life cycle which is sensitive to any changes in habitat is an indicator of biodiversity and environmental health. The existence of birds in natural habitats is necessary learned and maintained in order bird preservation Jatimulyo Village, located in the Menoreh hills area Kulon Progo, Yogyakarta is a village that has the potential for diversity of fauna and flora . This village has an important role in contributing to the diversity of Yogyakarta's bird species. Jatimulyo Village deserves to be a nature reserve or special protection area and an edu tourism. In other hand is to raise the awareness society about the important role of bird for environment balance. The Design of bird reserve use environmental behavioural approach to well adapt the nature and comfort the bird while living in this sanctuary

Keyword: Biodiversity, Ecosystem, Bird Preservation

CHAPTER 01

INTRODUCTION



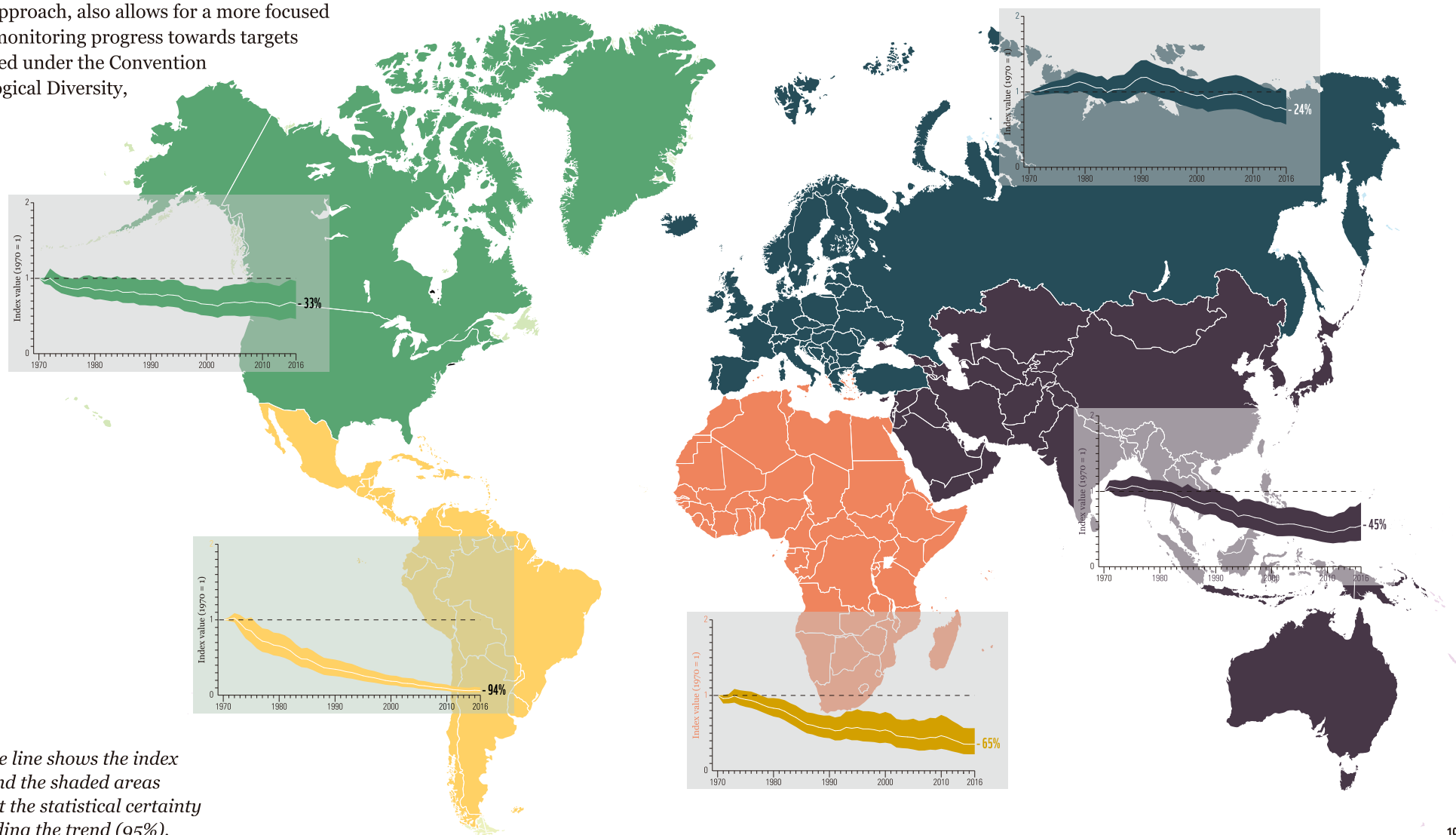
Background

ISSUE

Biodiversity is declining at different rates in different places

The global LPI does not give us the entire picture – there are differences in abundance trends between regions, with the largest declines in tropical areas.

In 2019, the landmark IPBES global assessment on the state of biodiversity divided the world into different geographic regions (Figure 3) in order to complete regular and timely assessments of biodiversity, ecosystem services, their linkages, threats, and the impacts of these at regional and sub-regional levels¹. Using a smaller spatial scale of regions and sub-regions, rather than a global approach, also allows for a more focused way of monitoring progress towards targets developed under the Convention on Biological Diversity,



The white line shows the index values and the shaded areas represent the statistical certainty surrounding the trend (95%). All indices are weighted by species richness, giving species-rich taxonomic groups in terrestrial and freshwater systems more weight than groups with fewer species. Source - WWF/ZSL (2020)¹⁰⁷.

figure 1.1 : The Living Planet Index each Region 1970 to 2016
Source : WWF Living planet index Biodiversity Lost Report 2020

Threats to biodiversity

Changes in land and sea use, including habitat loss and degradation



This refers to the modification of the environment where a species lives, by complete removal, fragmentation or reduction in quality of key habitat. Common changes in use are caused by unsustainable agriculture, logging, transportation, residential or commercial development, energy production and mining. For freshwater habitats, fragmentation of rivers and streams and abstraction of water are common threats.

Species overexploitation



There are both direct and indirect forms of overexploitation. Direct overexploitation refers to unsustainable hunting and poaching or harvesting, whether for subsistence or for trade. Indirect overexploitation occurs when non-target species are killed unintentionally, for example as bycatch in fisheries.

Invasive species and disease



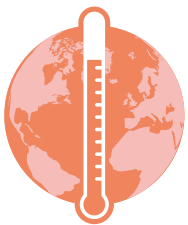
Invasive species can compete with native species for space, food and other resources, can turn out to be a predator for native species, or spread diseases that were not previously present in the environment. Humans also transport new diseases from one area of the globe to another.

Pollution



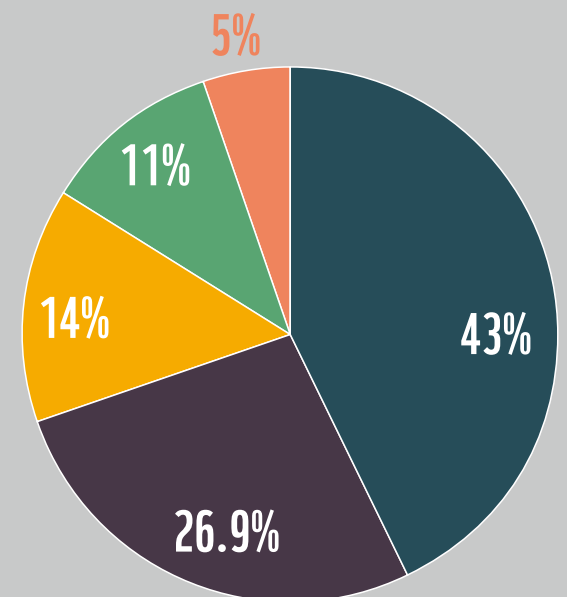
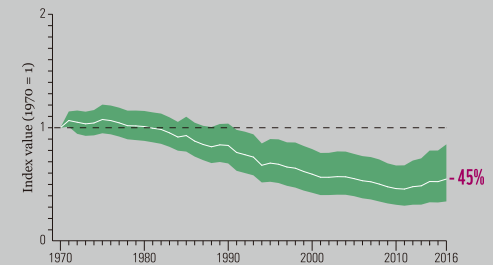
Pollution can directly affect a species by making the environment unsuitable for its survival (this is what happens, for example, in the case of an oil spill). It can also affect a species indirectly, by affecting food availability or reproductive performance, thus reducing population numbers over time.

Climate change



As temperatures change, some species will need to adapt by shifting their range to track a suitable climate. The effects of climate change on species are often indirect. Changes in temperature can confound the signals that trigger seasonal events such as migration and reproduction, causing these events to happen at the wrong time (for example misaligning reproduction and the period of greater food availability in a specific habitat).

ASIA PACIFIC



From the data above in the asia data show that species over exploitation became top 2 cause of biodiversity loss

Figure 1.2 : The proportion of threats recorded in each category for populations in each IPBES region
Source : WWF Living planet Biodiversity Report 2020



BIODIVERSITY PRESERVATION

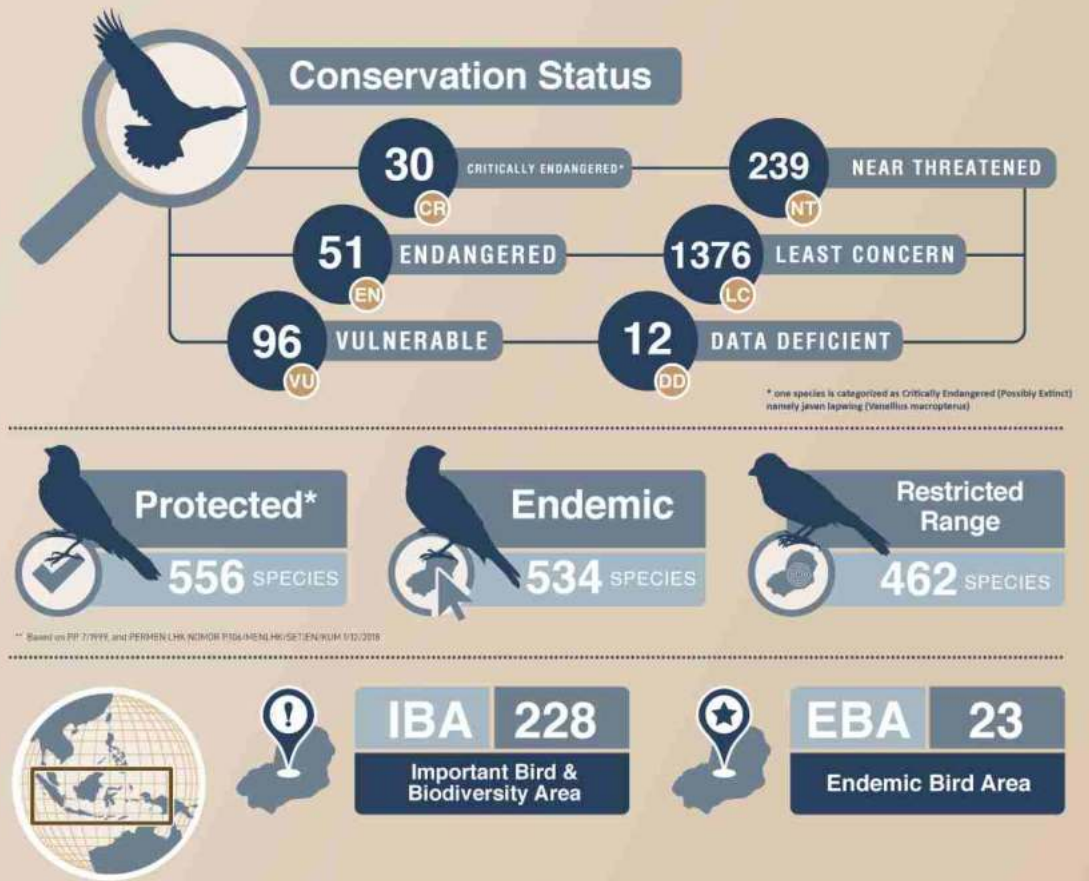
Currently, the topic of the importance of environmental preservation is heating up again along with the more incessant discussion about the phenomenon of global warming. When it comes to environmental conservation, the topic that is commonly discussed is the reforestation movement or the tree planting movement.

However, there is another thing that is very important but rarely mentioned, namely the preservation of biodiversity. The designation of 2010 as the International Year of Biodiversity by the United Nations clearly indicates that biodiversity has an important role for life on Earth. As for evolution and for maintaining sustainable living systems in the biosphere.

The determination is also based on the state of biodiversity which is increasingly threatened due to various problems that have a negative impact on the environment, namely breaking the chain of natural ecosystems of living things. And explained that the conservation of biodiversity is a common concern of all mankind. And one part in the context of preserving biological diversity is the preservation of protected animals or animals.

Figure 1.3 : Jatimulyo Waterfall
Source : Author

THE STATE OF INDONESIA'S BIRDS 2022



BIRD PRESERVATION

Birds are one of Indonesia's biological wealth. Based on 2022 data, Indonesia has 1818 bird species, 17% of the world's bird species.

Birds have an important role in the ecosystem. Birds as one part in the food chain process, occupy most of the trophic levels in the food pyramid. Birds get food from various sources, ranging from plants, insects, and the flesh of mammals, reptiles to fish. Birds with their eggs also become prey for other animals. The presence of birds in their habitat functions as pollinators, seed dispersers, and ecosystem controllers (Begazo, 2018). The life cycle is sensitive to changes in habitat, making birds act as indicators of biodiversity and environmental health (Gregory et al., 2003; Soendjoto and Gunawan, 2003; Begazo, 2018). In addition to playing an ecological role, birds also have conservation, economic and tourism values (Sekercioğlu, 2002; Tamnge, 2013).

Birds, in some places have been used for educational facilities conservation through the introduction and direct observation of birds in their habitat (Birdwatching). The important role of birds covers many aspects, but hunting continues in several parts of Indonesia.

Figure 1.4 : The State of Indonesia's Bird 2022
Source : www.burung.org

Context Site

ISSUE



Conservation Village ?

Bird conservation in Indonesia is currently still focused on conservation areas such as Nature Reserves, Wildlife Sanctuaries, and National Parks. Bird conservation outside the conservation area is still minimal. One of the conservation efforts that have been carried out outside the conservation area is located in Jatimulyo Village

Jatimulyo Village, located in the Menoreh hills area Kulon Progo, Yogyakarta is a village that has the potential for diversity of fauna and flora as well as extraordinary natural potential. Jatimulyo village, has an important role in contributing to the richness of Yogyakarta's bird species. Until 2015, there have been 81 bird species or about 24% of the total DIV birds. Of these, there are 13 endemic species, 21 protected species of birds and one endangered bird. updated data in 2020 there are 105 species of bird

Jatimulyo Village is a tourism village based on bird conservation. Jatimulyo Village since 2008 has been pioneered as a tourist village. In early 2008, various nature conservation-based activities were held in this village, from gowa trekking to bird watching using local guides.

Figure 1.5 : Jatimulyo village
Source : Author

Illegal Hunt

in 2014 the village government issued Per-Des regulation No 082014 concerning the preservation of the environment, one of which is the prohibition on hunting birds (Zebua, 2018). Research on bird communities and Bird conservation has never been done in Jatimulyo Village. Therefore, research on community structure and bird conservation efforts needs to be done in Jatimulyo Village, Kec. Girimulyo, Kab. Kulon Progo, DIY.

Even though there is already a village regulation that one of the articles prohibits hunting bird. Mufti, et al (2020) there are still cases of hunting birds. The case of the highest bird hunting in the span of more than 2 years ago. In general, cases of bird hunting have experienced a downward trend, since 2-3 years ago. The majority of bird hunters come from people outside Jatimulyo with a percentage of 57.4%. However, it seems that there are still bird hunters who come from the local of Jatimulyo themselves with a percentage of 29.8%.

The Wildlife Conservation Society (WCS) reports that 80% of the birds traded in the market are hunted from nature. One hundred and sixty-eight bird species that are threatened with extinction in the wild as a result of hunting, buying and selling and maintenance.

There are 14 species of birds that are hunted, namely red anis (*Geokichla citrina*), partridge (*Gallus sp*), honey birds (*Nectarinidae*), cipoh Kacat (*Aegithina tiphia*), leaf cica (*Chloropsis cochinchinensis*), bido-snake eagle (*Chloropsis cochinchinensis*). *Spilornis cheela*), empuloh beard (*Alophoixus bres*), java sparrow (*Lonchura oryzivora*), black-necked kepudang (*Oriolus chinensis*), cucak finches (*Pycnonotus aurigaster*), merbah cerukcuk (*Pycnonotus goiavier*), perenjak/cinene, and glasses (*Sylviidae*). (*Zosteropidae*). The type most hunted is the worm brush or the distillate. This is because worm brushes have a relatively expensive price when sold, with a price of ± Rp. 750.000,-.

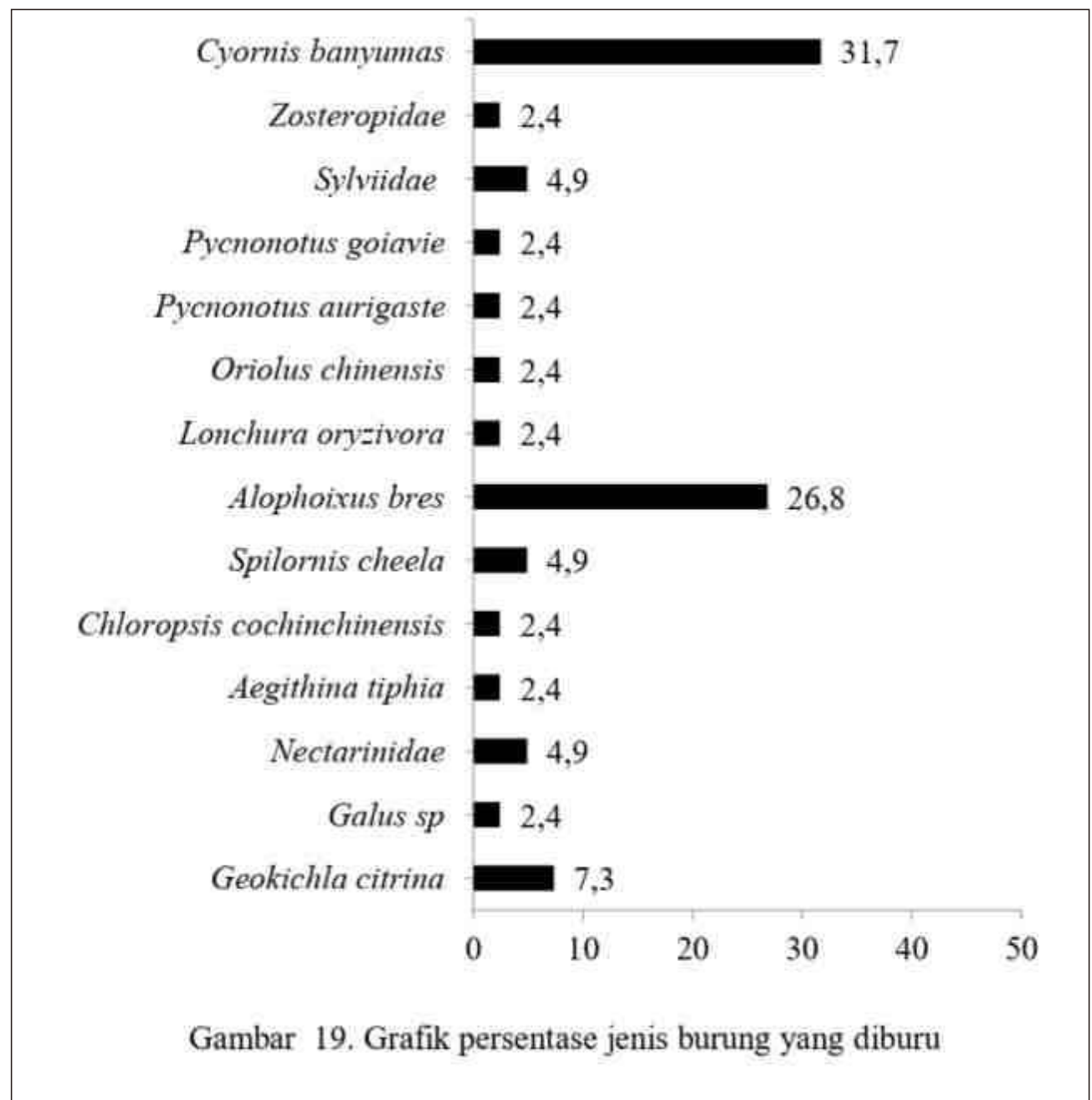


Figure 1.6 : graph of the percentage of the most frequently hunted bird species
Source : Faradina Mufti

Based on Table 1.1. Community knowledge about the role of birds, it shows that the people of Jatimulyo village know the role or function of birds. This is evidenced by the answer in the line at point A with a percentage of 100% Knowledge about the role or function of birds for society is generally divided into 2, namely: ecological values and artistic values. This is indicated by the various respondents' answers, which have ecological value, for example: birds as pest exterminators, seed dispersers, mouse eaters, etc.

The answer of birds having an ecological function has a percentage of 94%, while the answers of birds have artistic appeal with a percentage of 6%. Sources of knowledge of the role of birds are generally divided into 4, personal experience, from friends, from generation to generation (parents) and others. The highest answer source of knowledge comes from friends with a percentage of 40%. This matter

Table 1.1 : Society knowledge About Role of bird

Tabel 9. Pengetahuan masyarakat tentang peranan burung.

No	Pengetahuan	Persentase
A	Mengetahui burung mempunyai peran atau fungsi	100
B	Fungsi burung bagi kehidupan masyarakat Desa Jatimulyo	
1	Mengetahui fungsi burung secara ekologi	94
2	Mengetahui burung sebagai daya tarik seni	6
C	Mendapat pengetahuan peranan burung	
1	Pengalaman pribadi	38
2	Teman	40
3	Turun temurun	17
4	Lain lain (dari suami, papan baliho dll)	4
D	Burung tetap di alam	100,0

Source : STRUKTUR KOMUNITAS DAN UPAYA KONSERVASIBURUNG DI DESA JATIMULYO, KULON PROGO,D.I.Y by Faradlina mufti

Based on Table 1.2 . Knowledge of bird hunting,shows that at point A respondents answered 14.9% who hador used to hunt birds. Point B shows that there has been a casebird hunting in Jatimulyo Village. Point C shows the hunting casehighest in the span of more than 2 years ago.

In general experiencetrend (tendency) decreased, since 2/3 years ago. Point D showsThe highest bird hunters come from residents outside Jatimulyo Village withpercentage of 57.4%, but there are still bird hunters fromJatimulyo Village residents with a percentage of 29.8%

Table 1.2 : knowledge about the bird poaching

No	Pengetahuan	Persentase
A	Bapak/Ibu pernah/biasa berburu burung	14,9
B	Bapak/Ibu pernah melihat atau mendengar kasus perburuan burung di Desa Jatimulyo	85,1
C	Rentang waktu kasus perburuan	
1.	lebih dari 2 tahun lalu	57,4
2.	1-2 tahun lalu	23,4
3.	0-1 tahun	19,1
D	Asal pemburu burung	
1.	Penduduk luar desa	57,4
2.	Penduduk setempat	29,8
3.	Lainya/ tidak tahu	12,8

Source : STRUKTUR KOMUNITAS DAN UPAYA KONSERVASIBURUNG DI DESA JATIMULYO, KULON PROGO,D.I.Y by Faradlina mufti

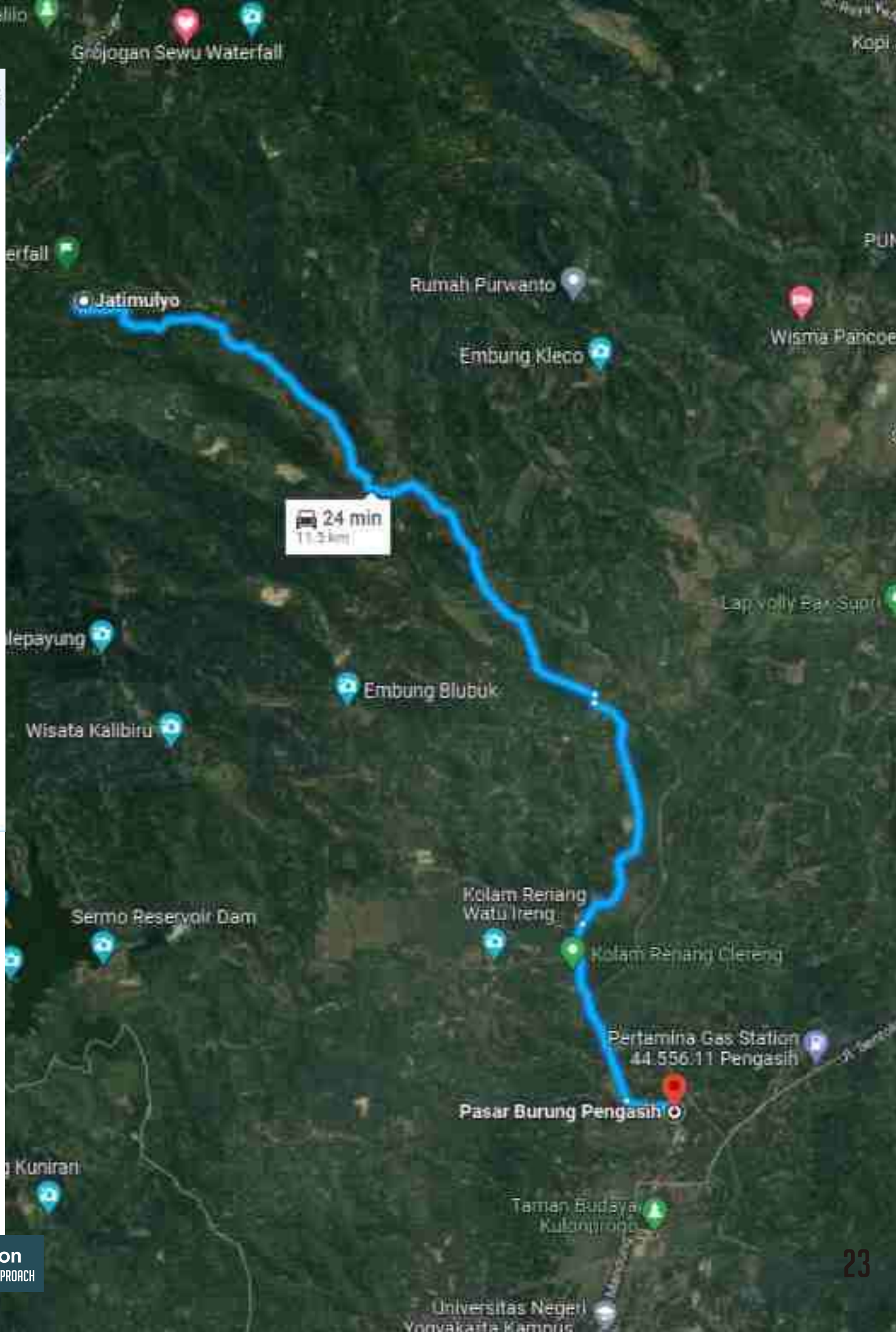


from poaching data of jatimulyo 29.8% was come from local people at the demographic data of jatimulyo show unemployment people reach 12.87% and people who had a job about 64%

when jobless people find out price of the bird of jatimulyo reach five hundred untill a milion rupiah it can attract them to have illegal trade

Figure 1.7 : Demographic of Jatimulyo People
Source : Lokadata.com

Figure 1.8 : Route from Jatimulyo to Bird market
Source : Googlemaps.com



Problem Solving

METHODE

Problem Framework

Background

Indonesia is home of 17% world Species

Also had 179 threatened Species

29% of Biodiversity Loss Caused By Species over exploitation

Jatimulyo forest home of 105 bird species

Issue

LACK OF AWARENESS

MINIM OF INCOME

ILLEGAL HUNT

Raise of threatened Species

Disruption foodchain

Loss Pollinator

Biodiversity Loss

General Problem

- | How to design sanctuary bird reserve as an conservation and rehabilitation centre for bird in jatimulyo based on their standar need
- | How to design base on need of sanctuary reserve management in process bird rehabilitation within the building itself and in the arrangement of its outer space.
- | How to fullfill need of the education function for a public people about the role of the bird

Specific Problem

- | How to design spatial layout boundary interaction between a bird and the visitor of sanctuary reserve
- | How to design a well natural shelter for a bird
- | How to design sanctuary reserve with a water concervation due to fullfill waterfresh need in the dry season
- | How to design Sanctuary reserve with disaster ressilience

Figure 1.9 : Problem Framework
Source : Author

Design Goals

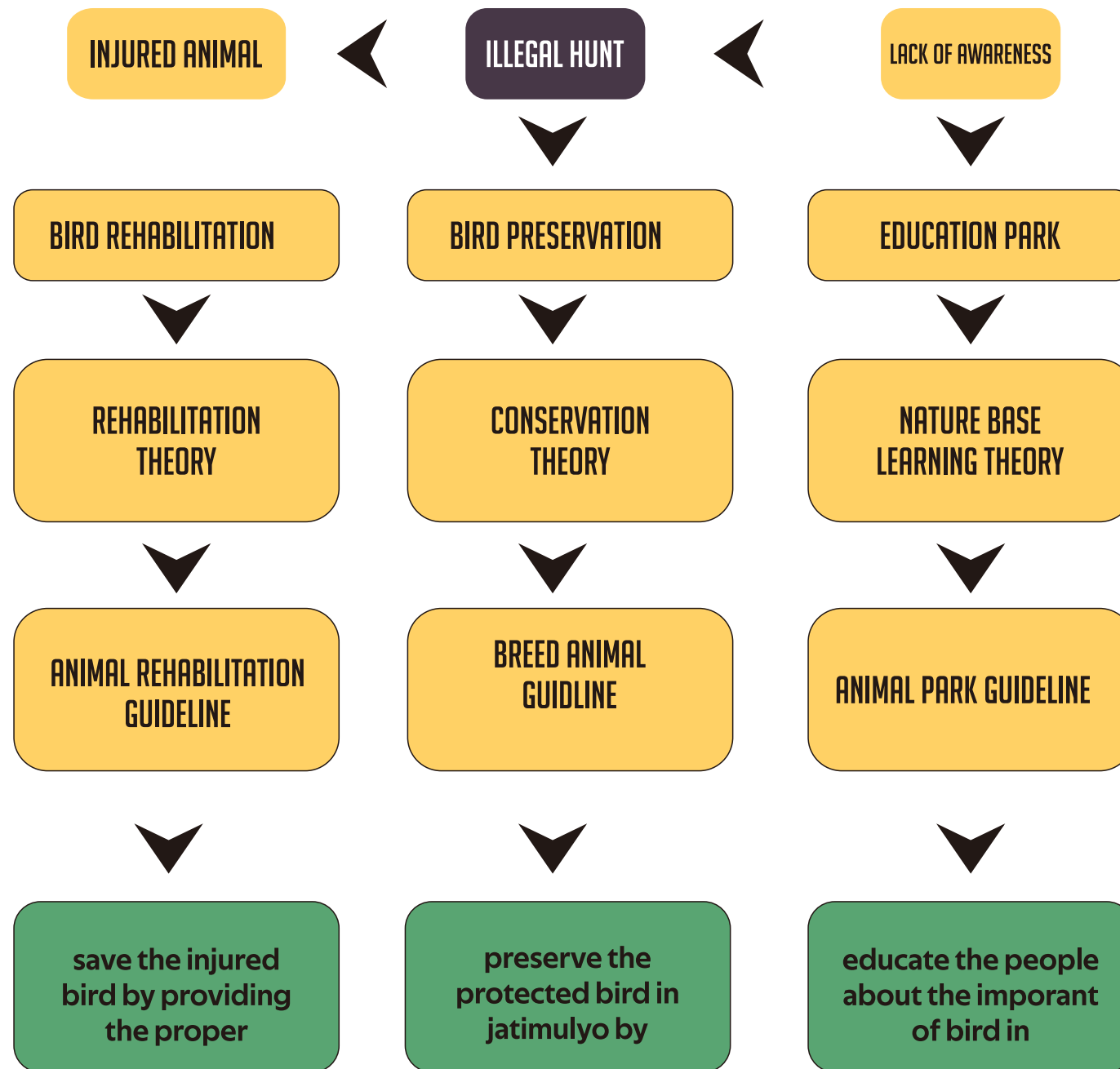
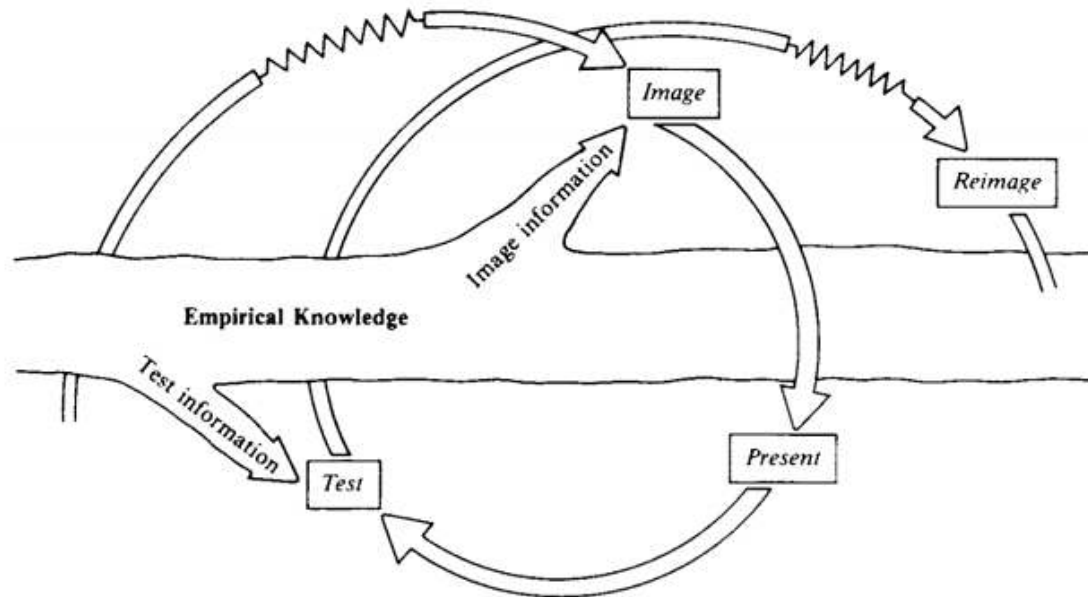


Figure 1.10 : Design Goal
Source : Author

Design Methode



Design Method is stepsteps used in the design. It is basically divided into knowledge aspects and technical aspects. In doing the design used several methods that complement each other.

The design process was developed John Seizel. where the design process is a continuous iterative process (Cylical/Spiral). John Seizel's Design Process model is widely used as a design process because this design model tends not to limit problems so that later designs tend to be maximal. In carrying out the Design Process, the first thing is to know for sure what lies behind the presence of a design object. so that the design object is present because it is considered appropriate in answering the issues raised. From the identification of the background of the problem, an idea will emerge which consists of 3 aspects, namely, the Design Object, the Design Theme, and the location.

Various criteria were selected using the re-image method by John Zeisel, which concentrates more on the environment and the interactions between behaviors

According to Zeisel, the design has three main steps, namely:
imaging, which is offering something new providing criteria such as whether the future architecture,
presenting, in the form of the results of the criteria applied to the design,
testing, in the form of an evaluation of the design that has been produced based on the criteria. All of which is done based on empirical knowledge (based on existing data).

from the 3 aspects that become ideas in the Design Process, it is necessary to develop insight which is the First Phase regarding these three aspects. with stages:

1. Understand and examine the depth and meaning of objects through typological and comparative studies
2. Understanding and reviewing Design Themes related to comparative studies
3. Conducting site and site studies supported by various analyzes

after the first phase, then the second phase known as the (Image-Present-Test cycle) as a creative process to generate design ideas in the form of sketches of ideas for the design object with various studies that are considered by the designer after being evaluated. The Design process continues in a process called Re-Imaging, Re-Presenting-Re-Testing and re-evaluation until it reaches desired criteria have been achieved, which is called Decision To Stop.

Figure 1.11 : Design Framework
 Source : Inquiry By Design john zeisel

Problem Statement

Identifying micro macro-production problems and site conditions, as a consideration for system development and determination of the initial design theme. Formulate problems or issues that are non-architectural or architectural and determine goals and objectives

Collection of Data

Identifying the problems to be resolved, supported by primary and secondary data, namely: Primary data, observations made in the form of the latest physical building data. The data obtained are the conditions of the design area, site boundaries, patterns and systems of activity movement. Secondary data, secondary data collection with literature study to get reference through journals and precedents that will be used as a reference for existing problems. Secondary data is in the form of consideration of similar studies that have applied and implemented space flexibility theories and creative hub design.

Data Analysis

1. Analysis of the Animal Preservation
2. Analysis of the Animal Rehabilitation
3. Analysis of the Behaviour approach
4. Site regulation analysis
5. Site analysis for the existing condition and climate
Analysis of theoretical and typological studies (precedent)

Program

As the direction of problem mapping and processing of data that have been found and problem identification, as well as consideration of determining the design of the concept direction that will be used in the next design method scheme to form a conservation that follows the typology, design approach and challenges to design such as; Spatial arrangement, space programming, Building mass, landscape and structure.

The design concept is a strategy the writer uses in the basis for solving problems and considering design recommendations as outlined in a description by the author as well as a sketch or scheme

able to be understood and support the arguments description that has been described in order to answer the challenges that have been formed in the form of how to create a creative hub that can accommodate various kinds of creative activities on limited land.

Design Development

The stages of the design process that answer the analysis of problems, data and programs. Development also adapts to the design concept as a strategy in determining the schematic design.

Design Evaluation

The initial design is then evaluated to find out whether the quality of the design is good and whether it can answer the specific problems formulated. The design evaluation process was carried out by means of a variable and parameter checklist of the achievement of creative hub typology and space flexibility.

- The design test or evaluation related to the typology has the objective of proving that the design has met the existing site regulations and the spatial program in the form of any creative activities that are accommodated in this creative hub.
- Test or evaluate the design related to the design approach that the design has applied any space flexibility in meeting design challenges to achieve various kinds of creative community activities in limited space, by using movable space flexibility, transformable flexibility, adaptable space flexibility, universal space flexibility or responsive space flexibility.
- The design test or evaluation related to building envelope to reach the user convenience for optimal use on daylighting

Final Design

After a design evaluation is carried out, then the design is developed further and in detail. This process is the final stage of design, refinement related to details so that all aspects of the building are more displayed.

Centre for Eagle reserve and Concervation on merapi

Writer : Tomi Saputro
 Instantion : islamic Indonesia university
 Thesis Explanation :

this jurnal explains about the urgent of eagle sanctuary due to prprevent extinction. The main issue taken was habitat loss caused by mount merpati eruption. the concervation function was rehabilitation and educational centre for eagle this thesis also how to make a boundary interaction and bond between the human and eagle

Architecture, Conservation & Synurbization Aviary of Surabaya Zoo

Writer : Fransis jamuda krisayu
 Instantion : Sebelas November Institute
 Thesis Explanation :

Human civilization expantion became a threat for nature biodiversity, since least people care about it, the author want to live up the biodiversity in an urban area. in an urban area its much different environment with wildlife. the main focus of an animal at this thesis was a bird, enviroment behavioral approach used for designing the sanctuary for the bird. this approach affect the multisensory of the occupant at this sanctuary

DEVELOPMENT OF MARINE ECO-TOURISM FACILITIES OF SENDANG BIRU BEACH, South MALANG with an ECOLOGICAL ARCHITECTURE Approach

Writer : Tomi Saputro
 Instantion : islamic Indonesia university
 Thesis Explanation :

Planning the development of the Marine Ecotourism facility of Sendang Biru is a way to tour the beach Sendang Biru, . With the ecological architecture approach then any form planning or material to be applied, always have a mutual relationship with nature. In this planning, also applied several technologies to conserve power, water and waste. That is to apply the process of sea water distillation into clean water, the application of energy-saving electrical energy with windmills.

Context site

Study

**CHAPTER
02**

**SITE CONTEXT
AND ARCHITECTURE**

Jatimulyo Village

Jatimulyo Village is located in the Menoreh hills in the northern region of Kulon Progo Regency, Special Region of Yogyakarta, which borders the Purworejo Regency, Central Java, with an altitude of about 800 meters above sea level. The population of this village is around 6909 people.

Jatimulyo village has a diverse topography. The altitude range of 200-800 meters above sea level has an area with different slopes. The area with a slope of 0-8% has an area of 1.194 km². The area that has a slope of 8-15% is 6.474 km². The area with a slope of 15-25% is 4,595 km². The area with a slope of 25-45% is 2,681km². The area with a slope of >45% is 1,347 km².

Based on this condition, Jatimulyo Village utilizes its land with an agroforestry system. Agroforestry or agroforestry is a form of resource management that combines forest management activities or timber trees with short-term planting of commodities or crops, such as agricultural crops (Hadi et al., 2016). The composition of the vegetation composition of this agroforestry includes: coffee, sengon, hibiscus, mahogany, salak, coconut, petai, gliricidae, and others

The Jatimulyo Village area is a water catchment area, has seven natural attractions based on springs and waterfalls, namely: Kembangsoka, Kiskendo Cave, Setawing Waterfall, Grojogan Sewu, Kedung Pedut, and Mudal River. This condition is a unique and specific habitat for wild plants and animals (Sulfianto, 2018).

Figure 2.1 : Jatimulyo bird Conservation
Source : Author

Agroforest

Located in the Menoreh hills, Kulon Progo Regency. With an area of about 1,600 ha, the area is dominated by community forest or agroforestry or it can be called agroforest. Of course it can be guessed that the main livelihood of the community is gardening farmers. The average community land ownership is less than 1 ha. Jatimulyo agroforests are classified as complex agroforest types, with more than 150 types of constituent plants which are a mixture of cultivated plants and forest plants. Complex agroforests are also characterized by environmental conditions that are almost forest-like. There are strata of vegetation that compose it.

Jatimulyo is able to support the life of various wild animals. What is special, for example, is the record of bird diversity which reaches more than a hundred species. This is proof that community forest areas have an important value in biodiversity conservation.

Agroforests may serve as 'refuge' areas for various types of wildlife, providing them with both a place to live and an abundance of food. Agroforests 'save' the people of Jatimulyo. Both from an ecological and economic point of view. With a limited area of land, mixed gardens are proven to be safer for the family's economy. At least when compared to monoculture management. With such great benefits, it is appropriate that we place agroforests in Jatimulyo village as a very valuable heritage that deserves to be preserved.

Figure 2.2 : Jatimulyo forest
Source : Author



Bird Preservation in jatimulyo

Bird Watching

Bird watching activities contribute to a long process of effort conservation in Jatimulyo Village. Bird watching has been conducted since 2009 in collaboration between NGOs (NGOs), wildlife photographers, academics (students) from various universities in Yogyakarta, and local communities. This joint bird watching, indirectly transfers knowledge between participants. Transfer of knowledge from NGOs to students, or NGOs to local communities or vice versa. This knowledge transfer becomes part of the environmental education process, especially for local communities.

Campaign

This bird conservation campaign is in support of Decree No. 8 of 2014, especially the article that prohibits hunting birds. The campaign is carried out implicitly in village events and in the form of media publications. The media for this publication include: posters and information boards by the roadside. Posters that were installed in 12 dukuhans were carried out in 2016. Information boards were installed on the side of the road, at 6 points scattered in Jatimulyo Village, carried out in 2018. This publication media was carried out by the local community on behalf of KTH

Bird Release

Bird release is an activity to release confiscated birds that have been rehabilitated. The release of birds was initiated by the Yogyakarta BKSDA, Mount Merapi National Park, the Kamojang Eagle Conservation Center, and the Kanopi Foundation in collaboration with local communities and academics. The release began in 2017 with the achievement of 5 releases, 4 species of birds

Nest Adoption

Jatimulyo Village, Kulon Progo is an attractive location for bird hunters. This village has various types of habitats, which provide various types of birds. The stipulation of Per-Des No. 8 of 2014 has not been able to reduce the number of bird hunting. Harvesting birds in nature takes a long time so that it has an impact on decreasing bird populations, especially the caterpillar/Cyornis banyumas. Hunting of birds in the wild by hunters, apart from causing population decline, The adoption of nests initiated by the Indonesian Kutilang Foundation, the Menoreh and Kopi Suling Care Community, is an alternative to suppress hunting. The application of the nest, apart from being a form of support for December 8 2014, can also provide economic value benefits on a wider scale, and involve many elements of society. The benefits of this economic value are absorbed by land owners, nest seekers (former hunters), nest guards and the community. Community elements involved other than land owners, nest seekers and community members

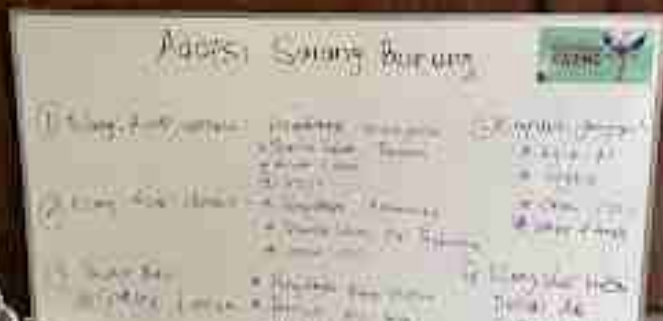


Figure 2.3 : KTH Wanapaksi Bird Conservation Map
Source : Author

Figure 2.4 : KTH Wanapaksi Bird Conservation Pamflet
Source : Author

Figure 2.5 : KTH Wanapaksi Bird Conservation Board
Source : Author

Rubber Garden

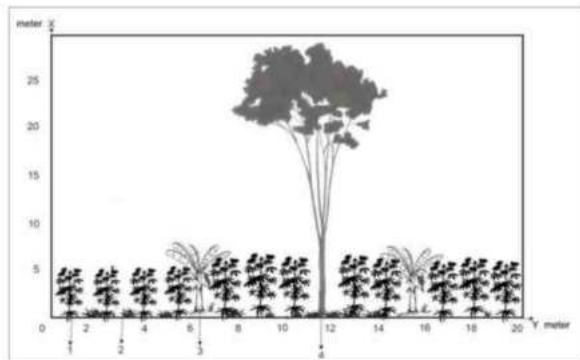


Figure 2.6 : Habitat Profil of Rubber Garden

Keterangan : 1.Ketela karet (*Manihot glaziovii*); 2. Rumpuk; 3.Pisang (*Musa paradisiaca*); 4. Sengon laut (*Paraserianthes falcataria*)

Paddy Field

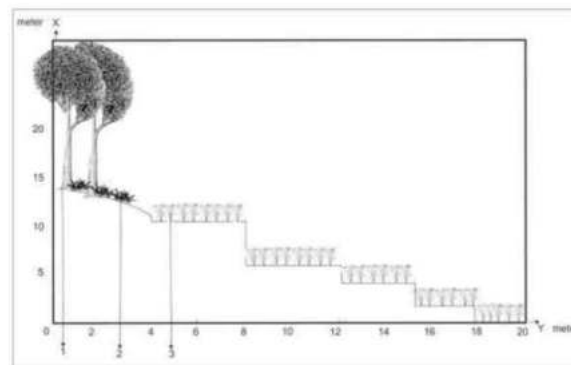


Figure 2.7 : Habitat Profil of Paddyfield Garden

Keterangan : 1.jati (*Tectona grandis*); 2. Rumpuk; 3. Padi (*Oryza sativa*)

Chocolate Garden

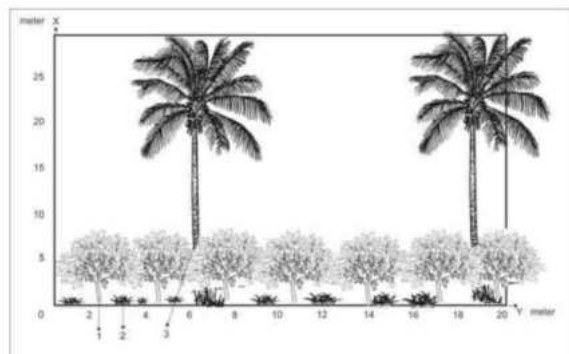


Figure 2.8 : Habitat Profil of Chocolate Garden

Keterangan : 1. Coklat (*Theobroma cacao*); 2. Rumpuk; 3. Kelapa (*Cocos nucifera*)

Sugarcane Garden

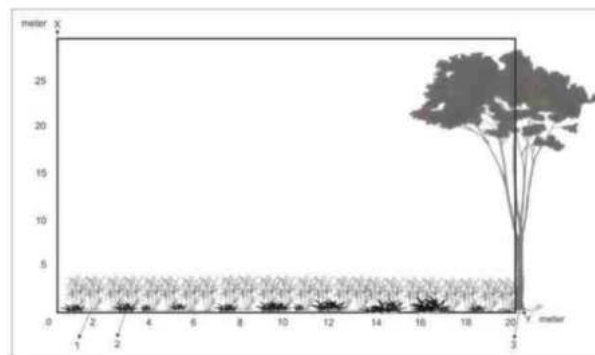


Figure 2.9 : Habitat Profil of Sugarcane Garden

Keterangan: 1.Tebu (*Saccharum officinarum*); 2. Rumpuk; 3. Sengon laut (*Paraserianthes falcataria*)

Clove garden

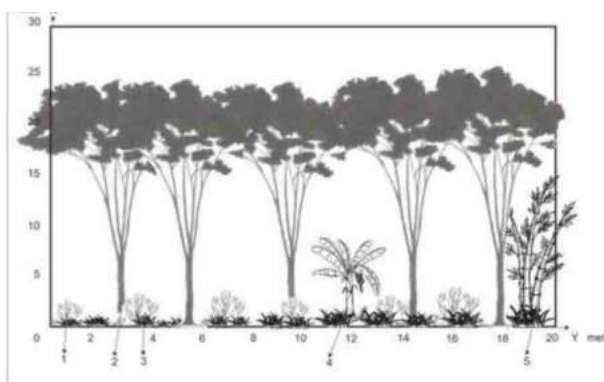


Figure 2.10 : Habitat Profil of clove Garden

Keterangan : 1. Salak (*Zalaca edulis*); 2. Cengkeh (*Syzygium aromaticum*); 3. Kelapa (*Cocos nucifera*); 4. Aren (*Arenga pinata*)

Mixed Garden

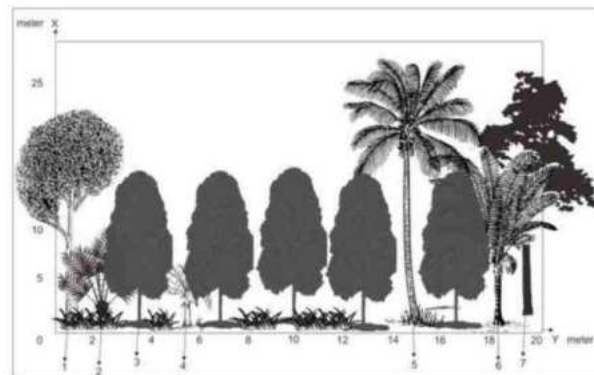
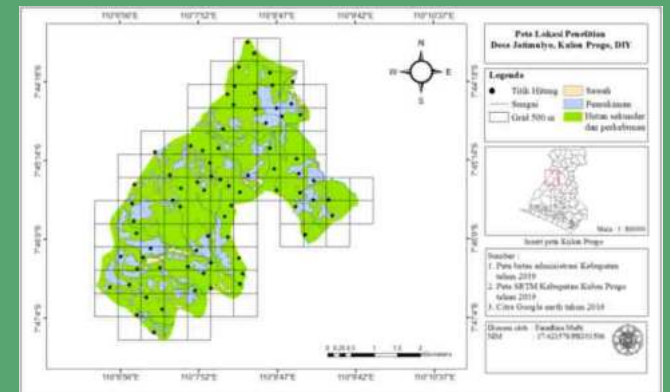


Figure 2.11 : Habitat Profil of Mixed Garden

Keterangan : 1. Jati (*Tectona grandis*); 2. Salak (*Zalaca edulis*); 3. Cengkeh (*Syzygium aromaticum*); 4. Pisang (*Musa paradisiaca*); 5. Kelapa (*Cocos nucifera*); 6. Aren (*Arenga pinnata*); 7. Sengon laut (*Paraserianthes falcataria*)

Agroforest Bird Habitat



Jatimulyo Village has a diverse topography, a blend of valleys, hills with karst rocks. This condition makes the people of Jatimulyo Villageto utilize their land with agroforestry or agroforestry systems.

Discussion in this study differentiated by agroforest system and habitat type. System agroforests based on the type of vegetation composition are divided into 7, namely: gardens cloves, sengon orchards, cassava gardens, sugarcane plantations, cocoa plantations, orchard mixed, and rice fields. Habitat types are divided into 2, namely: riverbanks and riverbank yard. Each has a different number of counting points. There are 32 clove garden agroforests, 32 clove gardens, sengon gardens 12, cocoa plantations 4, cassava plantations 8, sugarcane plantations 2, mixed gardens 21, and rice fields 2. There are 8 riverside habitat types and 11 yards agroforest and habitat type, habitat profile data sample is taken from one point.

Figure 2.6 : Habitat Profil of Rubber Garden

Figure 2.7 : Habitat Profil of Paddyfield Garden

Figure 2.8 : Habitat Profil of Chocolate Garden

Figure 2.9 : Habitat Profil of Sugarcane Garden

Figure 2.10 : Habitat Profil of clove Garden

Figure 2.11 : Habitat Profil of Mixed Garden

Source : Struktur Komunitas Dan Upaya Konservasi Burung Di Desa Jatimulyo by Faradlina Mudri

Type of Bird Habitat

1. River bank Habitat

type consists of 8 counting points, both large and small rivers. These eight counting points have various river types. The combination of hilly land, cliffs and ravines forms a small river originating from a spring, flowing to form tributaries. Some of the creeks flow past the cliffs to form waterfalls, then flows to form a larger, shallower river with rock bottom substrate with fast currents. The topographical conditions of the river differently affect the composition of the vegetation on the riverbank. If observed in detail, they have different compositions of vegetation composition, but there is one type of plant found in all locations of duckscount (8 points), namely bamboo betung (*Dendrocalamus asper*). Following one sample of the riverbank habitat profile. More about this source text Source text required for additional translation information Send feedback Side panels

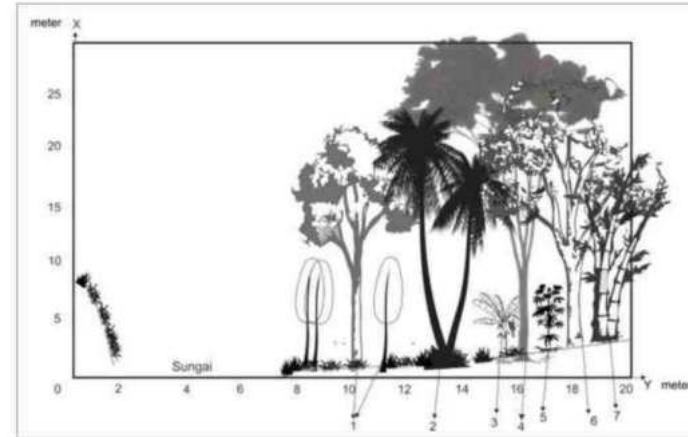


Figure 2.6 : Habitat Profil of Yard

Source : Struktur Komunitas Dan Upaya Konservasi Burung Di Desa Jatimulyo by Faradlina Muhti

Keterangan: 1. Jati (*Tectona grandis*); 2. Kelapa (*Cocos nucifera*); 3. Pisang (*Musa paradisiaca*); 4. Sengon laut (*Paraserianthes falcataria*); 5. Ketela karet (*Manihot glaziovii*); 6. Sukun (*Artocarpus altilis*); 7. Bambu betung (*Dendrocalamus asper*)

2. Yard Habitat

The type of yard habitat is vegetation that is around people's houses. This habitat type, there are 12 count points. Each counting point has a different topographical shape and vegetation composition. The following is the data of the vertical yard habitat profile at one of the counting points.

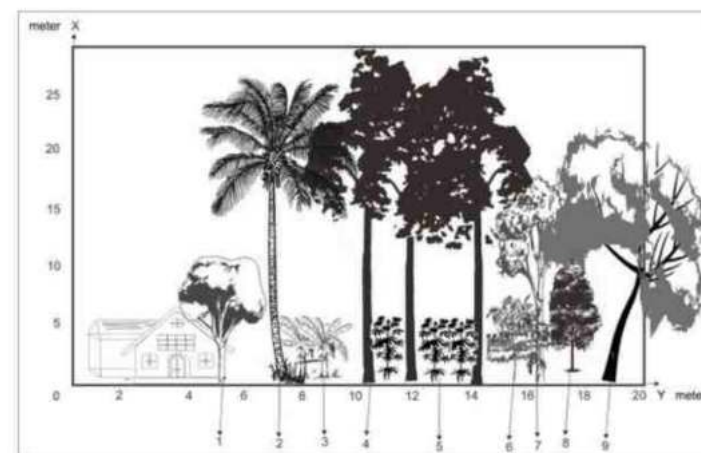


Figure 2.6 : Habitat Profil of Yard

Source : Struktur Komunitas Dan Upaya Konservasi Burung Di Desa Jatimulyo by Faradlina Muhti

Keterangan: 1. Mangga (*Mangifera indica*); 2. Kelapa (*Cocos nucifera*); 3. Pisang (*Musa paradisiaca*); 4. Sengon laut (*Paraserianthes falcataria*); 5. Ketela karet (*Manihot glaziovii*); 6. Kopi (*Coffea canephora*); 7. Alpukat (*Persea Americana*); 8. Cengkeh (*Syzygium aromaticum*); 9. Waru gumung (*Hibiscus tiliaceus*)

Feeding guild

Based on Figure 17. Graph of the percentage composition of the type of feedbirds in Jatimulyo Village, the highest percentage of birds in the group insectivore with a value of 53%, followed by a group of frugivore birds with a value of 10%; granivore 9%; piscivores 9%; nectarivores 7%; and lastly omnivore 4%. Insectivore has a percentage composition of bird feed types highest, with a value of 53% (41 species). This high percentage is influenced by variation of habitat types in Jatimulyo Village. Based on this research, there are 9 types of the habitats found in Jatimulyo Village. These nine habitats have characteristics each different, in terms of topography and composition of the constituent vegetation.

Insects (Insecta) are one group of animals that occupies 80% of the total number of animal species on earth (Borror, et al. 1996). Each type is found in the character of the habitat different. From soil insects, water insects, living insects on vegetation understorey (herbal shrubs), insects that live attached to tree trunks, insects that live in the leaves of large trees, to flying insects. Jatimulyo village provides habitat for all the insect group.

In addition to the reasons above, based on the research of Novarino, et al. (2008) there are 7 types of insectivorous birds based on how they find food in insect habitats. These seven types are tree foliage gleaner insect / insect eater that is actively looking for food in the tree canopy (TFGI); bark gleaner insect / insect eater that forages in part of a tree branch or twig (BGI); fly catching insects / eaters of flying insects (FCI); shrub foliage gleaner insect / eater of bush-foraging insects (SFGI); litter gleaner insects / insect eaters looking for food in litter or forest floor (LGI); insectivore-frugivore / fruit insectivores (IF); insectivore-nectarivore / insect eater and nectar eater (IN); and insectivore-carnivore / eat insects and fish or vertebrates others in the water (CI)

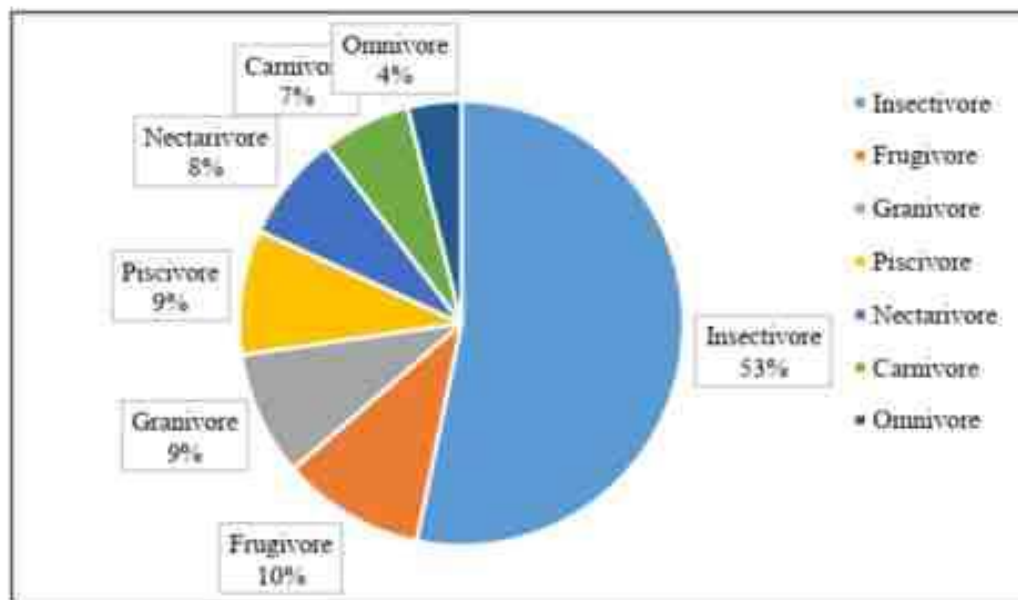


Figure 2.6 : Graph of percentage food type composition in jatimulyo village

Source : Struktur Komunitas Dan Upaya Konservasi Burung Di Desa Jatimulyo by Faradlina Muhti

Keterangan: 1. *Insectivore* : pemakan serangga, 2. *Frugivore* : pemakan buah, 3. *Granivore* : pemakan biji-bijian, 4. *Piscivore* : Pemakan ikan, 5. *Nectarivore* : penghisap madu, 6. *Carnivore* : pemakan daging, 7. *Omnivore* : pemakan segala.

B. Komunitas burung

1. Kekayaan jenis burung

Tabel 1.3. Kekayaan jenis burung, status konservasi dan status endemisitas

No	Jenis/ Spesies		Agroforest							Tipe habitat			Status	
	Nama ilmiah	Nama lokal	Ckh	Se	Co	Te	Saw	Ket.K	Camp	Tsu	Pek	P.106	E/M	
1.	<i>Accipiter gularis</i>	Elang alap nipon							√			√	Migran	
2.	<i>Accipiter soloensis</i>	Elang alap cina					√	√				√	Migran	
3.	<i>Aegithina tiphia</i>	Cipoh kacat	√	√		√	√	√	√	√	√			
4.	<i>Aethopyga mystacalis</i>	Burung madu jawa	√	√				√	√	√	√	√	Endemik	
5.	<i>Alcedo meninting</i>	Raja udang meninting								√				
6.	<i>Anthreptes malacensis</i>	Burung madu kelapa	√	√	√	√		√	√	√	√			
7.	<i>Apus nipalensis</i>	Kapinis rumah	√	√								√		
8.	<i>Apus pacificus</i>	Kapinis laut		√										
9.	<i>Arachnothera affinis</i>	Pijantung gunung	√	√					√	√	√			
10.	<i>Arachnothera longirostra</i>	Pijantung kecil	√	√					√	√	√			
11.	<i>Arachnothera robusta</i>	Pijantung besar	√	√					√	√				
12.	<i>Artamus leucorhynchus</i>	Kekep babi		√										
13.	<i>Bubulcus ibis</i>	Kuntul kerbau				√								
14.	<i>Cacomantis merulinus</i>	Wiwik kelabu					√	√	√					
15.	<i>Cacomantis sepulcralis</i>	Wiwik uncuung	√	√		√				√	√	51		
16.	<i>Cacomantis sonneratii</i>	Wiwik lurik	√							√				
17.	<i>Centropus bengalensis</i>	Bubut alang-alang				√								
18.	<i>Ceyx erithaca</i>	Udang api							√	√				
19.	<i>Chalcophaps indica</i>	Delimukan zambrud	√							√	√			
20.	<i>Cinnyris jugularis</i>	Burung Madu sriganti	√	√	√	√		√	√	√	√			
21.	<i>Collocalia fuciphagus</i>	Walet sarang putih							√					
22.	<i>Collocalia linchi</i>	Walet linci	√	√	√	√	√	√	√	√	√			
23.	<i>Criniger bres</i>	Empuloh janggut	√								√			
24.	<i>Cuculus saturatus</i>	Kangkok ranting	√							√				
25.	<i>Cyornis banyumas</i>	Sikatan cacing							√					
26.	<i>Dendrocopos macei</i>	Caladi ulam	√	√						√				
27.	<i>Dendrocopos moluccensis</i>	Caladi tilik	√	√	√	√			√	√	√			
28.	<i>Dicaeum concolor</i>	Cabai polos		√							√			
29.	<i>Dicaeum trigonostigma</i>	Cabai bunga api	√	√	√	√		√	√	√	√			
30.	<i>Dicaeum trochileum</i>	Cabai jawa	√								√		Endemik	
31.	<i>Dicrurus leucophaeus</i>	Srigunting kelabu							√					
32.	<i>Dinopium javanense</i>	Pelatuk besi	√	√					√	√	√			
33.	<i>Enicurus leschenaulti</i>	Meninting besar								√				
34.	<i>Enicurus velatus</i>	Meninting kecil								√			Endemik	
35.	<i>Falco moluccensis</i>	Alap-alap sapi									√			
36.	<i>Gallus varius</i>	Ayam hutan hijau		√			√	√					Endemik	
37.	<i>Geopelia striata</i>	Perkutut jawa		√					√	√	√			
38.	<i>Halcyon chloris</i>	Cekakak sungai	√						√		√			
39.	<i>Halcyon cyanoventris</i>	Cekakak jawa	√	√		√				√	√		Endemik	
40.	<i>Hemiprocne dongipennis</i>	Tepekong jambul	√	√							√			

41.	<i>Hirundo rustica</i>	Layang layang asia	√					√		
42.	<i>Hirundo tahitica</i>	Layang layang batu							√	
43.	<i>Hypothymis azurea</i>	Kehicap ranting	√			√	√		√	
44.	<i>Lanius schach</i>	Bentet kelabu	√							√
45.	<i>Lonchura leucogastroides</i>	Bondol jawa	√	√	√			√	√	Endemik
46.	<i>Lonchura punctulata</i>	Bondol peking	√							√
47.	<i>Macronous flavicollis</i>	Ciung air jawa				√	√	√	√	√
48.	<i>Macropygia emiliana</i>	Uncal buau				√	√		√	
49.	<i>Malacocincla sepiarium</i>	Pelanduk semak	√			√		√	√	√
50.	<i>Muscicapa dauurica</i>	Sikatan bubik	√	√						Migran
51.	<i>Muscicapa sibirica</i>	Sikatan sisi gelap	√					√		Migran
52.	<i>Orthotomus sepium</i>	Cinene jawa	√	√	√	√	√	√	√	√
53.	<i>Orthotomus sutorius</i>	Cinene pisang	√	√	√	√	√	√	√	√
54.	<i>Pachycephala grisola</i>	Kancilan bakau	√					√	√	
55.	<i>Passer montanus</i>	Gereja erasia								√
56.	<i>Pellorneum capistratum</i>	Pelanduk topi hitam	√					√	√	√
57.	<i>Pericrocotus cinnamomeus</i>	Sepah kecil	√	√	√					√
58.	<i>Pericrocotus flammeus</i>	Sepah hutan						√		
59.	<i>Pernis ptilorhynchus</i>	Sikep madu Asia		√	√	√			√	√
60.	<i>Phylloscopus borealis</i>	Cikrak kutub	√	√	√			√	√	√
61.	<i>Prinia inornata</i>	Perenjak padi			√		√			
62.	<i>Prinia polychroa</i>	Perenjak coklat	√		√	√		√		
63.	<i>Ptilinopus melanospila</i>	Walik kembang						√		
64.	<i>Pycnonotus aurigaster</i>	Cucak kutilang	√	√	√			√	√	√
65.	<i>Pycnonotus goiavier</i>	Merbah cerukcuk	√							√
66.	<i>Pycnonotus melanicterus</i>	Cucak kuning	√	√	√	√		√	√	√
67.	<i>Rhamphococcyx curvirostris</i>	Kadalan birah	√	√		√	√	√	√	√
68.	<i>Rhipidura javanica</i>	Kipasan belang						√		√
69.	<i>Sitta frontalis</i>	Munguk beledu						√		
70.	<i>Spilornis cheela</i>	Elang ular bido	√	√	√	√	√	√	√	√
71.	<i>Spizaetus cirrhatus</i>	Elang brontok						√		√
72.	<i>Stachyris melanothorax</i>	Tepus pipi perak						√		Endemik
73.	<i>Streptopelia chinensis</i>	Tekukur biasa		√						√
74.	<i>Surniculus lugubris</i>	Kedasi hitam	√					√		
75.	<i>Turnix suscitator</i>	Gemak loreng						√		
76.	<i>Turnix sylvatica</i>	Gemak tegalan	√	√						
77.	<i>Zosterops palpebrosus</i>	Kacamata biasa	√					√		√

53

Keterangan

1. Kolom jenis Agroforest dan tipe habitat

- | | | |
|------------------|-------------------------|-----------------------|
| a. Ckh : cengkeh | d. Te : Tebu | g. Camp : Campuran |
| b. Sen : Sengon | e. Saw : Sawah | h. T.Su : Tepi sungai |
| c. Co : Coklat | f. Ket K : Ketela karet | i. Pek : Pekarangan |

2. Kolom status

- a. P1.06 : Peraturan MENLHK RI No. P106/ 2018 tentang Jenis Tumbuhan dan satwa yang dilindungi
b. E : endemik Jawa
M : Migran, burung yang mempunyai kebiasaan bermigrasi setiap tahun dari belahan bumi utara ke selatan.

Bird Data By :

**STRUKTUR KOMUNITAS DAN UPAYA KONSERVASI
BURUNG DI DESA JATIMULYO, KULON PROGO,
D.I.Y**

Faradlina Mufti

Based on Figure 2,6 Comparison graph of the number of species in each type agroforests and habitat types, the highest number of species is in garden habitat clove. There are 41 species of birds in the clove garden. The number of species is affected by number of counting points and habitat characteristics. The clove garden has a number of the largest counting point with a total of 22 count points. In addition to the number of counting points, the characteristics of the clove garden also affect the number of bird species found. Characteristics of different clove gardens compared to other habitat types. The characteristics of the clove tree gives space to coexist with other vegetation. Morphologically, the shape conical crown, from bottom to top, leaf size is relatively small (7-12 cm and 2-3 cm wide), crown width of 1-2 meters. This character is able to give space the sun penetrated to the forest floor. As a result the space between the floor base forest until the first branch (2-3 m) is utilized by understory vegetation, shrubs and herbs to grow and thrive. Plant Vegetation The bottom is the habitat of bush birds and lower strata birds.

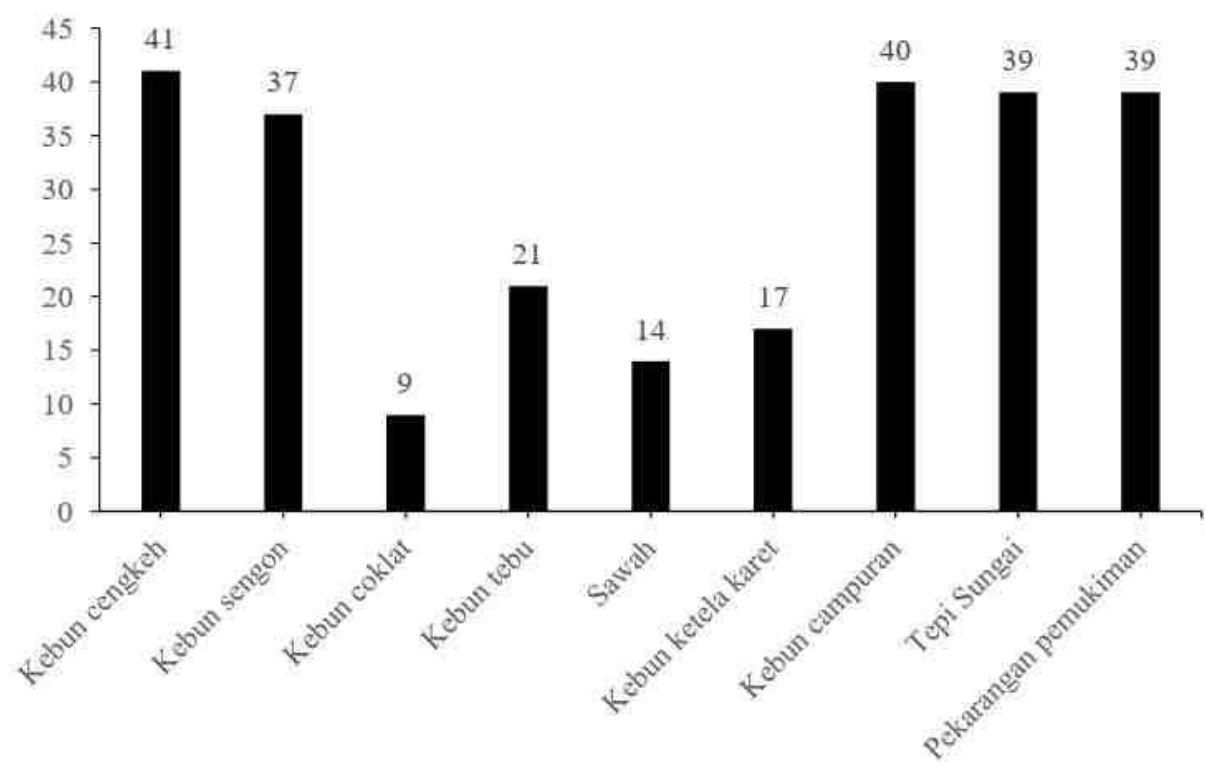


Figure 2.6 : graph of the number of species in each type agroforests and habitat types
Source : Struktur Komunitas Dan Upaya Konservasi Burung Di Desa Jatimulyo by Faradlina Mudti

Context site

Analysis



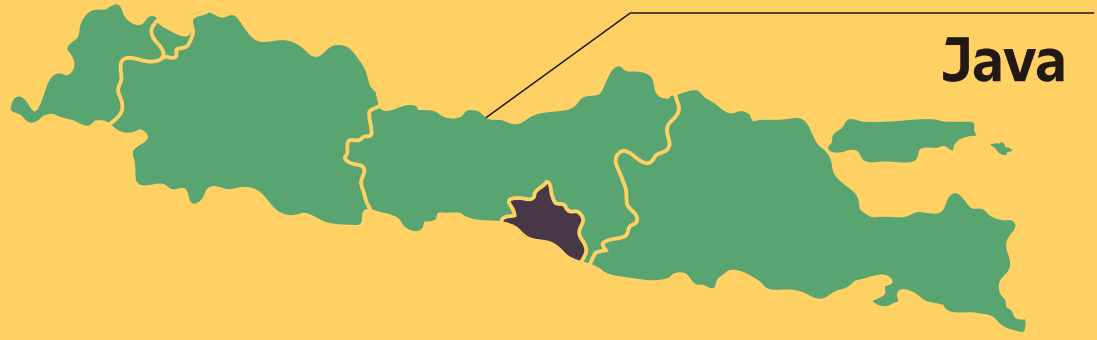
Jatmulyo Village



Banyunganti
Jatimulyo
Girimulyo
Kulon Progo Regency
Special Region of Yogyakarta

Figure 2.16 : Indonesia Map
Source : Google Image

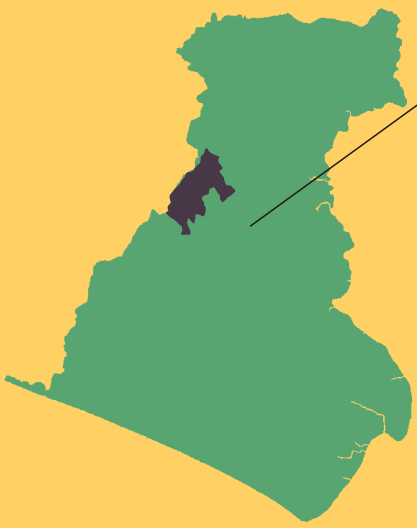




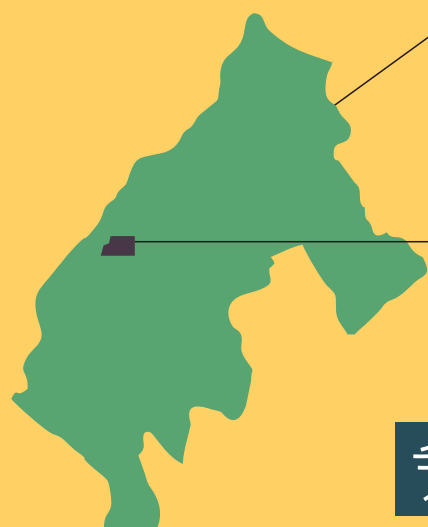
Java



Special Region of Yogyakarta



Kulonprogo



Jatimulyo Village

Site

5,7 Ha

Access To Site

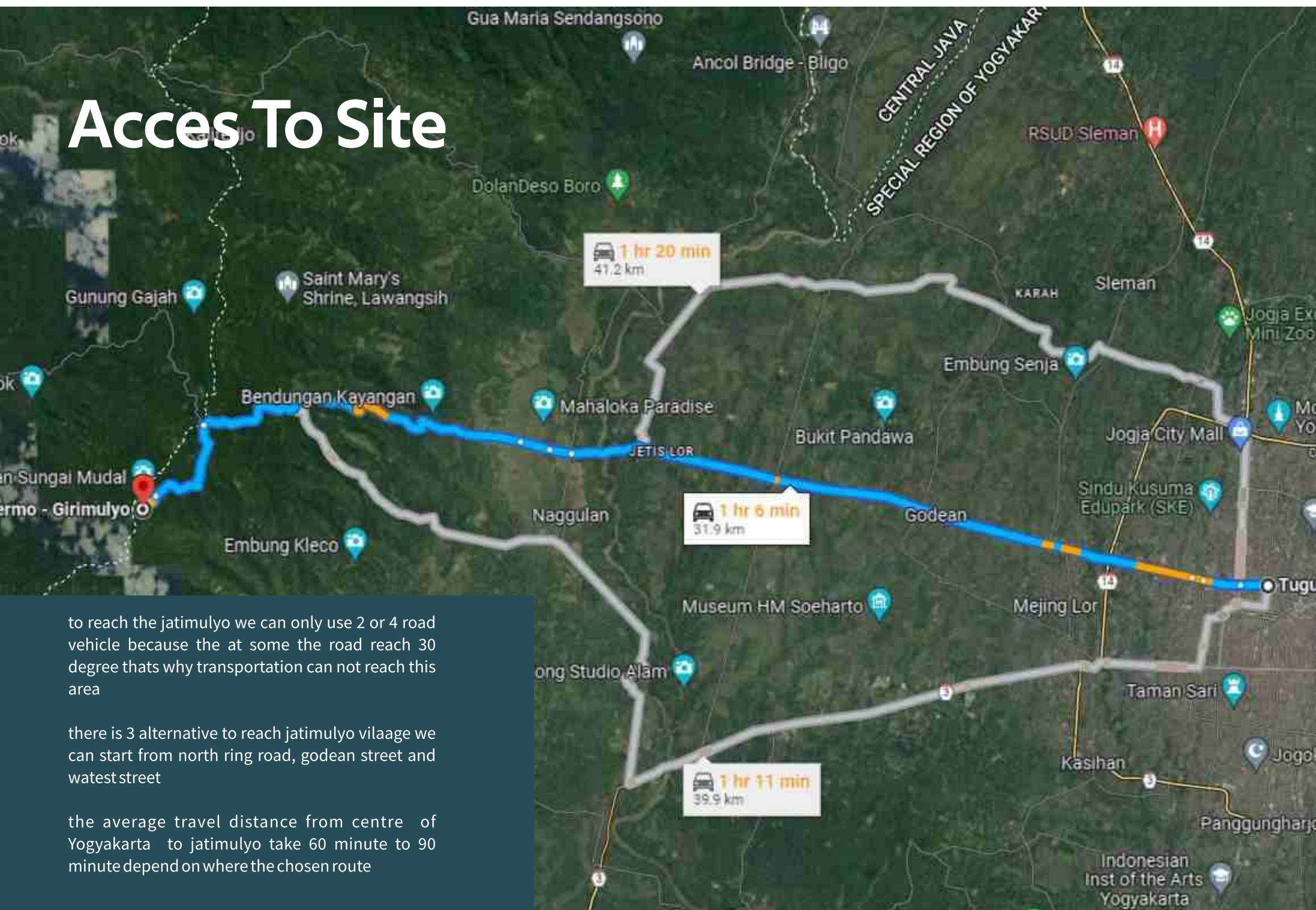


Figure 2.3 : Access to site

Source : <https://earth.google.com/>



Figure 2.17 : Conservation Map
 Source : <https://earth.google.com/web/>

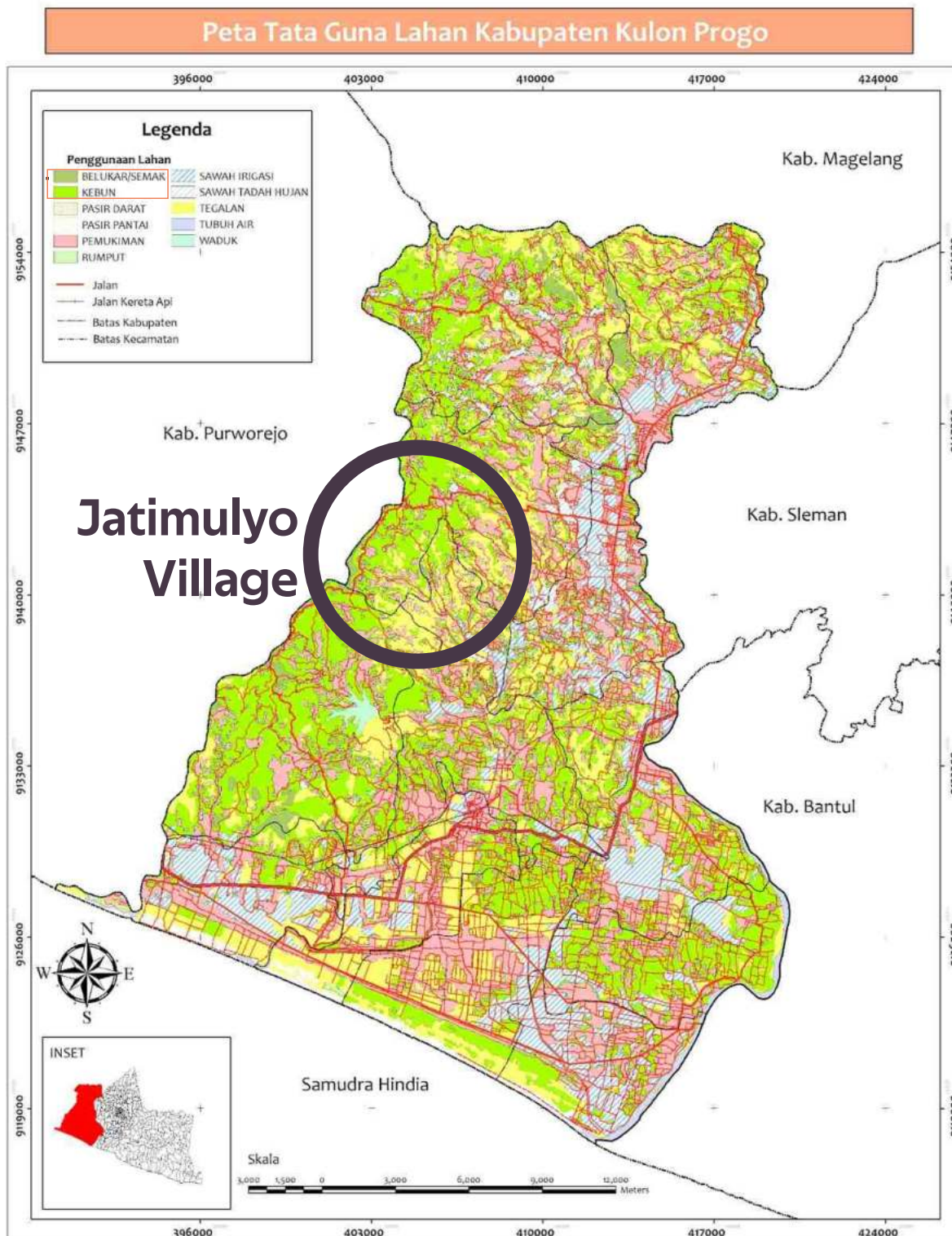
Jatimulyo Administrative

Jatimulyo Village is located on Menoreh Hill, a limestone mountain that extends from Kulon Progo, Purworejo, and Magelang Regencies. The land in the area is managed by the community using an agroforestry management that combines forest management with short-term planting of agricultural commodities or crops.

Jatimulyo Village area is about 80 percent covered with plantation forest ecosystems. This is what makes many birds feel at home and breed, such as the Red Anis, Green Cucak, and Kampung Kucica birds.

base on layout use map of kulonprogo there's no regulation related to building coverage ratio, floor area ratio and green area ratio. the selected site categorized as garden area and shrubs area

Figure 2.17 : RTRW Kulonprogo
Source : <https://peraturan.bpk.go.id/>





1 inside site



2 site from street



3 Access In Site



from far below



4 River Stream



5 Mudal Stream

Site Topography

Located in Menoreh hill the existing site had a sloped site, the height between contour has 2,5 meter untill 5 meter

this sloped site had a 2 zone the upper and the lower zone. at the upper zone covered by a diverse plantation from small shrub untill high tree such us pinus and sengon tree

at the lower zone had minim of vegetation, we can find the 2 river sream from mudal river and kembangsoka river

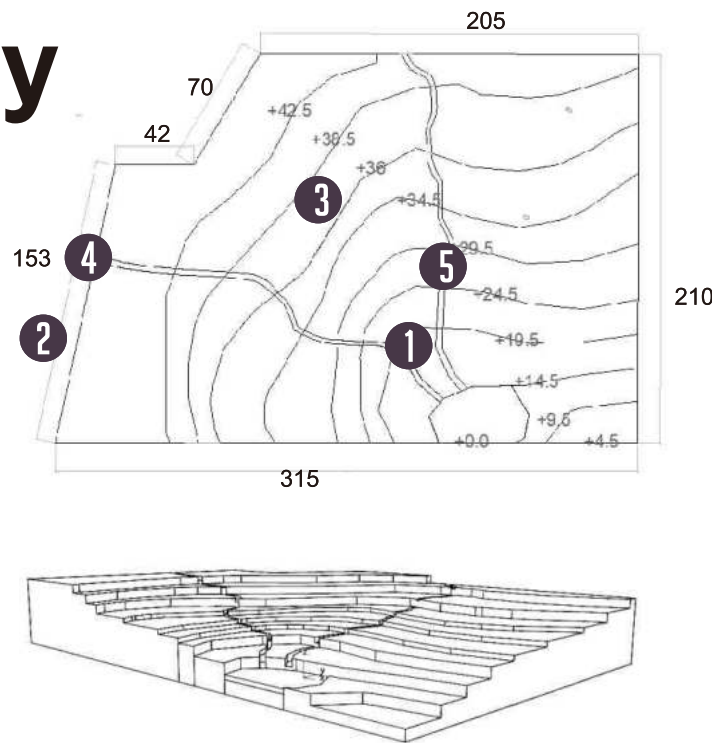
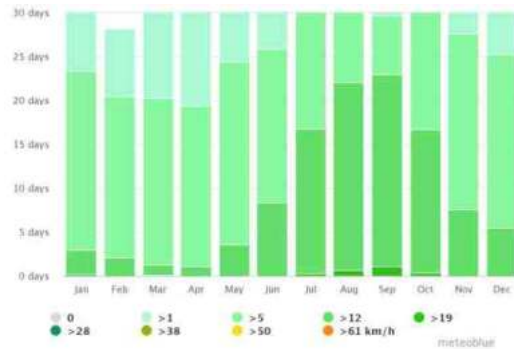


Figure 2.6 :Inside Site
 Figure 2.6 :site from street
 Figure 2.6 :Access inside site
 Figure 2.6 :Site from below
 Figure 2.6 :River site

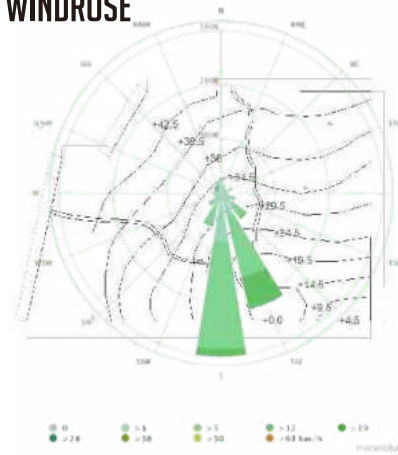
Source : Author 2021

Climate Data

WIND DATA

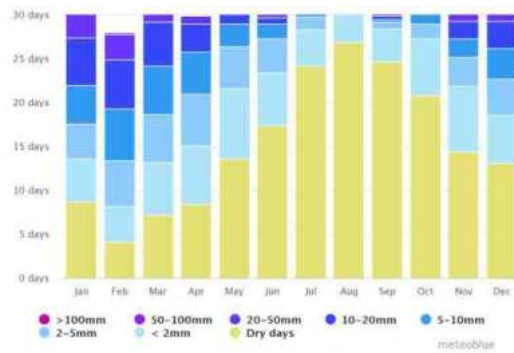


WINDROSE

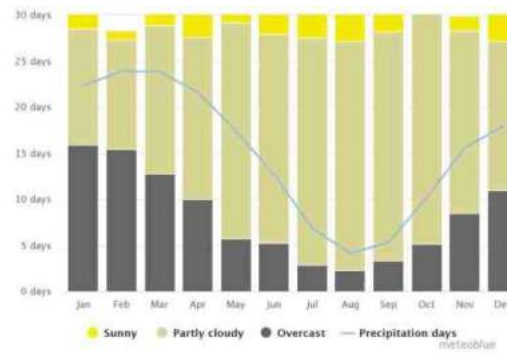


the data of metheo blue the strong wind come from south and south east. base on the existing site the wind come from the lowlan into highland. standard from sni 03-6572-2001 comfort wind velocity was 1-12m/s

PRECIPITATION AMOUNT

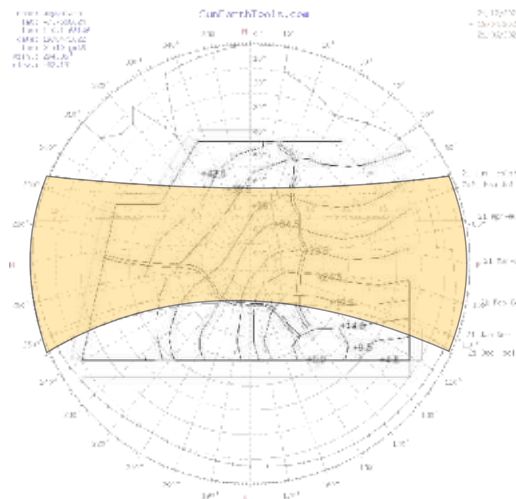
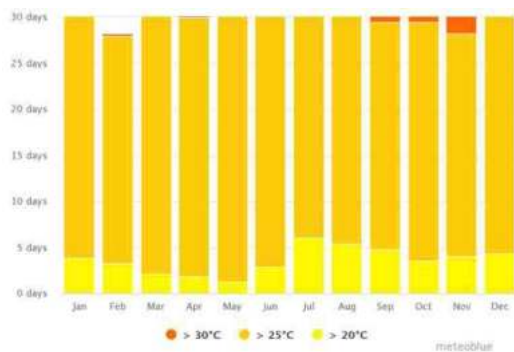


CLOUDY SUNNY AND PRECIPITATION DAYS



June to October month became dry season time the precipitation data show only 2mm -10mm. but the sky was partial cloudy. in rainy season precipitation reach 50mm this high precipitation gave benefit to forest environment. jatimulyo villager rarely had a sunnysky

MAXIMUM TEMPERATURES



the average temperature in jatimulyo was 25 degree, the highest temperature reach > 30 degree but its only happen in September untill November. indonesia thermal comfort have a comfort standart in 22.8°C - 25,8 °C from temperature data jatimulyo already fullfil comfort thermal heat standard

Figure 2.3 : Jatimulyo Climate Data
Source : Metheoblu.com

**CHAPTER
03**

**THEORY AND
PRECEDENT**

Design Theme

STUDY



NATURE BASED LEARNING

These are in line with Environmental Education (EE) that was initially utilized in 1965 by the Royal Society of London, with a definition associated to the preservation of life systems. Besides, Environmental Education should not be restricted only to construction of the ecological knowledge, but also to inspire the participation of community in build the environmental behaviour that sustainable towards the environment.

Nature-based Learning Activities Provide Direct Interaction, Multimodal, And Multisensory Interaction With Natural Elements And Living Things By Involving All The Senses (singer, Et Al. 2009).

in direct interaction the audience experience the learning in nature/forest environment to raise the empathy to the biodiversity.

multi modal support the learning activities by verbal and visual the observer could have a valid knowledge from text and what they see. the observer also have multisensory experience by the sight sound and touch

Figure 3.1 : Jatimulyo Waterfall
Source : Author (2021)

ANIMAL CONSERVATION STUDY

P.22/MENLHK/SETJEN/KUM.1/5/2019

Regulation of the minister of environment and forestry 2019 state that conservation is a management measure wild plants and/or animals takenwisely in order to meet the needs of current and future generations. Conservation Institutions have the main function as a place for controlled breeding and/or rescue of wild plants and animals while maintaining the purity of their species. Management of Conservation Institutions is carried out based on ethical principles and animal welfare. there are two tipe of conservation

There are various levels of function and purpose of animal parks, ranging from high idealism (culture, science education, and conservation) toin pure commercial, among which there are several combinations. ThoughThus, it has more functions as an animal park which is managed as acommercial venture. And often the whole business profit is invested in the goal as a conservation effort, as part of the global conservation, and the function of an animal park should support:

function of conservation :

- a. education;
- b. demonstration;
- c. temporary care;
- d. source of broodstock and genetic reserves forsupport in-situ populations;
- e. healthy recreational facilities;
- f. research and scientific development.

Conservation Institutions for the Public

institutions that are engaged in the conservation of wild plants and/or animals outside their habitat (ex-situ), both in the form of government institutions and non-governmental institutions which in their designation and management have main functions and other functions for the public interest.

Animal Park is a place for animal care for at least 2 (two) taxa classes in an area of at least 2 hectares (two hectares).

Type of Public Conservation

- A.. Animal Rescue Center;
- b. Special Animal Conservation Center;
- c. Animal Rehabilitation Center; and
- d. Special Animal Training Center.

Conservation Institutions for Special Interests

institutions engaged in the conservation of wild plants and/or animals outside their habitat (ex-situ), both in the form of government agencies and non-governmental institutions whose designation and management is focused on the function of saving or rehabilitating animals.

Animal Rehabilitation Center is a place to carry out the rehabilitation process, animal adaptation, andrelease to their natural habitat

Type of Special Conservation:

- a. Zoo
- b. Safari Park
- c. Animal Park;
- d. Special Animal Park;
- e. Zoological Museum;
- f. Botanical Gardens;
- g. Special Plant Gardens;
- h. Herbarium.



What are the Principles of Animal Welfare ?

According to Law No. 18 of 2009 animal welfare is all matters relating to the physical and mental state of animals according to the size of the natural behavior of animals that need to be implemented and enforced to protect animals from any person's inappropriate treatment of animals that are used by humans.

Animal welfare can be achieved by fulfilling the five principles of animal freedom or what is often called the " Five of Freedom " which was initiated by the OIE (World Organization for Animal Health) in the UK since 1992. The five principles of freedom consist of:

Figure 3.2 : feeding bird
Source : Pinhome.id

FREE FROM HUNGER AND THIRST



By Providing fresh water & grazing time

FREE FROM DISCOMFORT



By Providing Access to sunlight & soft warm bed

FREE FROM PAIN, INJURY AND DISEASE



free from pain, injury/injury and disease

FREE TO EXPRESS NORMAL AND NATURAL BEHAVIOR



by Allowing mother to nurse and stay with their

FREE FROM FEAR AND STRESS.



by providing a safe, nourishing environment

ANIMAL WELFARE



Freedom from hunger and thirst is intended as easy access to drinking water and food that can maintain health and energy. In addition, the type of food provided must be in accordance with the type of natural food with a balanced nutritional content. If this condition cannot be fulfilled, it will lead to disease and suffering.



Providing a sense of comfort to animals can be done by paying attention to the animal's need for a suitable place to live or providing appropriate shade or nest and a comfortable resting area. In addition, environmental factors that must be considered include temperature, humidity, ventilation and lighting which must be in accordance with the natural conditions of the animal concerned.



Animals also need to be considered for their health condition by taking preventive measures, and if they have been exposed to a disease, they must get the right diagnosis and therapy. In addition, it is necessary to have a health check program that can be carried out regularly to ensure the health condition of the animal by consulting a veterinarian.



The fear and distress experienced by animals causes mental suffering that leads to stress. Stress is a state that is the opposite of a state of well-being. Distress is an advanced condition of stress that causes changes in the animal's physique. This condition is seen in behavioral responses such as avoiding cold temperatures to warmer places or vice versa and repetitive movements do not vary and have no clear purpose.



We can help animals to express their normal behavior patterns by providing adequate cage area, good quality cages, and companions from similar animals by paying attention to socialization, specific behaviors (eg how to take food), and enrichment programs. The enrichment program is to provide forms of roosting place, materials or tools that can be used by animals in expressing their behavior,

Table 2.1 : Environmental Behaviour Observation

Elements in Environmental Behavior Observation	
Who is	<i>Actor</i>
doing <i>what</i>	<i>Act</i>
with <i>whom?</i>	<i>Significant Others</i>
In what <i>relationship</i> ,	<i>Relationships</i>
	aural, visual, tactile, olfactory, symbolic
in what <i>context</i> ,	<i>Sociocultural Context</i>
	situation culture
and <i>where?</i>	<i>Physical Setting</i>
	props spatial relations

Source : *Inquiry by Design: tool for environment behaviour study chapter 8*

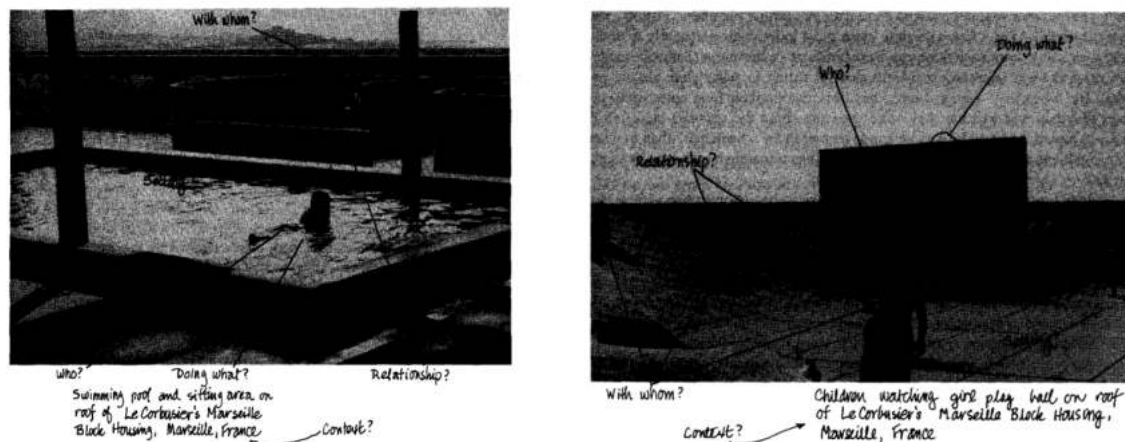


Figure 2.27 : Behaviour Design Approach

Source : *Inquiry by Design: tool for environment behaviour study chapter 8*

Environmental Behaviour Study

Observing behavior looks like a simple E-B research technique. Everyone watches people every day. Doesn't everyone know how to do it? In a way, yes; but few know what to look for and how to analyze what they see so that it is useful to design.

Designers make places for people to do things in either alone or together with other people. A structure for looking at environmental behavior useful to designers results in data to help physical designers make decisions that improve places for people. The better information designers have about how the people they design for behave in physical settings and how those people relate to or exclude other people, the better they can control the behavioral side effects of the design decisions they make.

Designers must know how the contexts of observed activities affect the activities, because in different sociocultural and physical settings the same behavior can have different design implications. For example, children may do homework at the kitchen table for different reasons in a house with several available rooms to study in than in a one-bedroom apartment where four people are living. In some groups people react to neighbors sitting on the front stoop with disdain, while for others the front rather than the back is where everyone sits. When you structure the way you look at something, you replace complex reality with a simpler version to guide your reactions and action. To increase our control over the behavioral side effects of design decisions, we can describe behavior in terms of actor, act, significant others, relationships, context, and setting (see box).

Raptor Behaviour Analysis

No	Scientific Name	Local Name	Agroforest							habitat			Status	
			Ckh	Se	Co	Te	Saw	Ket.K	Camp	Tsu	Pek	P.106	E/M	
1	<i>Accipiter gularis</i>	Elang alap nipon								√			√	Migran
2	<i>Accipiter soloensis</i>	Elang alap cina					√	√					√	Migran
3	<i>Pernis ptilorhynchus</i>	Sikep madu Asia												Migran
4	<i>Spilornis cheela</i>	Elang ular bido	√	√		√	√	√	√	√	√	√	√	
5	<i>Spizaetus cirrhatus</i>	Elang brontok									√		√	
6	<i>Nisaetus bartelsi</i>	Elang jawa	√	√		√	√	√	√	√	√	√	√	Endemik



Figure 3.3 : *Accipiter gularis*
Source : pinhome.co.id

small body (27 cm).eats small birds of the passerine family and occasionally eats medium-sized birds such as pigeons. Also eats mice, bats, reptiles and insects



Figure 3.4 : *Accipiter soloensis*
Source : pinhome.co.id

medium-sized body (33 cm).Eats frogs, grasshoppers, lizards and small birds.



Figure 3.5 : *Pernis ptilorhynchus*
Source : pinhome.co.id

Body length ranges from 65-75 cm Eating bees, grubs, honey, and honeycomb material. Also eats soft fruits, and reptiles.



Figure 3.6 : *Spilornis cheela*
Source : pinhome.co.id

medium size about 50 cm. The main food of the snake eagle is small snakes, small birds to small mammals such as mice or rabbits that have a small size.



Figure 3.7 : *Nisaetus cirrhatus*
Source : pinhome.co.id

Body length reaches 60-70 cm. Most of the food is small mammals, reptiles and several types of small aves.



Figure 3.8 : *Nisaetus bartelsi*
Source : pinhome.co.id

Body length reaches 60-70 cm. eats small birds and other poultry, small mammals such as mice, squirrels, rabbits,also eats various types of small reptiles such as lizards and snakes.

Bird Behaviour Analysis

No	Scientific Name	Local Name	Agroforest							habitat			Status	
			Ckh	Se	Co	Te	Saw	Ket.K	Camp	Tsu	Pek	P.106	E/M	
1	<i>Aethopyga mystacalis</i>	Burung madu jawa	√	√					√	√	√	√	√	Endemik
2	<i>Lonchura leucogastroides</i>	Bondol jawa	√	√	√					√		√		Endemik
3	<i>Macronous flavicollis</i>	Ciung air jawa				√	√	√	√	√	√			Endemik
4	<i>Orthotomus sepium</i>	Cinenen jawa	√	√		√	√	√	√	√	√			Endemik
5	<i>Rhipidura javanica</i>	Kipasan belang							√			√		
6	<i>Stachyris melanothorax</i>	Tepus pipi perak							√					Endemik



Figure 3.9 : *Aethopyga mystacalis*
Source : pinhome.co.id

small bird 12 cm this species uses nectar as its food. Apart from nectar, several small arthropods[2] and parasites



Figure 3.10 : *Lonchura leucogastroides*
Source : pinhome.co.id

Small bird, from beak to tip of tail about 11 cm. Javanese Bondol is a kind of small bird that eats rice and grains.



Figure 3.11 : *Pernis ptilorhynchus*
Source : pinhome.co.id

small body (14 cm) This bird is a type of bird that eats black beetle eggs, insects



Figure 3.12 : *Orthotomus sepium*
Source : pinhome.co.id

The body is small, which is 11 cm. This bird is endemic to Indonesia, and is a type of bird that eats caterpillars, spiders, small insects



Figure 3.13 : *Rhipidura javanica*
Source : pinhome.co.id

as a medium-sized body (19cm). This bird feeds on insects such as small caterpillars, small butterflies and worms



Figure 3.14 : *Stachyris melanothorax*
Source : pinhome.co.id

small body size (14 cm). This bird is a type of bird that eats black beetle eggs, insects

Learning Behaviour Analysis

human behaviour
in animal park

walk around
(circulation)

enjoy the view
(eye angle)

Ideal Circulation

ernest neufert in data architect book explain there are 6 type of circulation best circulation for nature base learning was the number 6 round tour (loop)

Round tour (loop) 6: similar to linear chaining 3, controlled circulation leads back to entrance.

this circulation concept determine as thematically concept it suitable for animal park circulation

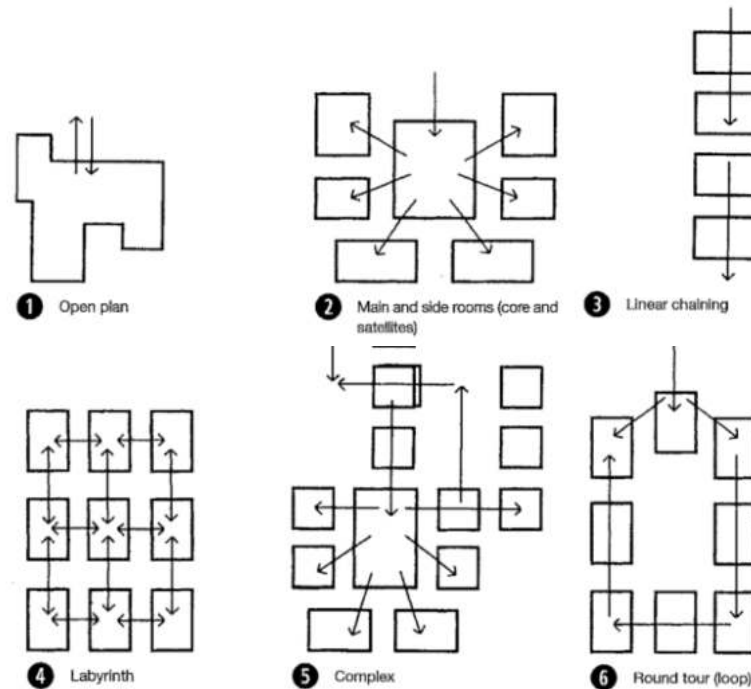


Figure 3.16 : Circulation Study
Source : ernest neufert: architect data 4

Image source : ernest neufert: architect data 4

Ideal Eye View

A flat angle of view without eye movement is the ideal eye angle, with an angle of great view of approximately 30°

With a viewing angle of 30° to the stage, the eye can receive the picture so that you can enjoy the whole park without looking to the right or left. So with this standard, so that it is clearly visible and comfortable to enjoy.

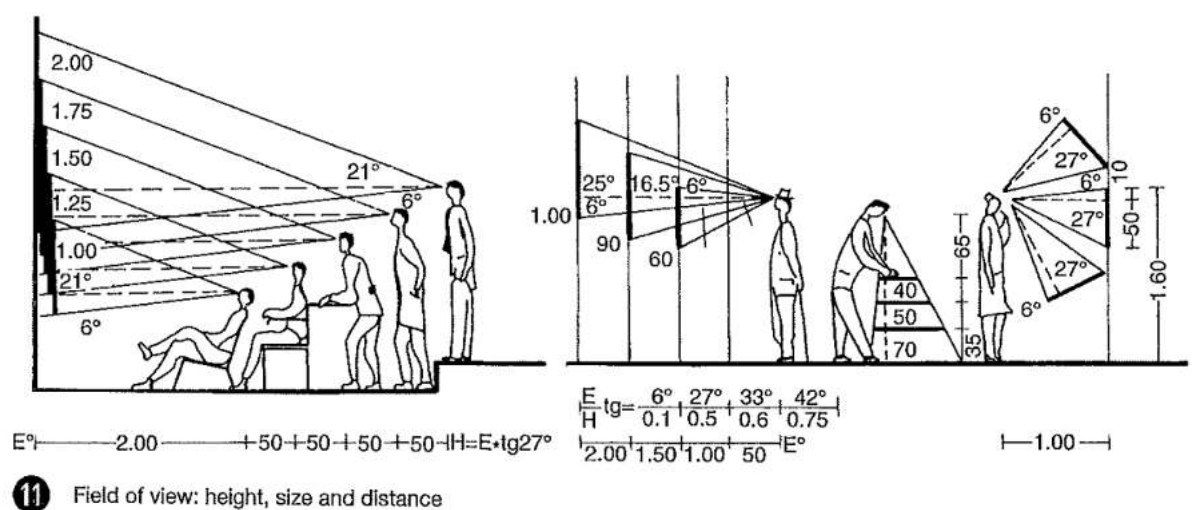


Figure 3.17 : Field of view: height, Size and Distance
Source : ernest neufert: architect data 4

Image source : ernest neufert: architect data 4

Learning Behaviour Analysis

Design aspects

Near to nature: The enclosure should correspond to the ideas of the visitors regarding the appropriate habitat for the animals, be aesthetically pleasing and give a generous impression.

Physical nearness: The nearer people can come to the animals, the greater the interest and the longer they stay.

Emotional nearness: Enclosure boundaries should scarcely be noticed.

Observation: Animal enclosures should work secretly and be an invitation to exploration (e.g. view into the enclosure through a cave or a waterfall). Routes should invite lingering, not passing an enclosure but rather leading to it. It should be possible to see only one enclosure from each location; distracting views, and also masses of people in front of the enclosure, should be avoided. Enable comfortable observation in a relaxed position, not into the sun or through a reflecting pane of glass; the visitor should look into a bright, lit enclosure from shadow (this also has the advantage that the animals do not immediately notice the visitors). Areas where the animals like to pass the time and are active should be clearly visible

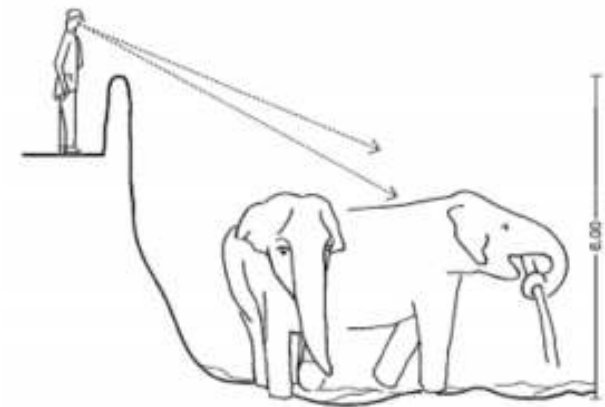
Information: Signage; sufficient information should be available

Accessibility: Access to the enclosures (only for the zoo keepers) is provided by dedicated roads and care areas; the appropriate animal catching and transport facilities are here.

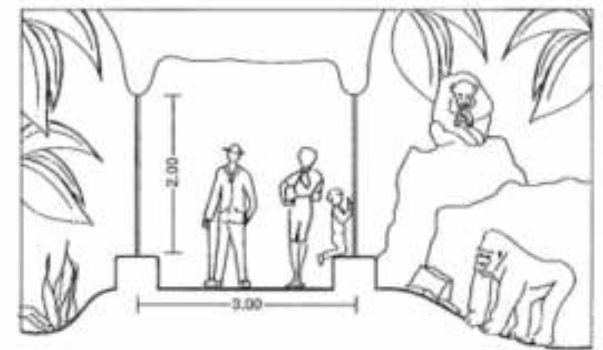
Barriers

Ditches were originally developed as dry ditches, but are today generally constructed as water barriers (moats) ± 8 . A natural appearance is advantageous, but the water becomes dirty quickly and the animals can leave the enclosure over the ice if it freezes over, so the water level therefore has to be lowered in winter. There are normally fences or walls to provide additional protection. Glass is becoming accepted by most zoos $\pm 8 + 0$, because it gives the impression of direct contact with the animals and also prevents the infection of animals by humans.

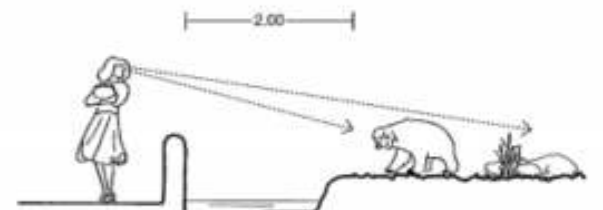
Iron bars disturb the visitor and the animal. The classic method of keeping animals in cages is therefore avoided in modern zoos.



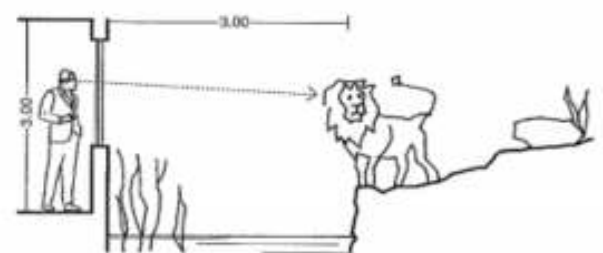
1 Concealed visitor position



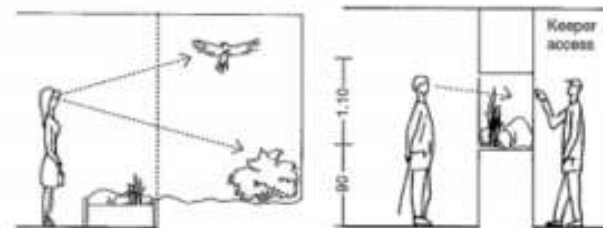
2 Indoor enclosure with glass corridor: view from dark into light



3 Water barrier: visitor and animal outdoors



4 Water barrier: visitor behind protective glass screen and animal outdoors



5 Aviary

6 Terrarium

Figure 3.18 : Barrier Study
Source : *ernest neufert: architect data 4*

PRECEDENT

STUDY

Protective Wing Bird Sanctuary

Chiang Mai, Thailand

Each year, thousands of birds are smuggled in and out of Thailand for their exotic colors and bird calls, to be sold on the world's growing black market. Rescued birds usually die in confinement because they are retained in cages for up to five years as evidence during prosecution of smugglers. The Bird Sanctuary in Chiang Mai in northern Thailand serves as both an educational facility and a bird rehabilitation center including a small hotel and bird viewing tower, in a site that simulates the natural habitat. Palm fiber, an agricultural waste, is used as a construction material for the building enclosure – the façade as habitat and food source for all birds in the area.

Site A (Green Hotel site) is an educational facility and homes for permanently injured birds

Site B (Open ground estate) is the rehabilitation facility that nurture the rescued birds, preparing them for returning to nature

LESSON LEARNT:

started with the awareness about the smuggled bird, this sanctuary had a complete facility from rehabilitation centre education centre bird viewing tower.

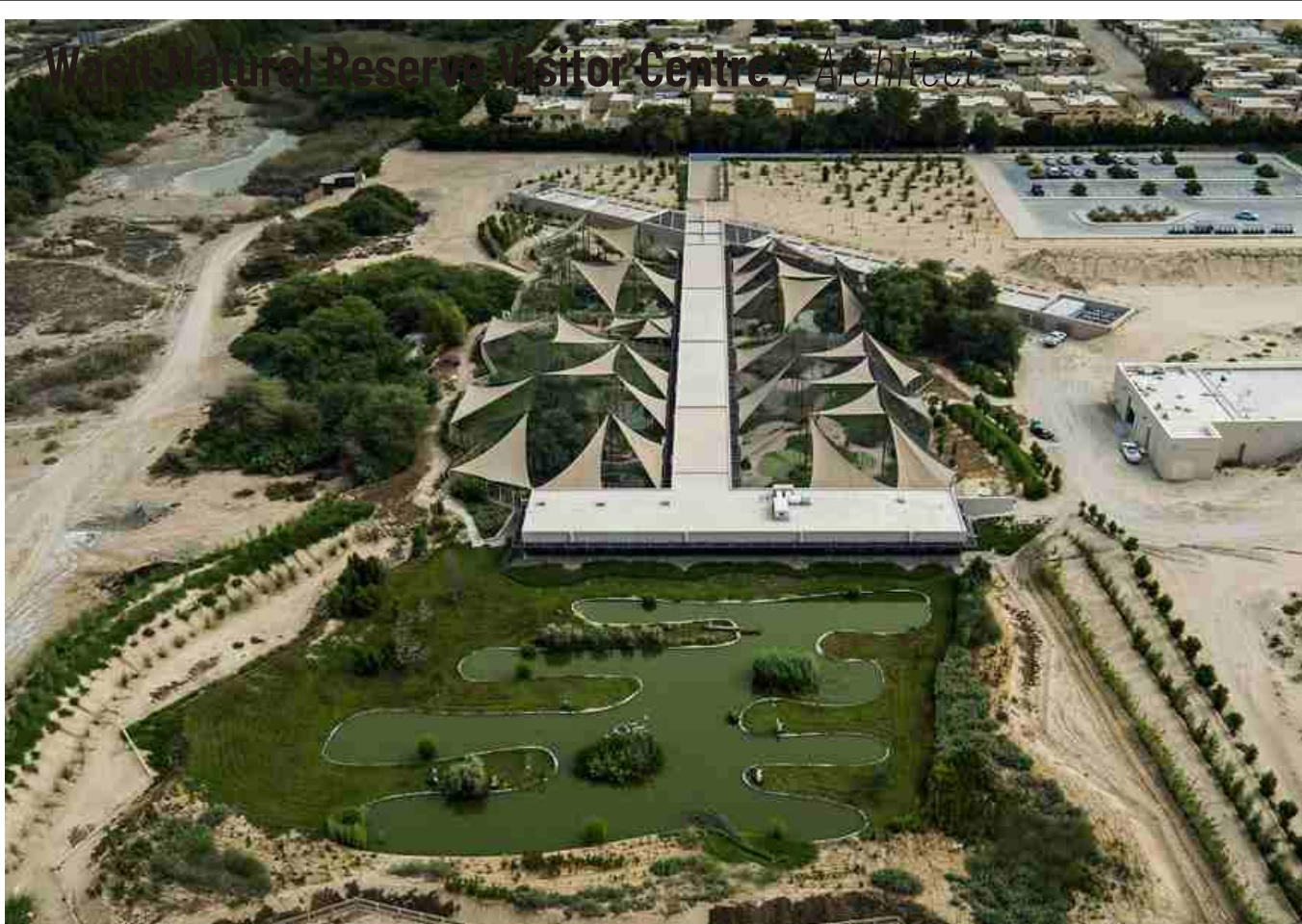
they separate the small bird and the raptor due to minimize the injured bird or eaten

not only care about the bird itself this building also aplicate green building aspect they minimize the zero carbon buy using waste farm material into secondary wall. this approach will attract to the bird for coming the bird wcthing tower



Figure 2.3 : APREB of Protected wing
Source : pinhome.id





Located in the Emirate of Sharjah, north of Dubai, the 4.5-square-kilometre site was originally a dump for both rubbish and waste water. The project to rehabilitate the area started back in 2005, and involved removing over 40,000 square metres of rubbish.

Wasit Natural Reserve features a mix of sand dunes, salt flats and lagoons, framed by three slender building volumes and a network of woven canopies.

It invites visitors to observe a variety of different birds in a natural habitat, but also helps to educate them about these species. Additionally, it provides facilities for researchers and accommodates a veterinary team.

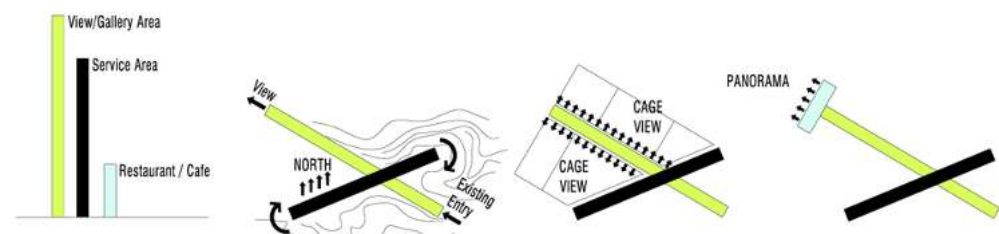
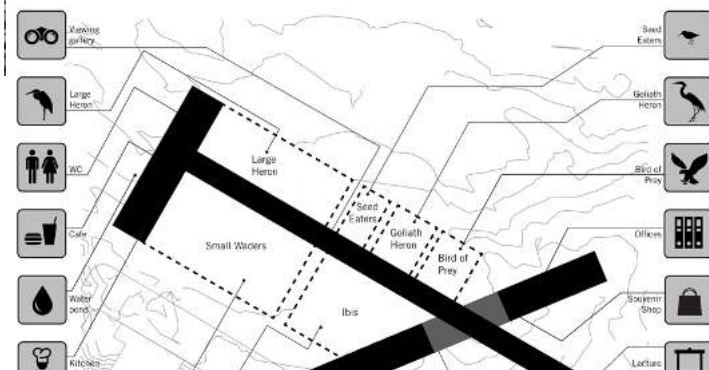
PROJECT LEARNT:

The architecture of the centre blends with its surroundings and uses the existing topography to minimise the visual impact on the natural scene

the spatial planning make a good bond between the bird and the human the bird can freely without disturbance the human who observe it

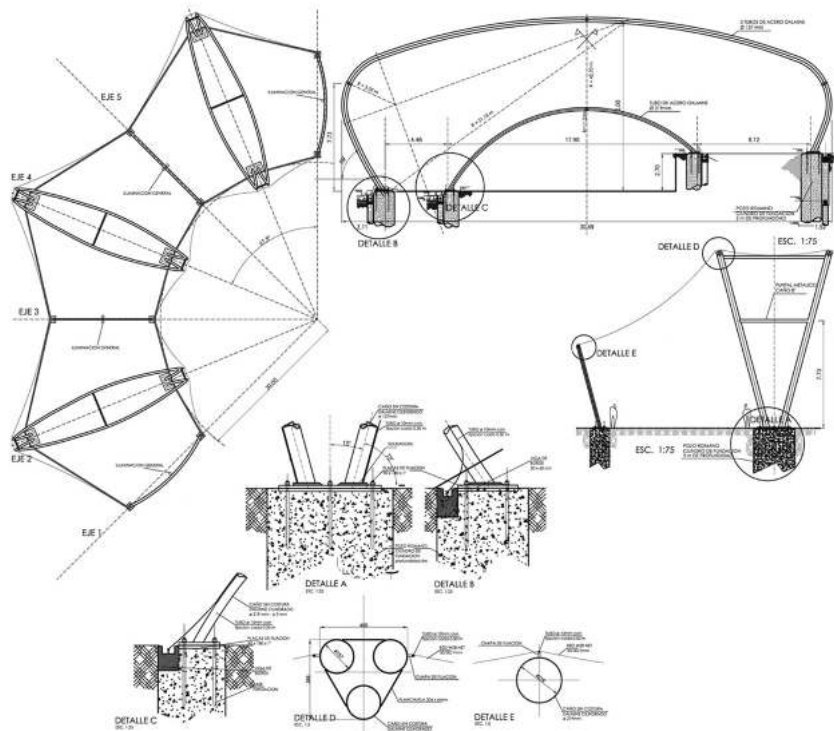
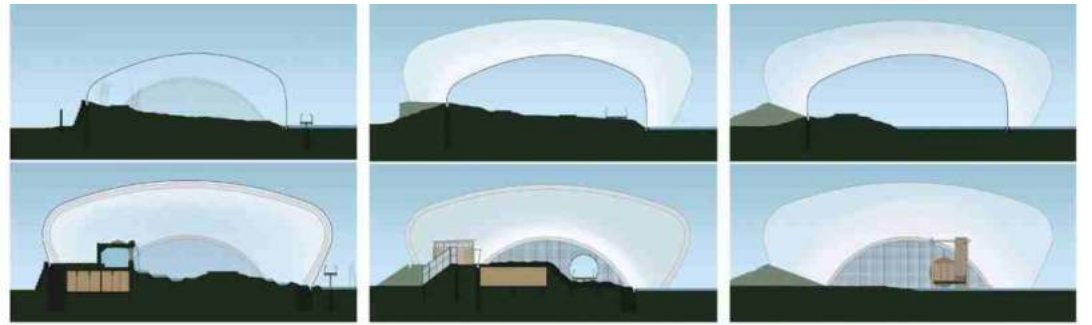
the sanctuary only use woven canopy it make a good visual impact for a bird could watch a blue sky while in the conservation

Figure 3.21 : Wasit Natural Resource Visitor Centre
Source : Archdaily .com



The firm of architects Hampton Rivoira won the contest of a specific program for the Temaikén Biopark in Argentina. The contest aims to develop a theme park with birds from all around the world. This program emphasized the concept of total immersion of visitors in the aviaries. The new Birds' place should replace the existing set of scattered smaller cages.

One of the challenges was to have a good technology for a very specific demand. The demand of covering almost one hectare of the birds' habitat with a net and a system of bearing arches, placed the architects in the difficult task of finding a system of tension and charge transfer from light industrial elements with complex geometries. Given this situation, it was present a tension between the reason and the intuition.



PROJECT LEARNT:

The demand of covering almost one hectare of the birds' habitat with a net and a system of bearing arches, placed the architects in the difficult task of finding a system of tension and charge transfer from light industrial elements with complex geometries. Given this situation, it was present a tension between the reason and the intuition.

The design and construction, by its technological and programmatic demand, are long, intricate, and subject to trial and error. This is how this dynamic process was, always with empathy between specialists and makers.

Figure 3.20 : Aviary, Bioparque Temaikén
Source : Archdaily.com

CHAPTER 04

CONCEPT & EXPLORATION DESIGN



Concept

Figurative Design

Analysis Of User

Activity on this bird conservation are preservation rehabilitation and education related to data architect from ernest neufert there is 3 kind of user in the animal park

the first one is the animal at this case the animal was bird, but there s a lot of kind bird in jatimulyo. ministry of environment state that consevation is only for protected animal. theres 12 species protected species in jatimulyo and several of them was endemic species

keeper at the animal park had a lot of role there are venetrian for medical checkup, animal keeper for statistic and logistic bird and management for facility support such us recepsionist, food court tenant, or security

the visitor can be domestic and internasional tourist open for all age user. this conservation open from 9am untill 16 pm



Figure 4.1 : User Zoo Analysis
Source : ernest neufert: architect data 4

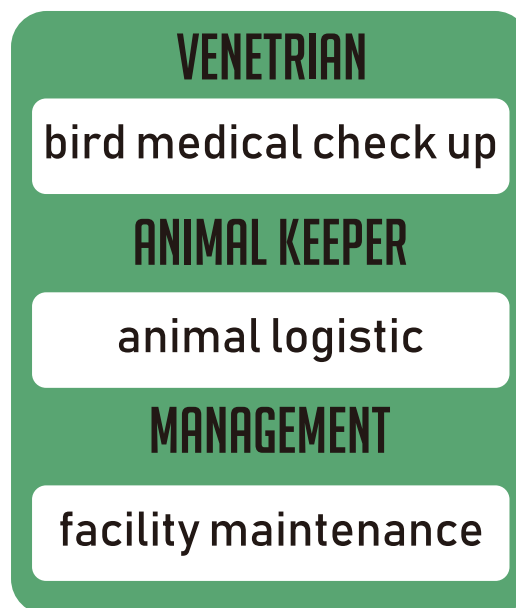


Figure 4.2 : User Analysis
Source : Author

Space Need

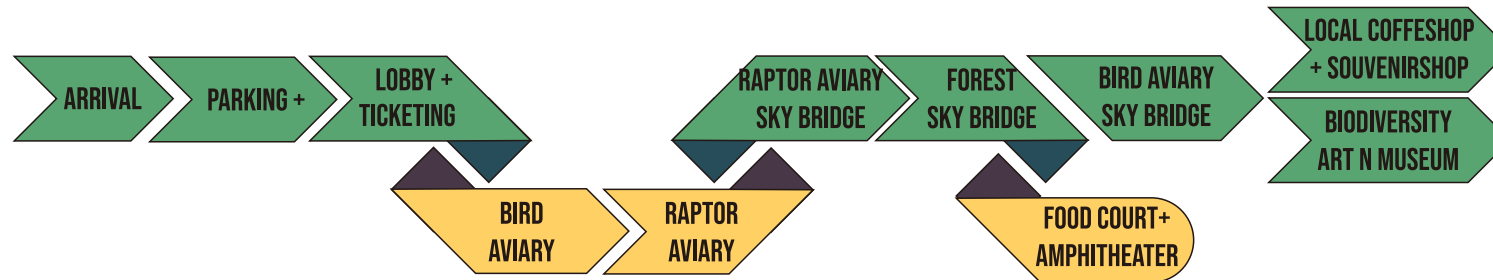
Table 3.1 : Space Need Analysis

<p>EDUCATION PURPOSE</p>	<p>BIRD PARK</p> <p>Show of variety endemic protected and unique bird who live in jatimulyo village</p>	<p>Animal Park</p> <p>a. have animal species that are collected at least 2 (two) taxa class; b. have protected species, animals that are not protected and/or foreign animals; d. have facilities for animal care</p> <p><small>P.22/MENLHK/SETJEN/KUM.1/5/2019</small></p>	<p>- PROTECTED BIRD ✓ - ENDEMIC BIRD ✓ - UNIQUE BIRD ✓ - TOURIST ✓ - MANAGEMENT ✓ - PARAMEDIC ✓</p>
<p>PRESERVATION PURPOSE</p>	<p>BIRD BREEDING</p> <p>breed space for endangered bird species</p>	<p>Breeding Aviary</p> <p>a. Sensitive of human activity b. Open space for freefly c. Shady tree for nesting</p> <p><small>RAPTOR CONSERVATION GUIDELINE 2019</small></p>	<p>- PROTECTED BIRD ✓ - ENDEMIC BIRD ✓ - PARAMEDIC ✓</p> <p>- TOURIST ✗ - MANAGEMENT ✗</p>
<p>REHABILITATION PURPOSE</p>	<p>BIRD REHAB CENTRE</p> <p>medical centre for bird species in jatimulyo</p>	<p>Bird Rehabilitation</p> <p>The Animal Rehabilitation Center is the place for carry out the rehabilitation process, animal adaptation, and release to their natural habitat</p> <p><small>P.22/MENLHK/SETJEN/KUM.1/5/2019</small></p>	<p>- PROTECTED BIRD ✓ - ENDEMIC BIRD ✓ - PARAMEDIC ✓ - MANAGEMENT ✓</p> <p>- TOURIST ✗</p>

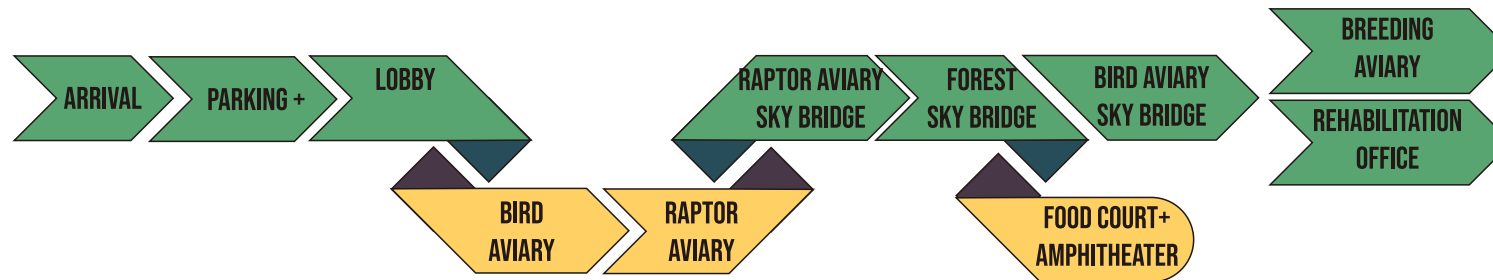
Source : Author

Analysis Of Userflow

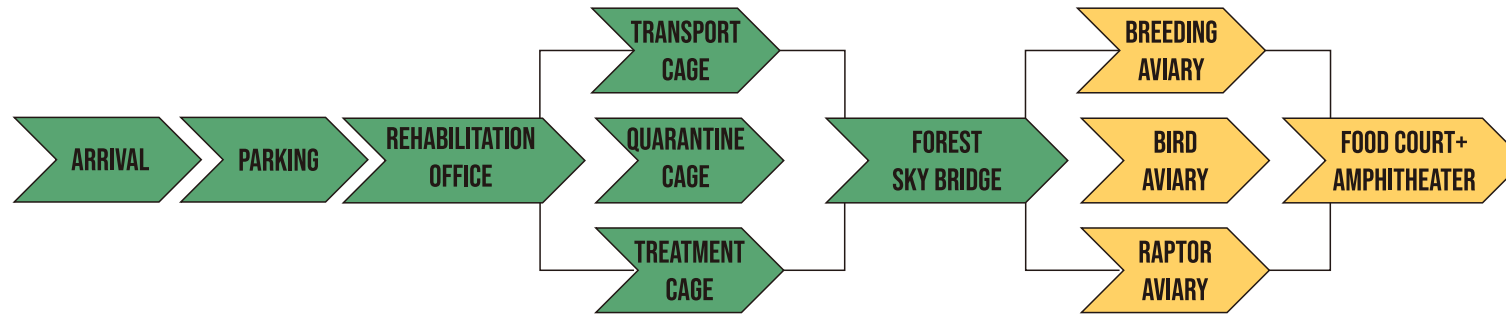
PUBLIC VISITOR



CONSERVATION MANAGEMENT



PARAMEDIC TEAM



LOCAL BUSSINES OWNER



Legend



Figure 2.3 : Analysis of userflow
Source : Author

Cage Literature Study

There are three supporting elements in the cage that must be provided, namely a **nest for laying eggs**, a **perch** and a **place to eat/drink**. These three elements must be available to meet the habits or behavior of birds in nature, both in terms of size and placement (Cameron 2007).

Cameron M. 2007. Cockatoos. Australia (AU): CSIRO Publishing

The construction of the cage that was made besides considering the creation of optimum conditions of temperature and micro humidity of the cage, was also intended to **optimize air circulation** and the **intensity of sunlight** entering the cage. The results of observations revealed that more than **50% of the room** in the cage **is an open space** that can be **penetrated by sunlight**. According to Prahara (1999),

Tempest. W. 1999. Maintenance, Breeding and Cockatoo Taming. Jakarta (ID): Spreader Self-subsistent.

at least 70% of the cage space must be an open space and can be penetrated by sunlight, because according to Zaky (2006), in the reproduction process of birds, sufficient intensity of sunlight is **needed to incubate the eggs** until the child care period.

Cages should be of simple design with maximum space for flying and ease of cleaning (length, width and height). According to species' needs, birds should have sufficient clear lines of flight.

Where possible the cage floor should be kept dry. Any area that is persistently wet may present a health hazard and suitable floor drainage should be provided. Solid floors are recommended for reasons of hygiene.

Contamination on floors should not be allowed to build up to a level where it puts the birds at risk of disease. If floors are covered with absorbent litter (sand, etc), the material should be totally replaced at regular intervals, at least twice a year is recommended.

Cages should be maintained in clean condition. In small cages a removable tray is an advantage.

BREEDING BIRD AVIARY DIMENSION

This table provide the minimum dimension of aviary sizes for breeding pairs. the dimension of holding cages fot juveniles or single sex adult bird and for highly domesticated bird may different from these advice be sought from a venetrian or experience bird keeper

each aviary have 6 species and each species had 4 -10 member contain 2 parent and children so the average number of each aviary 24 -60 bird

Calculation of Small bird

Size of protected small bird in 11- 20 cm. the 11 cm was bondol jawa and cinenen jawa and the longest one was kipasan belang so the aviary size shuld be $3600 \times 60 = 96000$ square cm and the height of aviary was $60 \times 60 = 3600$ square cm

Calculation of Raptorbird

The eagle size was 27 - 75 cm. so the minimum area was 25.000 square cm the number of 60 so $25000 \times 60 = 1.500.000$ square cm and the height was $60 \times 60 = 3600$ vm

TABLE 1

Minimum Indoor or Suspended Cage Dimensions

Size of bird (approx. length in cm)	Minimum Floor Area (Square. cm.)	Number of Birds	Minimum Height (cm)	Increased floor area for each additional bird. (square cm)
10	1,000	2	34	500
20	1,600	2	34	800
30	5,000	2	70	2,500
40	8,000	2	70	5,000
50	22,500	2	100	7,500
90	36,000	2	120	12,000

Source : Guideline for the care and welfare of caged bird

TABLE 2

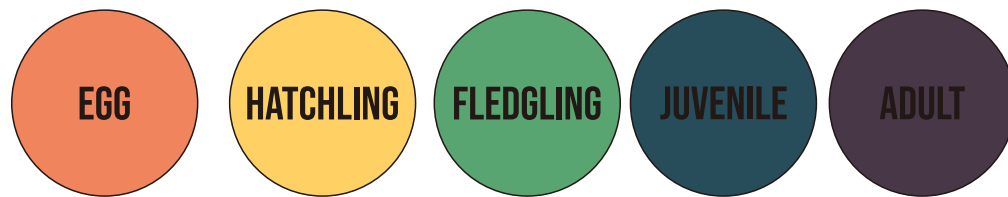
Minimum Outdoor Aviary Dimensions

Size of bird (approx. length in cm)	Minimum Floor Area (square cm)	Number of Birds	Minimum Height (cm)	Increased floor area for each additional bird. (square cm)
10	3,700	2	180	1,800
20	7,200	2	180	3,600
30	10,000	2	180	5,000
40	15,000	2	180	7,500
50	25,000	2	180	12,500
90	50,000	2	180	25,000

Source : Guideline for the care and welfare of caged bird

Building mass Concept

1st understanding bird lifecycle
bird had 5 lifecycle stage



2nd understanding need of bird conservation

after understand need of bird conservation + education purpose,
there are 5 mass needed to support this conservation



3rd understanding behaviour of bird

imigrant bird always fly with v formation during migration season for
protect their community, they have to migration to sustain their life.
the aim of this bird conservation also to protect the bird and sustain
their species

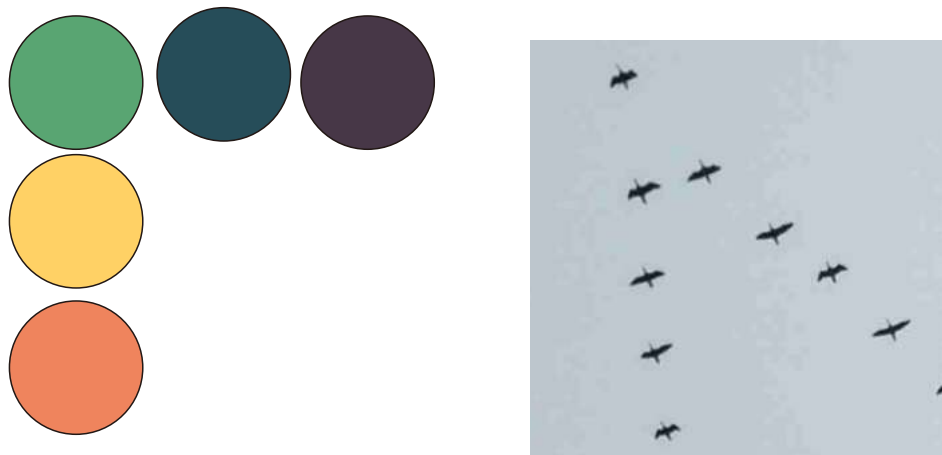


Figure 4.3 : Building Mass Concept
Source : Author

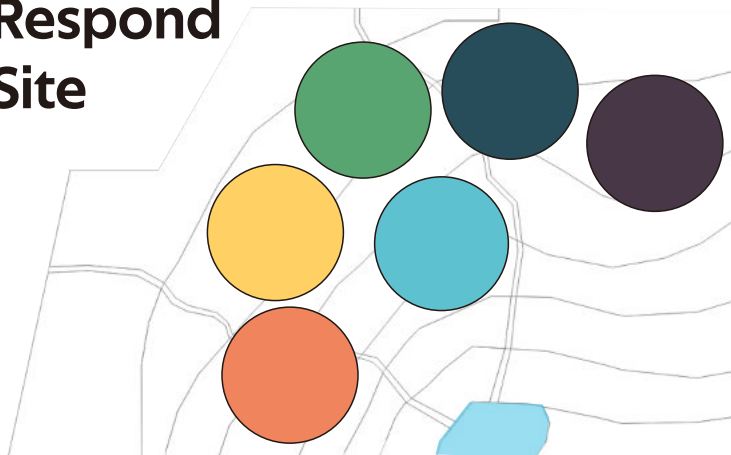
Room Zoning Concept

Understand Need



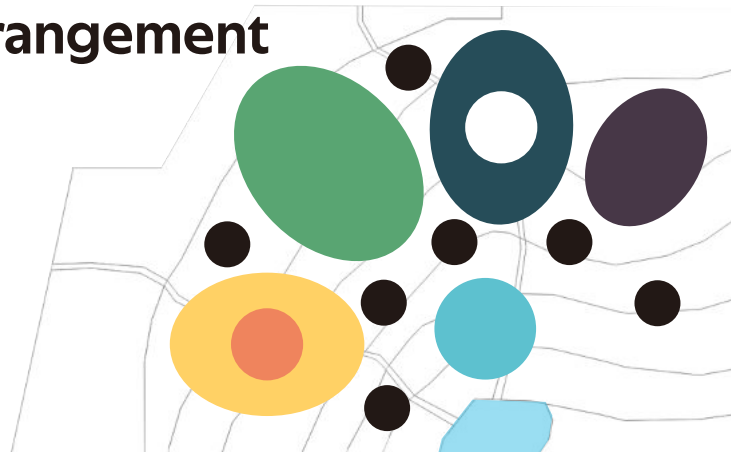
every zone had different rule like the small bird cant live in raptor zone because it can be prey for raptor, the rehabilitation need more calm situation the tourist prohibited to entre this site. breeding aviary is the sensitive one this zone should have less human activity because it can distract bird while breeding this conservation had 2 Building one for support the tourism and the other one for provide proper paramedic team for bird rehabilaiaon. this conservation also support bird atraction the amphitheater combine with foodcourt

Respond Site



The building mass follow the contour line to settle in high slope. the existing site each slope had different 3 meter height.and had 8 layer slope. the benefit of buliding mass at the high slope and near the road is to ease evacuation . the blue zone in the south east is water zone area that area is drinking place for lo of species bird in the forest.

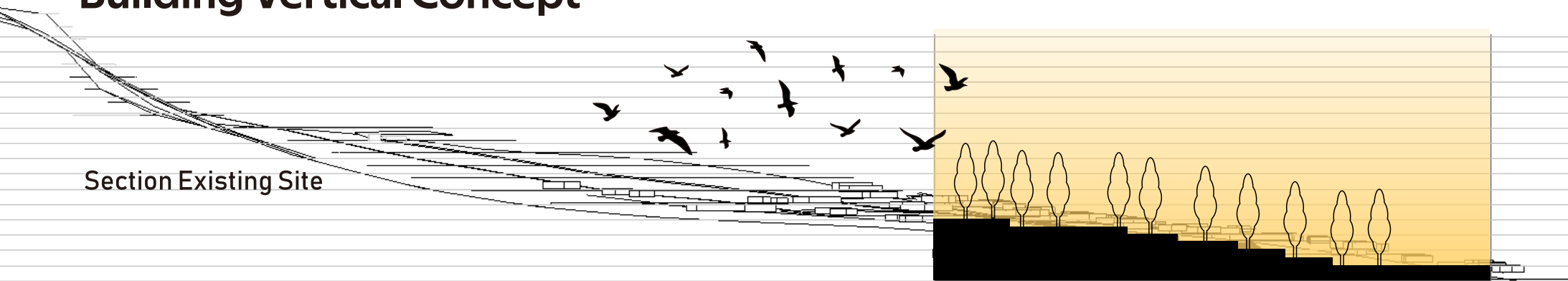
Mass Arrangement



transform the rounded shape into oval to modify indoor comfort and emphasize aviary area. the main building combine with bird aviary to minimize building mass in this site the benefit of minimize mass is to minimize travel time in aviary .the bird who live in this aviary had body size around 11-15 cm. the avairy size should consider the intimate distance between the bird and visitor

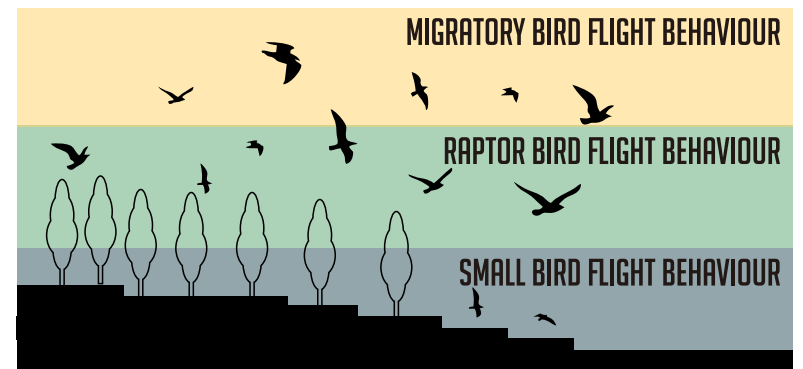
Figure 2.3 : Building Zoning Concept
Source : Author

Building Vertical Concept



Bird Flight behaviour

every level of height had different bird species because not all of bird can survive in high velocity wind. especially in jatimulyo vilage there's a lot of bird species from migratory until endemic / local bird, theres a three level the lowesr one was small bid because they seek their food in the ground such us paddy field at the midle level was the local raptor who live in jatimulyo the raptor bird seek their prey from sky and the highest level was migratory bird because to survive in high velocity wind the bird need V formation migratory bird fly far from the ground they avoid colition with building or tree



Human Eye Level

Human sight have a comfort eye level angle. to enjoy this bird park the design should consider it to enhance the experience of user. there are 3 level of view and each view can have a different of bird species. in this aviary have a two type bird, the raptor live in high trees to avoid predator and the small bird live in the ground to close with they food



Outdoor & Indoor Experience

The goals of this conservation is to preserve threatened species. the bird who live in this aviary only the protectected and the endemic bird . the other and native species are already in the forest. the tourist also can enjoy the native bird species in jatimulyo by by bird watching tower through walk on sky bridge ro walk on the land with avi tour guide. the height of the aviary was 40m height it based on calculation of standard

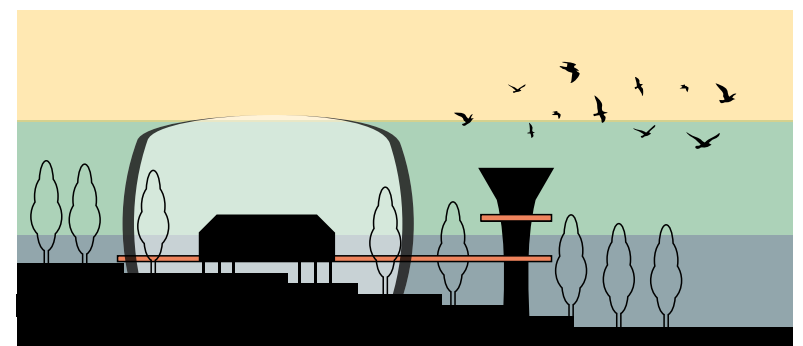
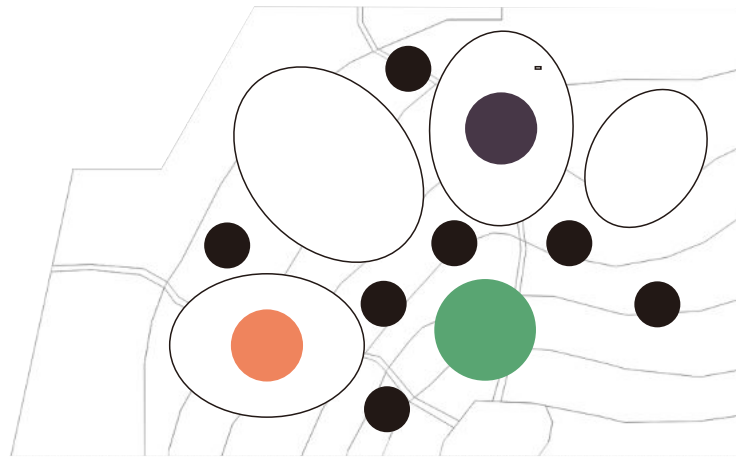


Figure 4.6 : Building Vertical Concept
Source : Author

Room Programing Concept



- AVIARY
- REHAB BUILDING
- TOWER
- MAIN BUILDING
- RIVER
- FOODCOURT

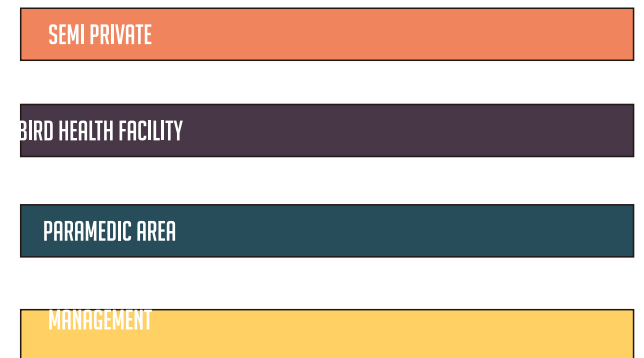
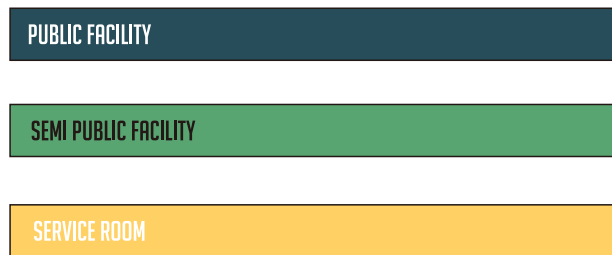
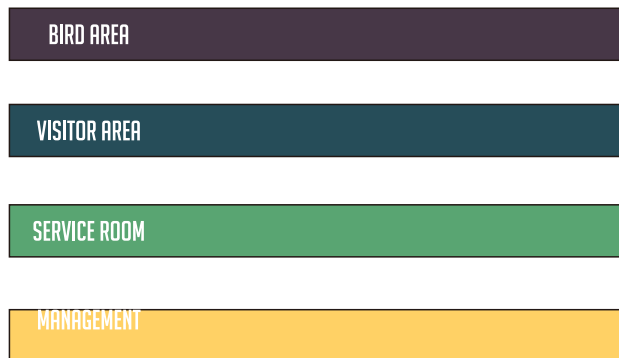
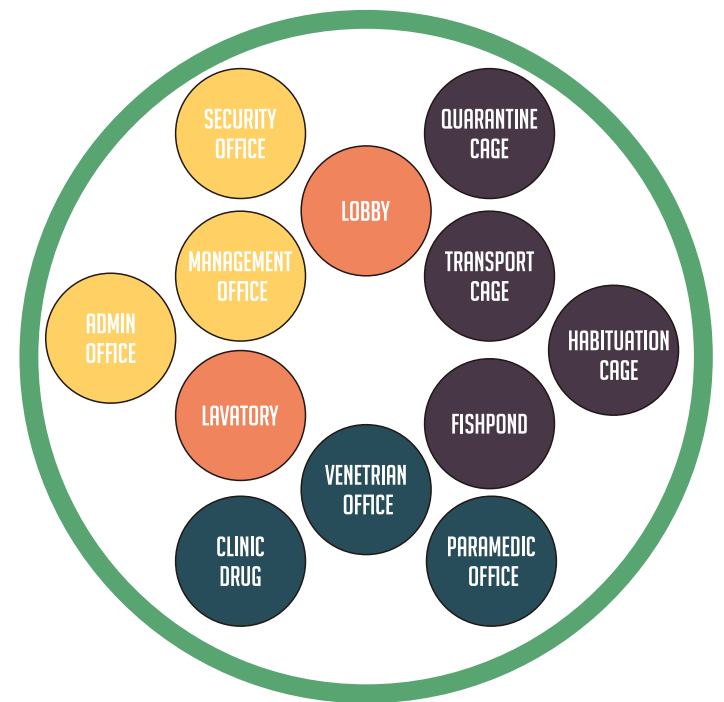
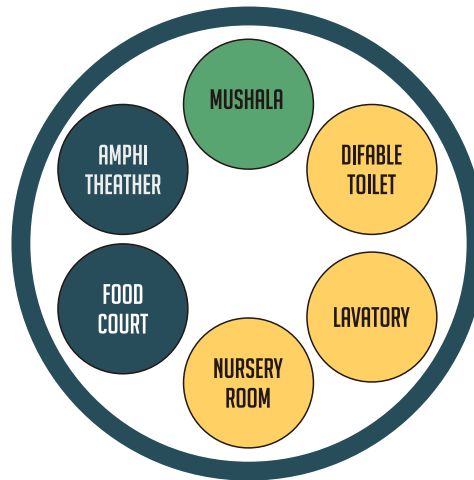
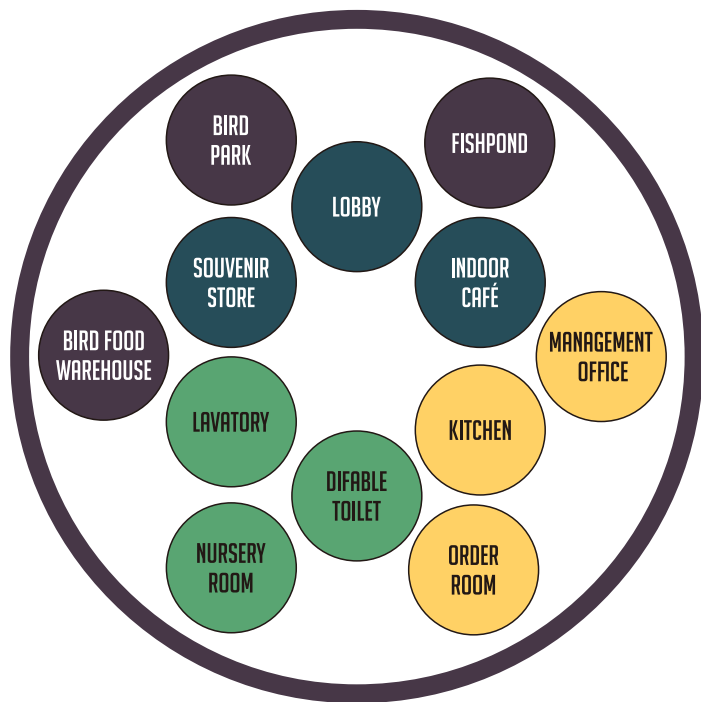


Figure 4.6 : Room Programing Concept
Source : Author



Figure 4.6 : Building Vertical Concept
 Source : Author

CHAPTER 05

DESIGN RESULT DESCRIPTION

DESIGN

DESCRIPTION

SITUATION PLAN



From the Situation plan the conservation site had 2 acces for entre the site from the north and the wes site at the north side there s a private parking for management and the paramedic team and at the west of the site had car, bus, and motorcycleparking

12 BUS
40 CAR
144 MOTORCYCLE
20 CAR (PRIVATE PARKING)

PARKING CAPACITY

Figure 5.1 : Situation Plan
 Source : Author

SITEPLAN

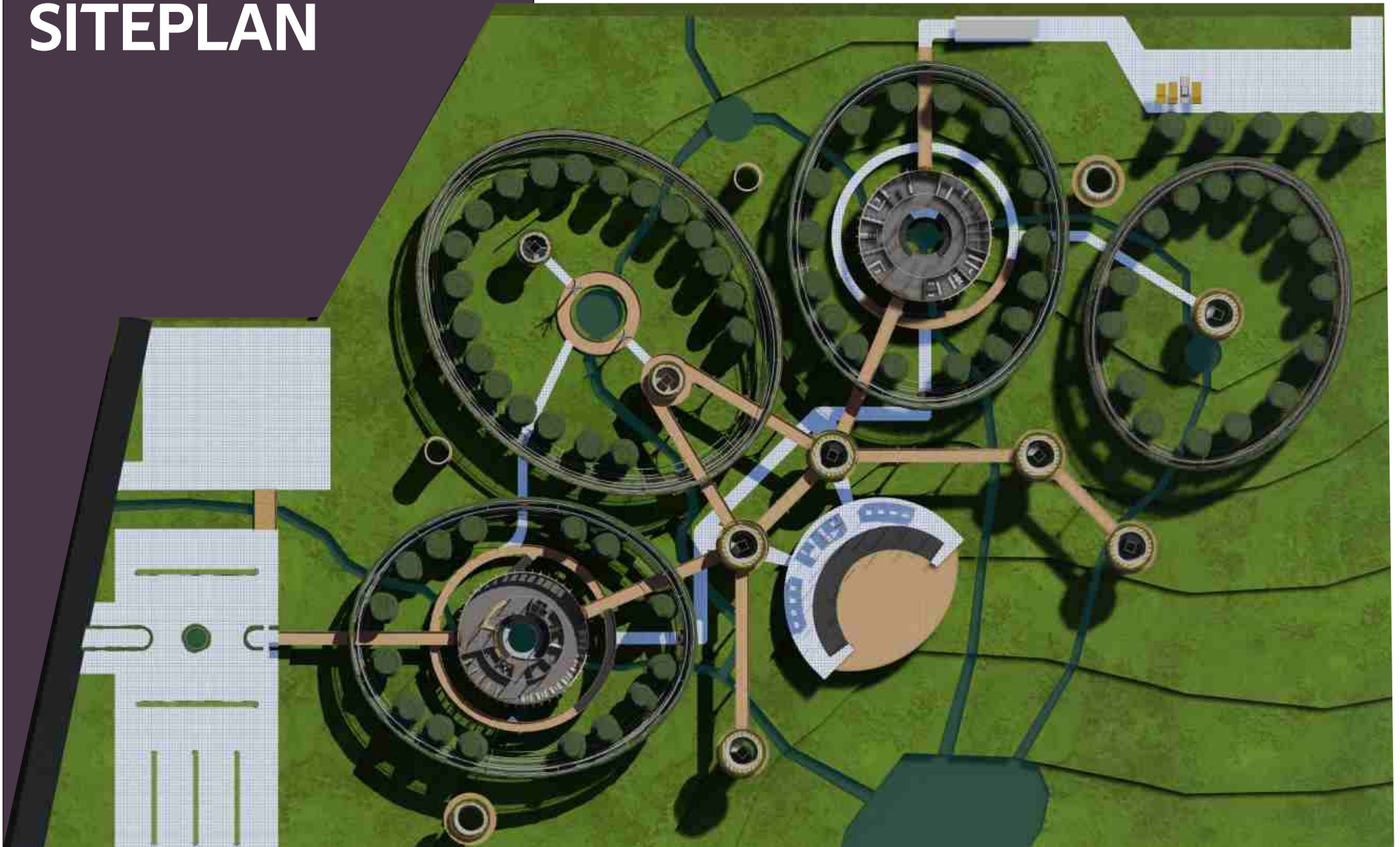


Figure 2.3 : Siteplan
Source : Author

GROUND SITEPLAN



Figure 2.3 : Siteplan
Source : Author

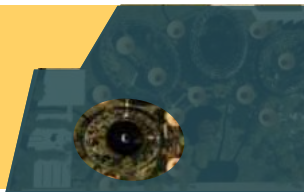
The Siteplan had 2 level because of contour at the site. this site had 8 contour level and each contour had 3 meter high the west site located at top of contour (8th level) and the north site located at 7th contour 2 building at this conservation at the top of contour and the Food Court at 4th contour

this site had 2 source of water there are from mudal river (north) and kembang soka waterfall (west) after site development considering need of source of water in each aviary we split 2 water resource into 4 water resource so the increase of source was man made river and at the ending of this 4 source was at kembang soka waterfall

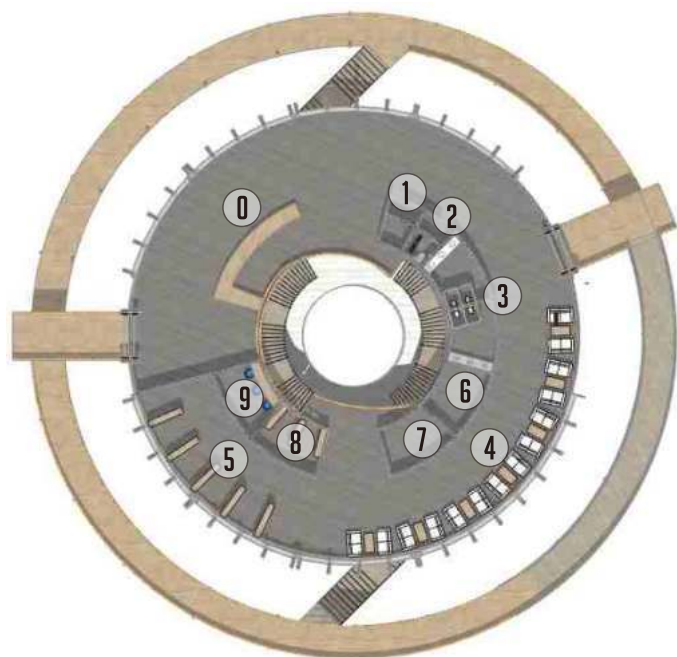
Small Bird Aviary



at this aviary had an main building to entre the aviary this aviary had 3 level the first one was entrance the second fish pond area and the lowes one to access the foodcourt

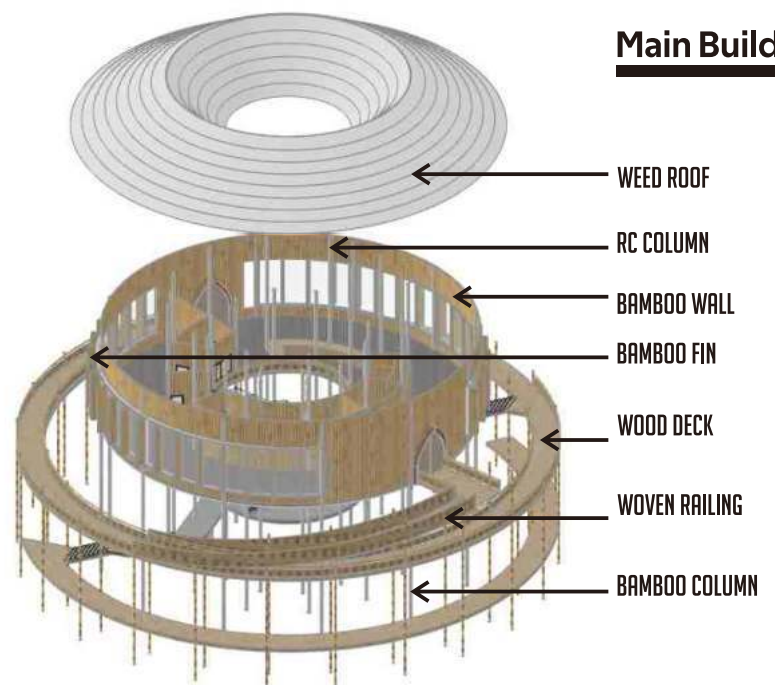


- tourist enjoy this aviary with walk on land
- tourist can take a photograph of bird but from a distance
- feeding are prohibited because 90% of bird here are insectivore



0. LOBBY
1. NURSERY ROOM
2. DIFABLE TOILET
3. LAVATORY
4. INDOOR CAFÉ
5. SOUVENIR STORE
6. ORDER ROOM
7. KITCHEN
8. BIRD FOOD WAREHOUSE
9. MANAGEMENT OFFICE

Figure 5.5 : Small Bird Aviary
Source : Author



Main Building

WEED ROOF

RC COLUMN

BAMBOO WALL

BAMBOO FIN

WOOD DECK

WOVEN RAILING

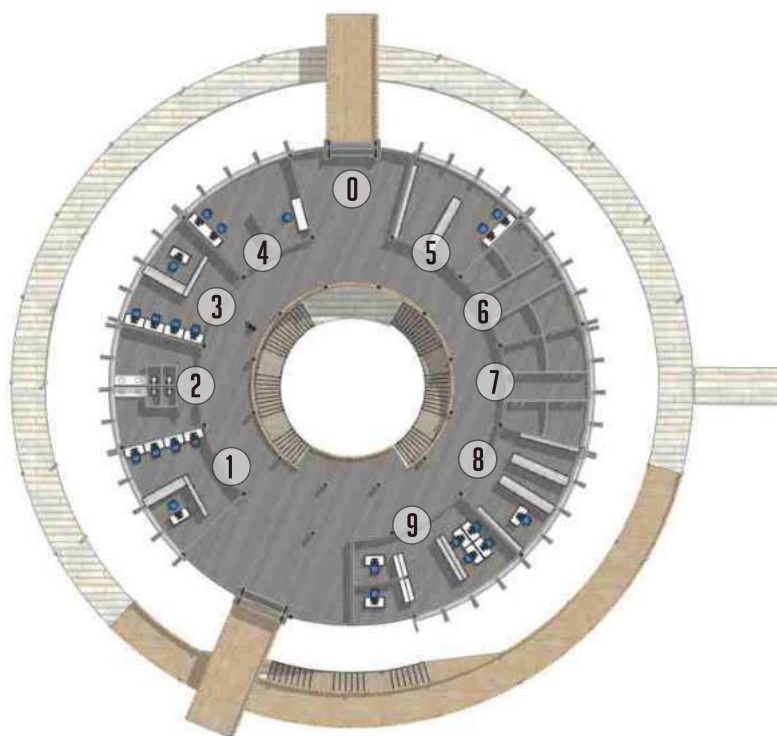
BAMBOO COLUMN

Rehabilitation Bird Aviary

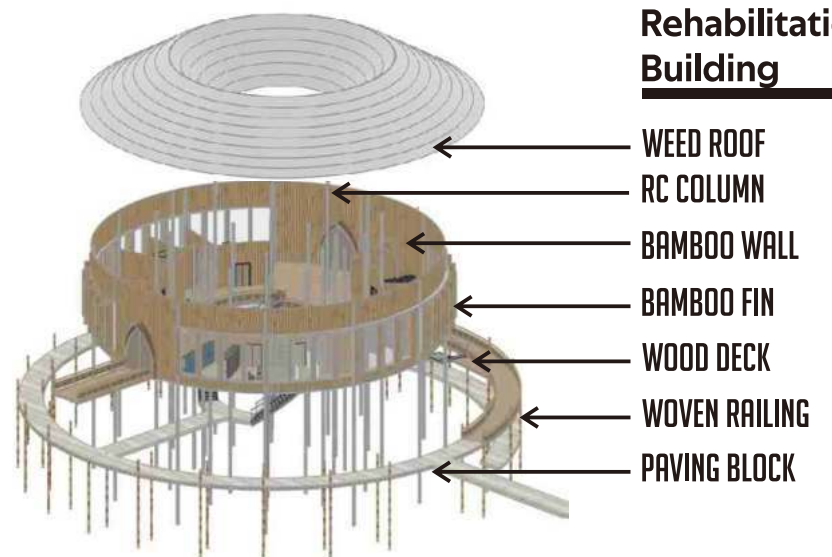


the rehabilitation aviary had indoor and outdoor habituation new injured bird will enter transport cage first after the bird already identified the bird enter the quarantine cage and at the end before the bird release at the forest they enter outdoor habituation to make sure the bird health

- tourist are prohibited to enter this aviary
- only animal keeper and medic team can enter aviary
- Have 2 access from sky bridg and private parking area



0. LOBBY
1. MANAGEMENT OFFICE
2. LAVATORY
3. ADMINISTRATION OFFICE
4. SECURITY OFFICE
5. FOOD WAREHOUSE
6. QUARANTINE CAGE
7. TRANSPORTATION CAGE
8. CLINIC & DRUG
9. PARAMEDIC3 OFFICE



Rehabilitation Building

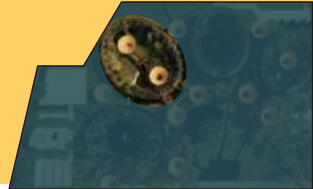
- WEED ROOF
- RC COLUMN
- BAMBOO WALL
- BAMBOO FIN
- WOOD DECK
- WOVEN RAILING
- PAVING BLOCK

Figure 55.10 : Rehabilitaion Aviary
Source : Author

Raptor Bird Aviary

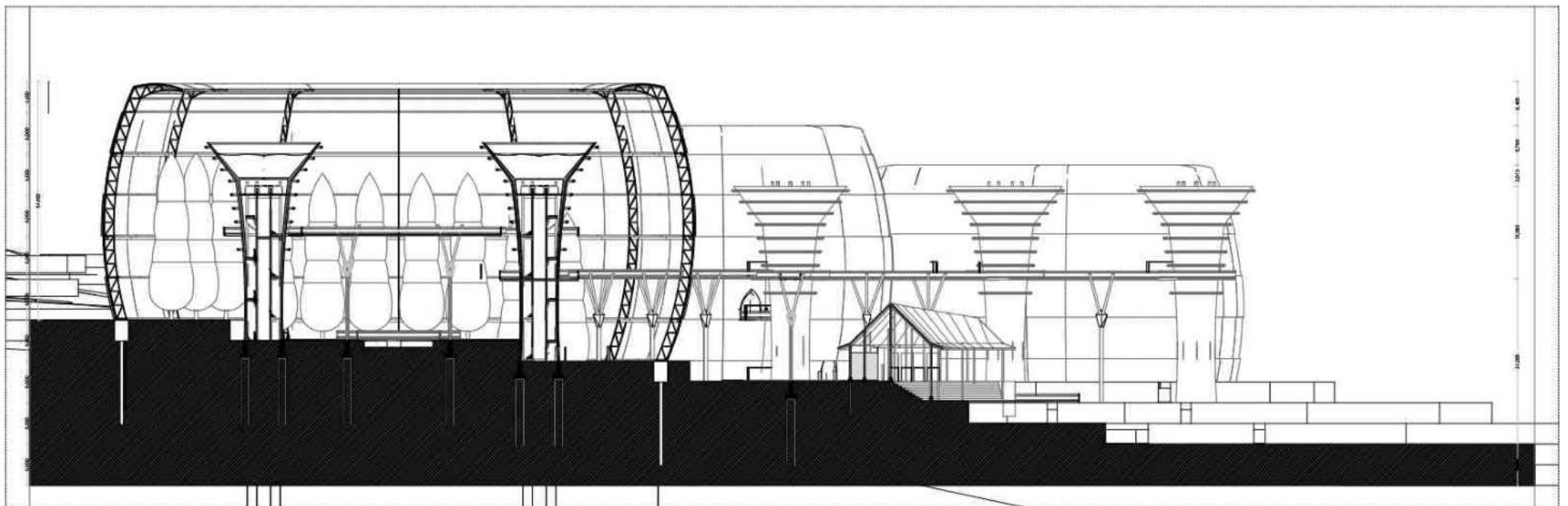


raptor aviary contain of high bird watching tower to enhance the view because most of eagle live in the high tree to support the food of eagle



- tourist enjoy this aviary with walk in sky bridge
- there is fishpond for raptor prey. the visitor prohibited to take fish
- tourist can take a photograph of bird only from sky bridge

Figure 5.5 : Raptor Bird Aviary
Source : Author

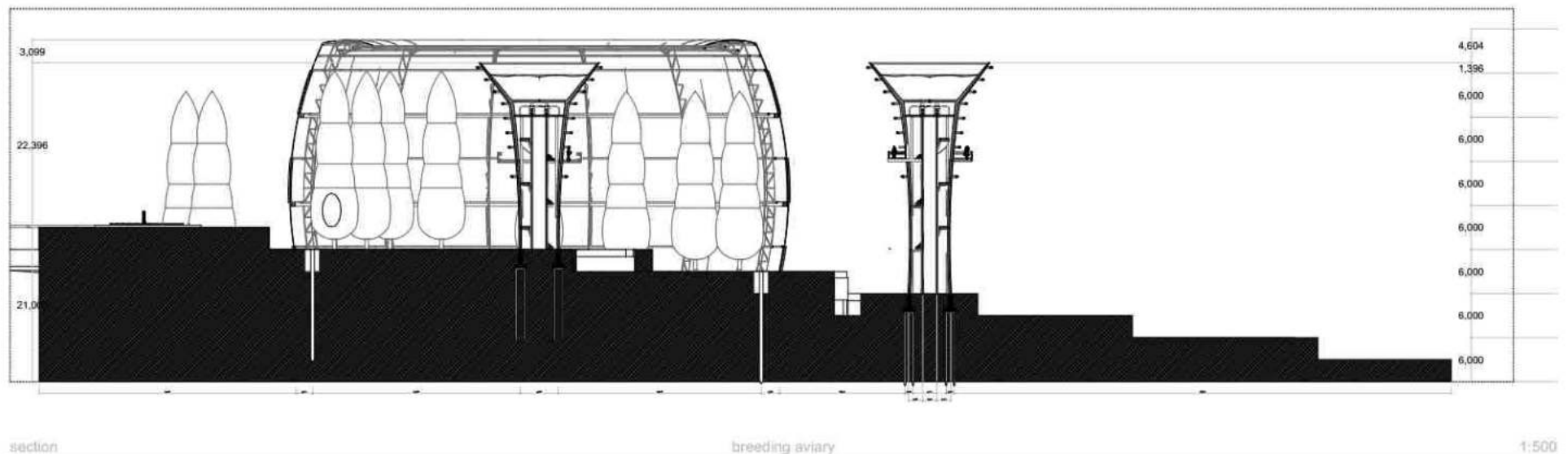


Breeding Aviary



The Breeding aviary only use for same species and seasonal event. it can prevent the bird carnivore eat small bird such as eagle who set the small bird as their prey

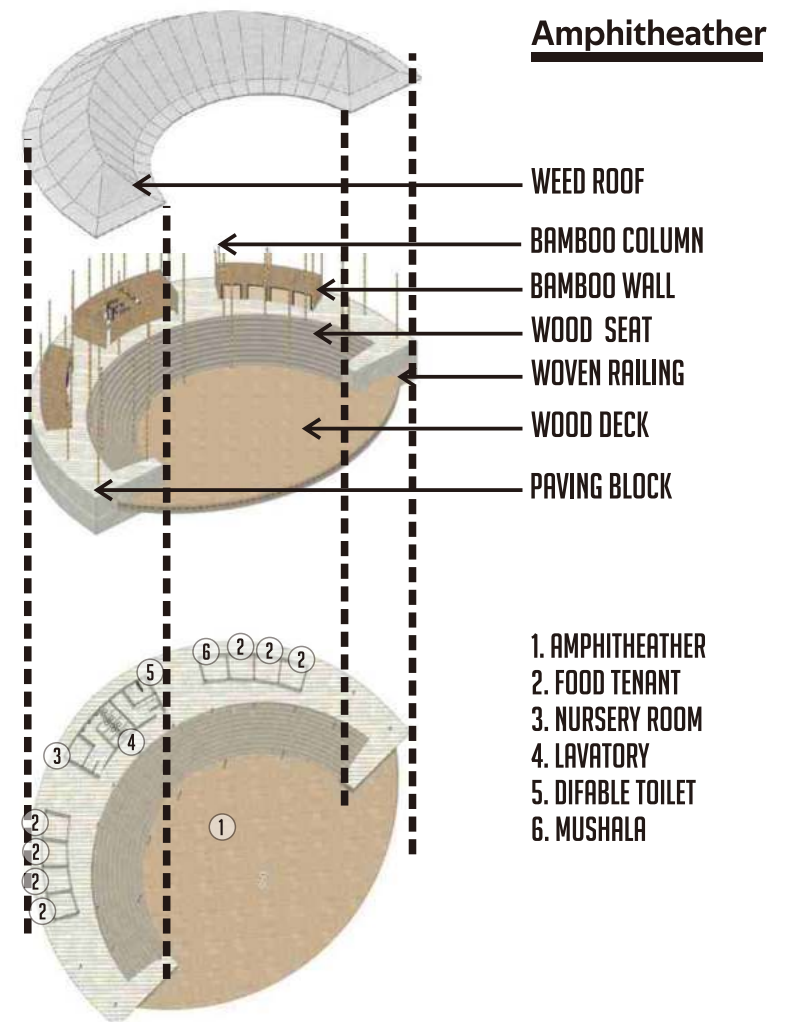
- tourist are prohibited to enter this aviary
- only animal keeper and medic team can enter aviary
- the acces only from Rehabilitation Aviary



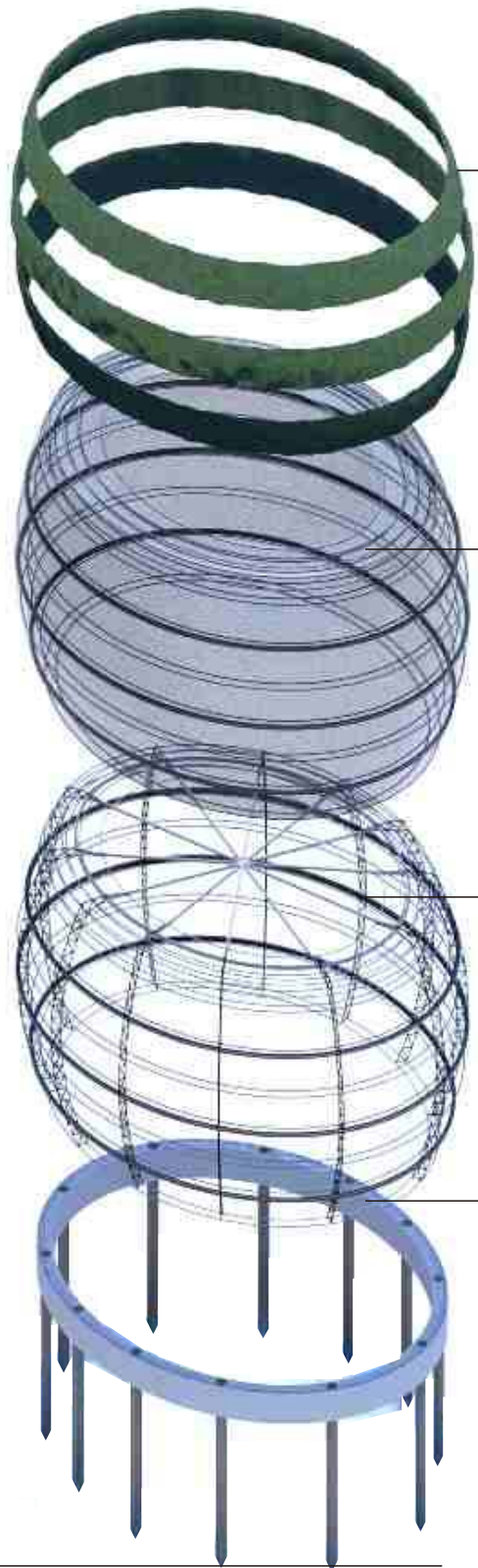
Foodcourt + Amphitheater



the Foodcourt + Amphitheater located at centre of the site. this placement enhance forest view and kembangsoka waterfall. the function of the amphitheater for bird release event and other attraction. and the concept of the foodcourt was picnic in the forest thats why there's no bench and table



Aviary Design



VERTICAL PLANT

this Aviary design add the vertical plant feature to provide the place for roosting and food resource. the vertical plant use native orchid plant . beacuse Jatimulyo Village have an Orchid cultivation. the aplication of vertical orchid plant at this design also promote the beauty of jatimulyo orchid

WIREMESH

this aviary need have some cover to protect the bird from ilegal huntre and predator. the material of this cover using steel wiremesh m4 .the benefit of this material easy to bend and strong enough handle high velocity wind

STEELHOLLOW STRUCTURE

the form of this aviary was stretched Dome, Dome Structure aplicated and this design the material of structure was a bended Holow Steel

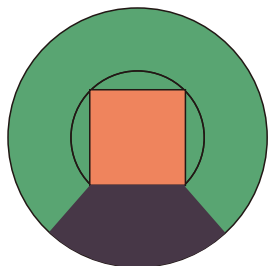
BOREPILE FONDATION

the height of this aviary is 42 meter suitable of the fondation structure was bore pile deep fondation the deep of structure was 15m and using reinforce concrete

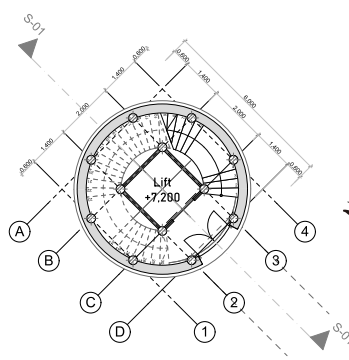
Figure 5.1 : Aviary Design
Source : Author

Bird Watching Tower Design

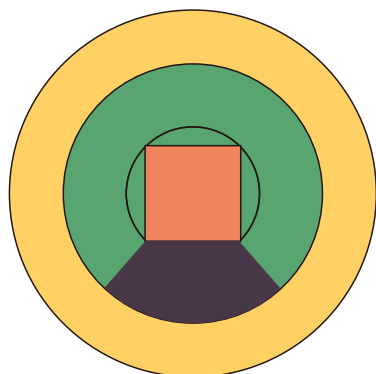
GF PLAN



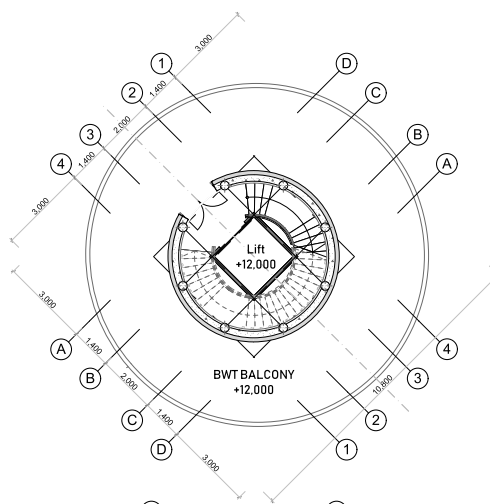
the groundfloor of the bird watching tower only contain of standart lift with 4m² and evacuation plan with 1m stair



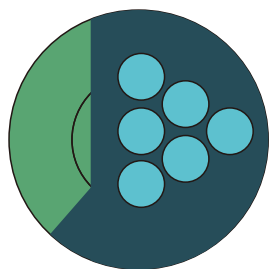
BALCONY



main function of bird watching tower is the balcony tower to had wide view of forest the length of this balcony is 3m



WATER CONSERVATION



Another function of BWT is rain water catchment. this function answer water crisis in dry season at jaimulyo village

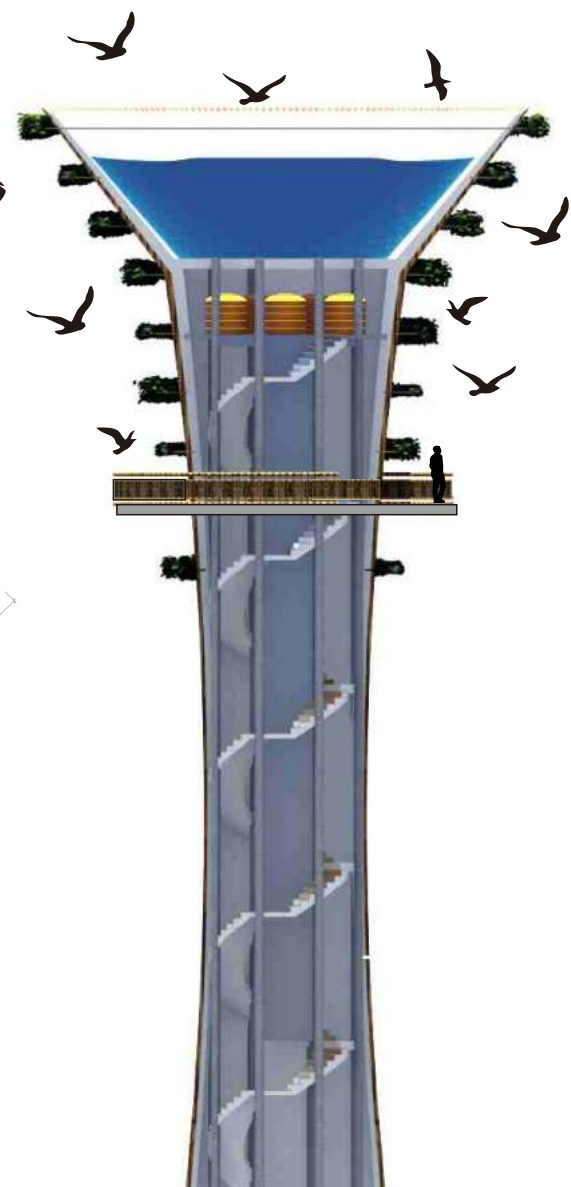
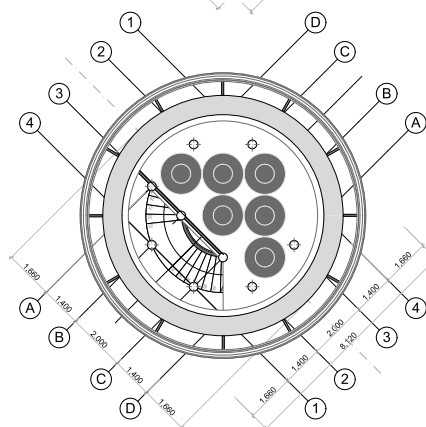
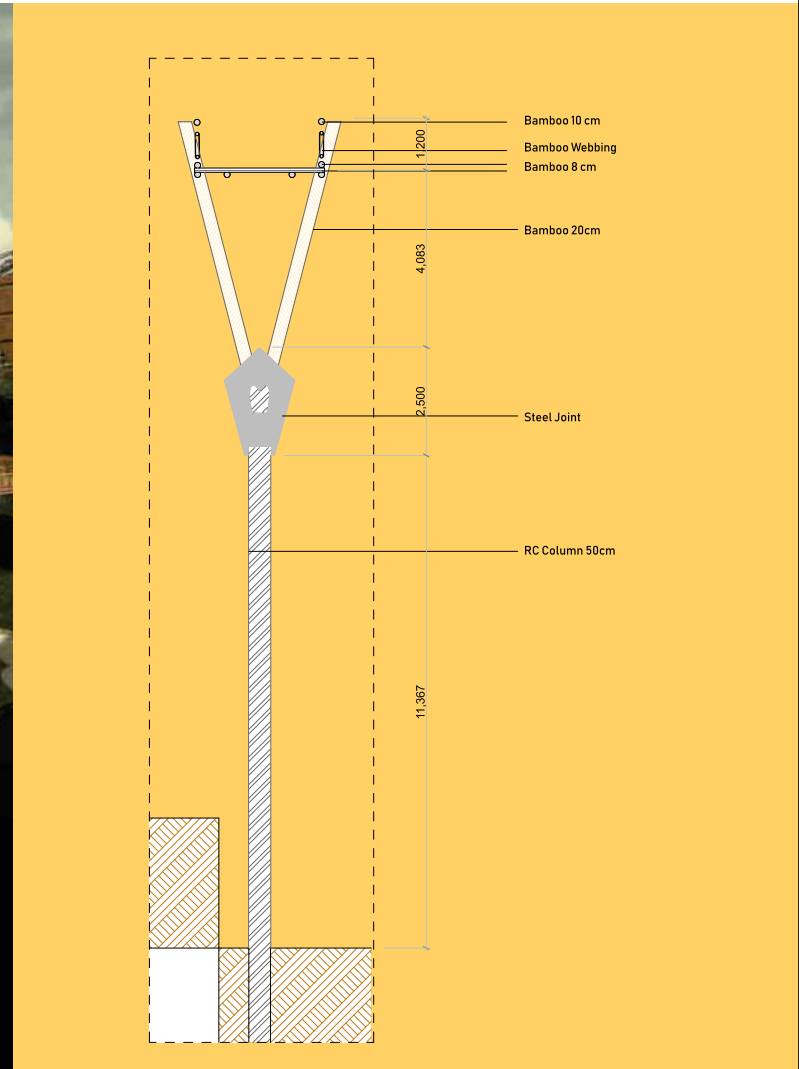
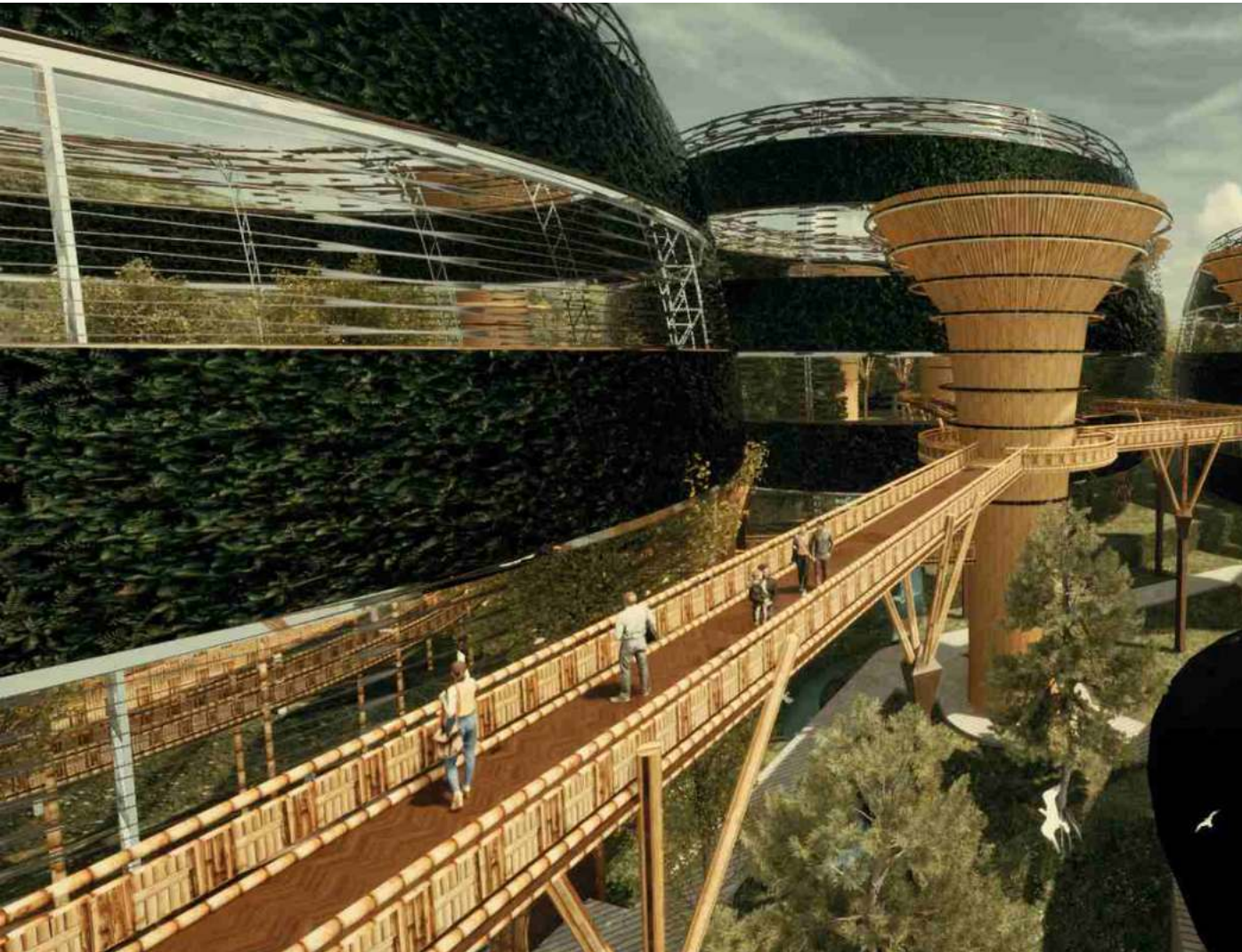


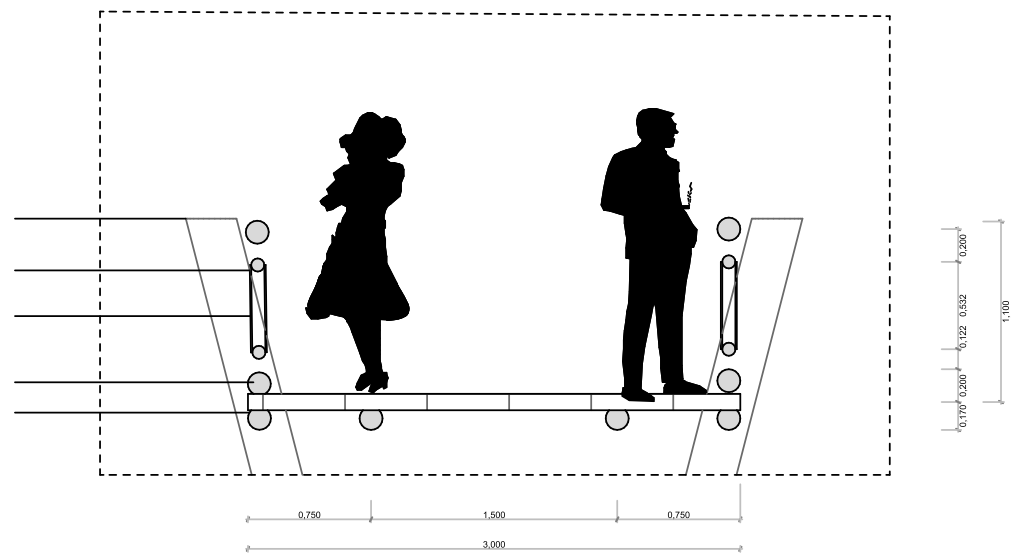
Figure 5.1 : Bird Watching Tower Design
Source : Author

Sky Bridge Design



the height of Skybridge is about 30meter from the ground. the structure is combination of reinforce concrete and bamboo this combination adaped to to merge with material of the bridge casue material of bridge was bamboo and wood plank

- Bamboo 20 cm
- Bamboo 5 cm
- Bamboo Webbing
- Bamboo 10 cm
- wood plank 5 cm



section

SKY BRIDGE DETAIL

1:50

BUILDING PERFORMANCE

EVALUATION

Space Syntact Simulation

BIRD AVIARY

RAPTOR AVIARY

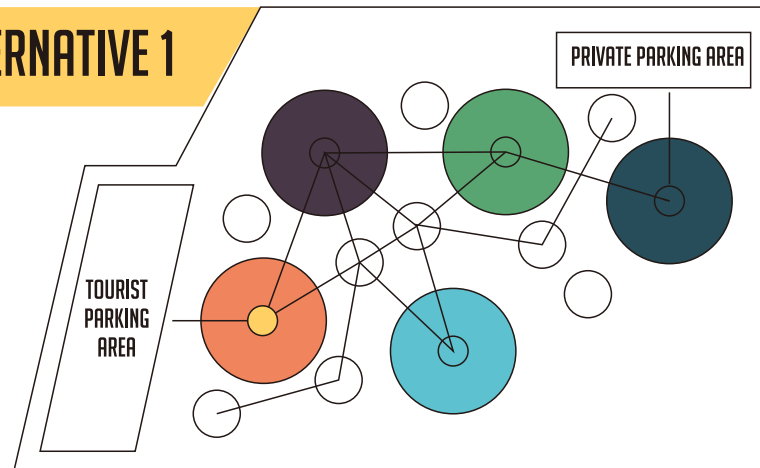
REHABILITATION AVIARY

BREEDING AVIARY

MAIN BUILDING

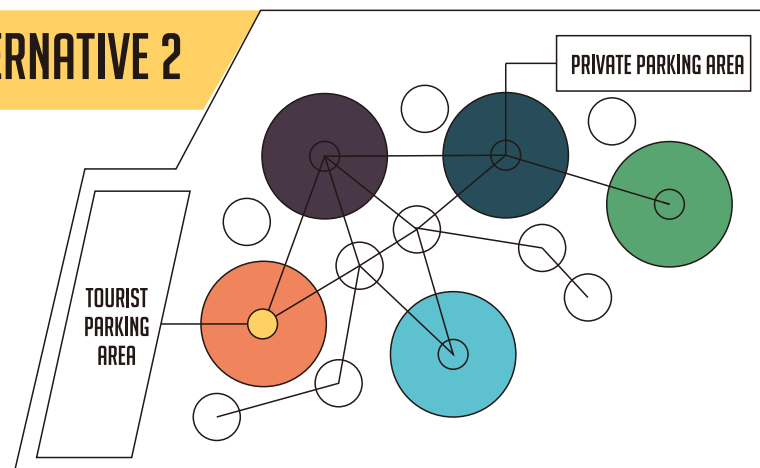
AMPHITHEATER + FOODCOURT

ALTERNATIVE 1



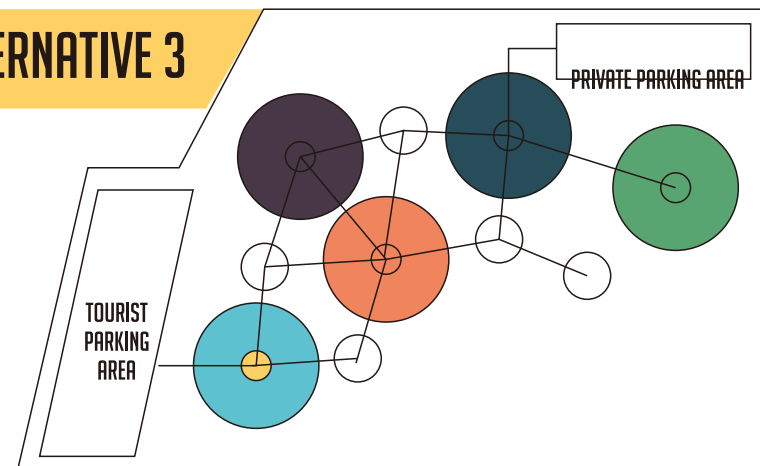
Building mass located at the right one and the left one

ALTERNATIVE 2

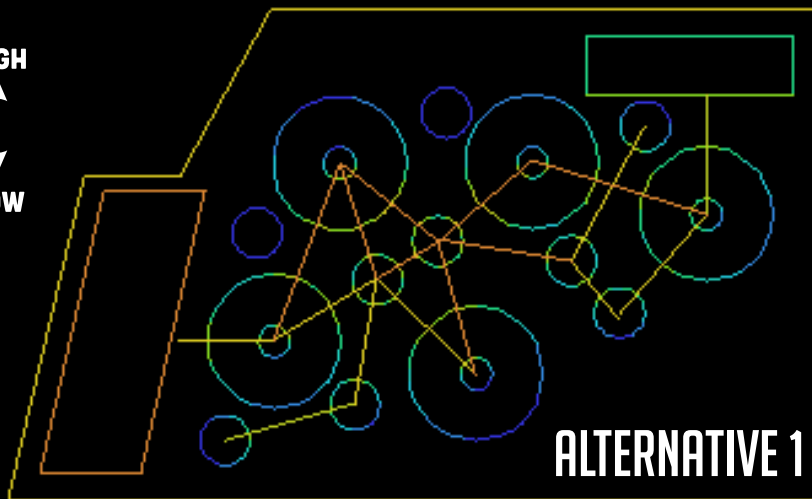
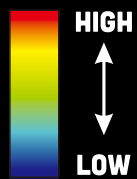


inline the building mass to minimize the connectivity

ALTERNATIVE 3

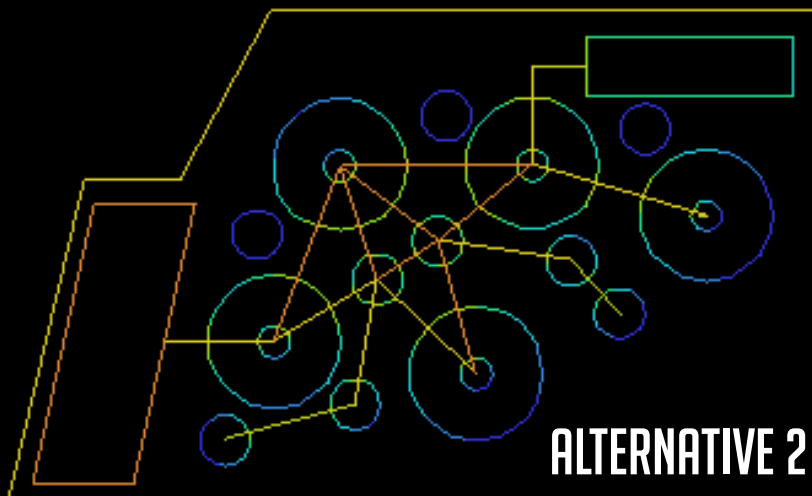


centralize the raptor and bird aviary



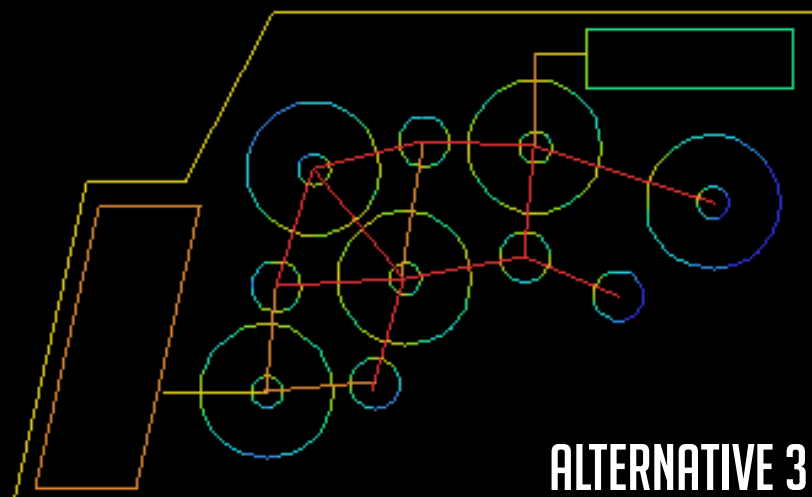
ALTERNATIVE 1

the breeding aviary circulation became orange line because its located at centre of the site



ALTERNATIVE 2

the yellow line show it have minim circulation because only have one integration its good for breeding aviary



ALTERNATIVE 3

the red line show that this zoning not deserve to be breeding aviary

after using space syntact simulation the alternative 2 became the best result because the breeding aviary located far away from high circulation intergration it show from the yellow line

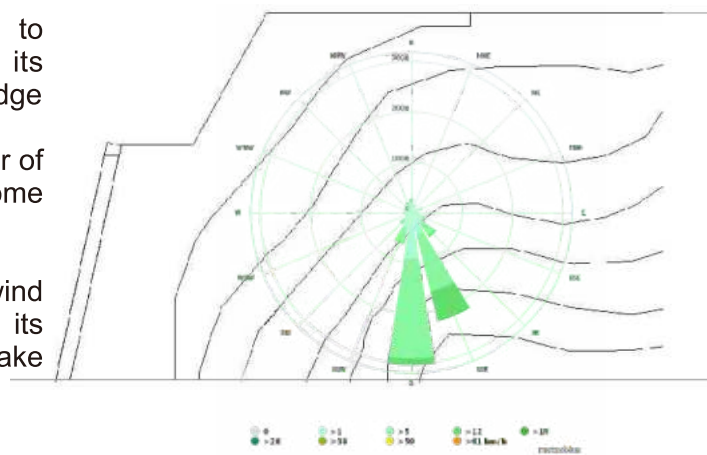


CFD Simulation

building mass placed follow the contour to reduce the strong wind from the north. its important to comfort the human to use sky bridge

at north site the inner aviary cover by 2 layer of sengon and pine tree the aviary need have some vertical plant too

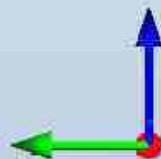
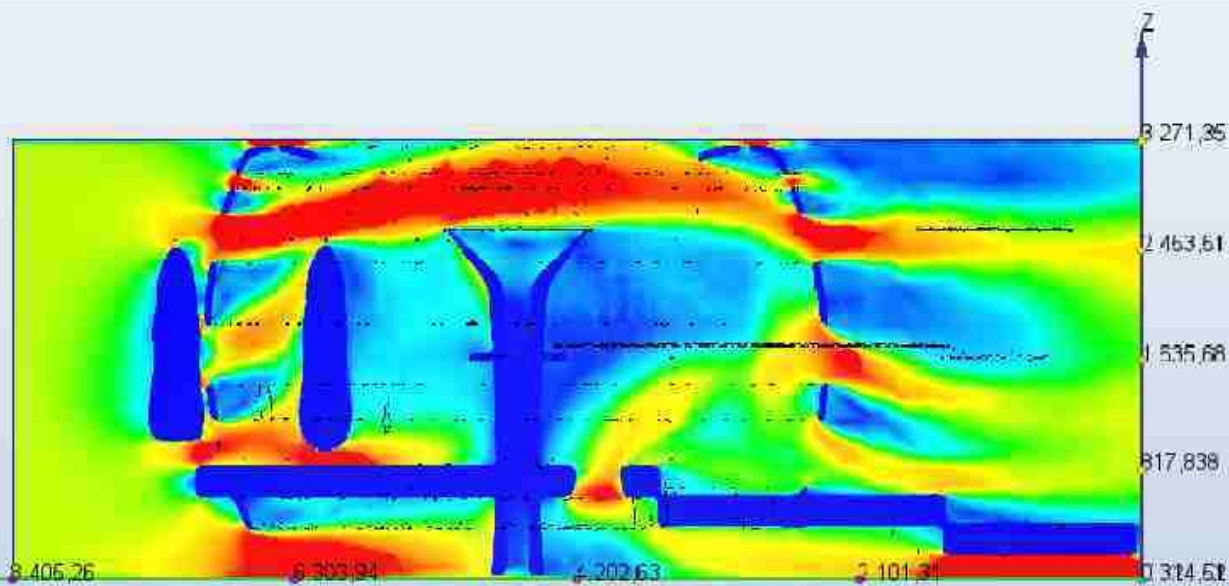
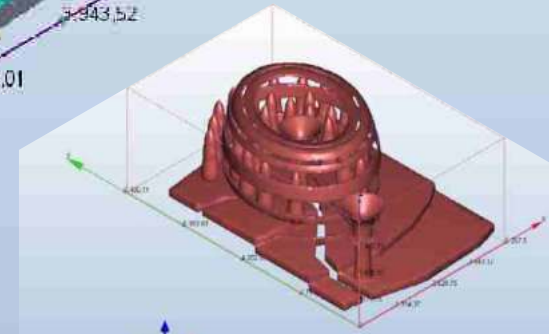
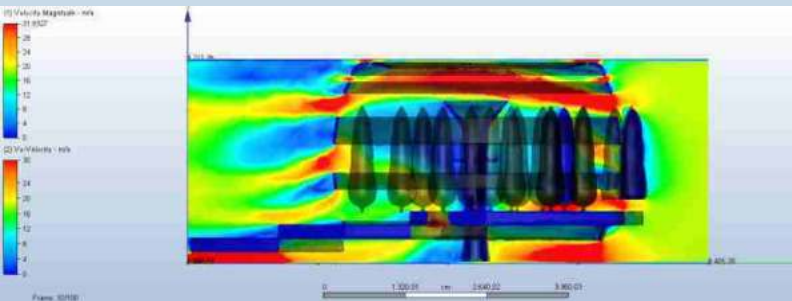
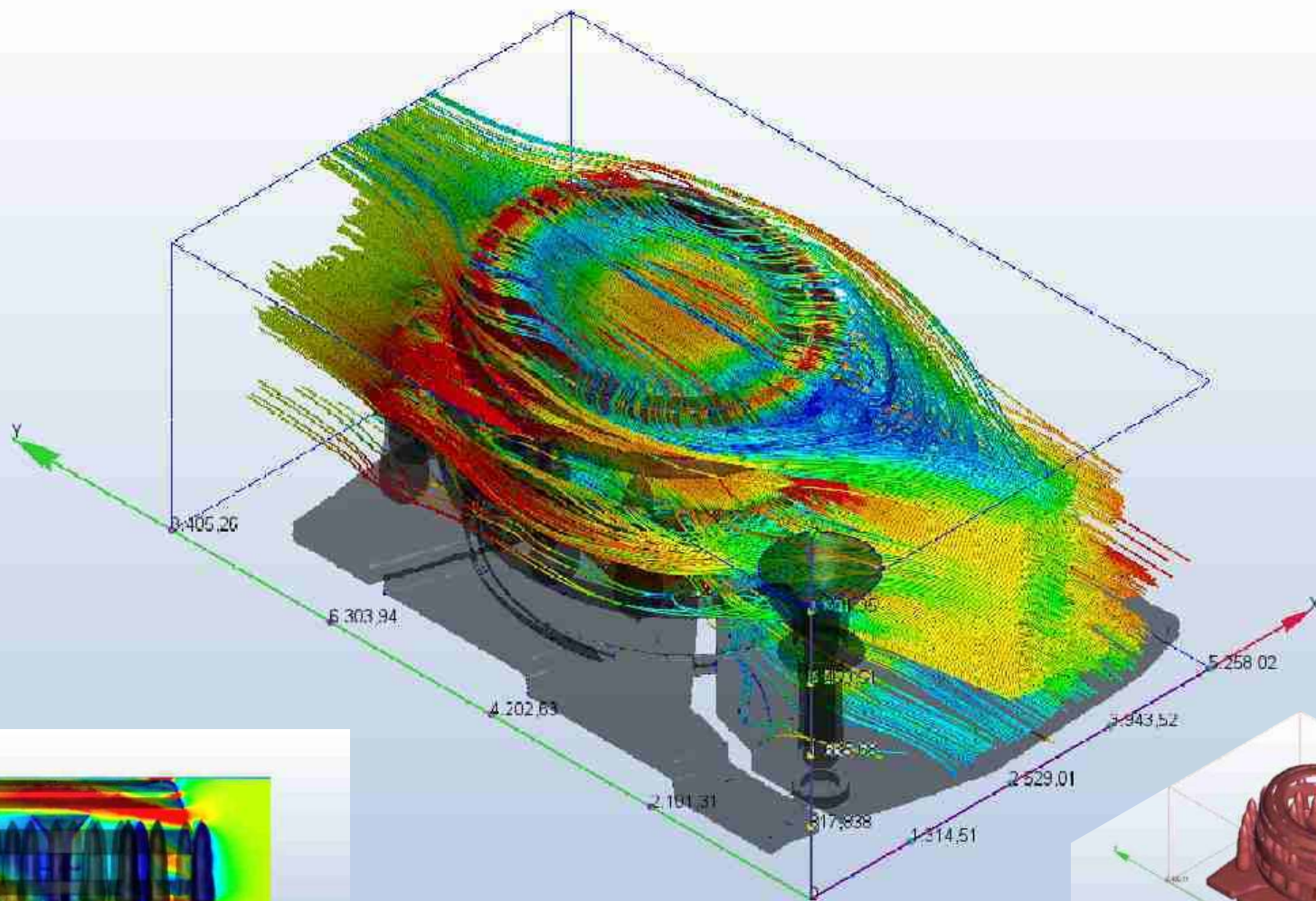
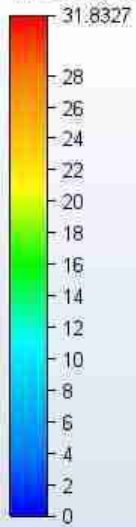
from the data we can conclude that the wind come from north to west was $>12\text{m/s}$ its categorized as unsafe wind this wind can make flight disturbance



LAWSON WIND COMFORT CRITERIA

A	2.5 m/s	< 5%	Frequent Sitting
B	4 m/s	< 5%	Occasional Sitting
C	6 m/s	< 5%	Standing
D	8 m/s	< 5%	Walking
E	8 m/s	> 5%	Uncomfortable
S	15 m/s	> 0.022%	Unsafe

(1) Velocity Magnitude - m/s



SITTING LONG	SITTING SHORT	WALKING LEISURELY	WALKING FAST	UNCOMFORTABLE
0.0 - 2.5 m/s	2.5 - 4.0 m/s	4.0 - 6.0 m/s	6.0 - 8.0 m/s	> 10 m/s
5%	5%	5%	5%	5%

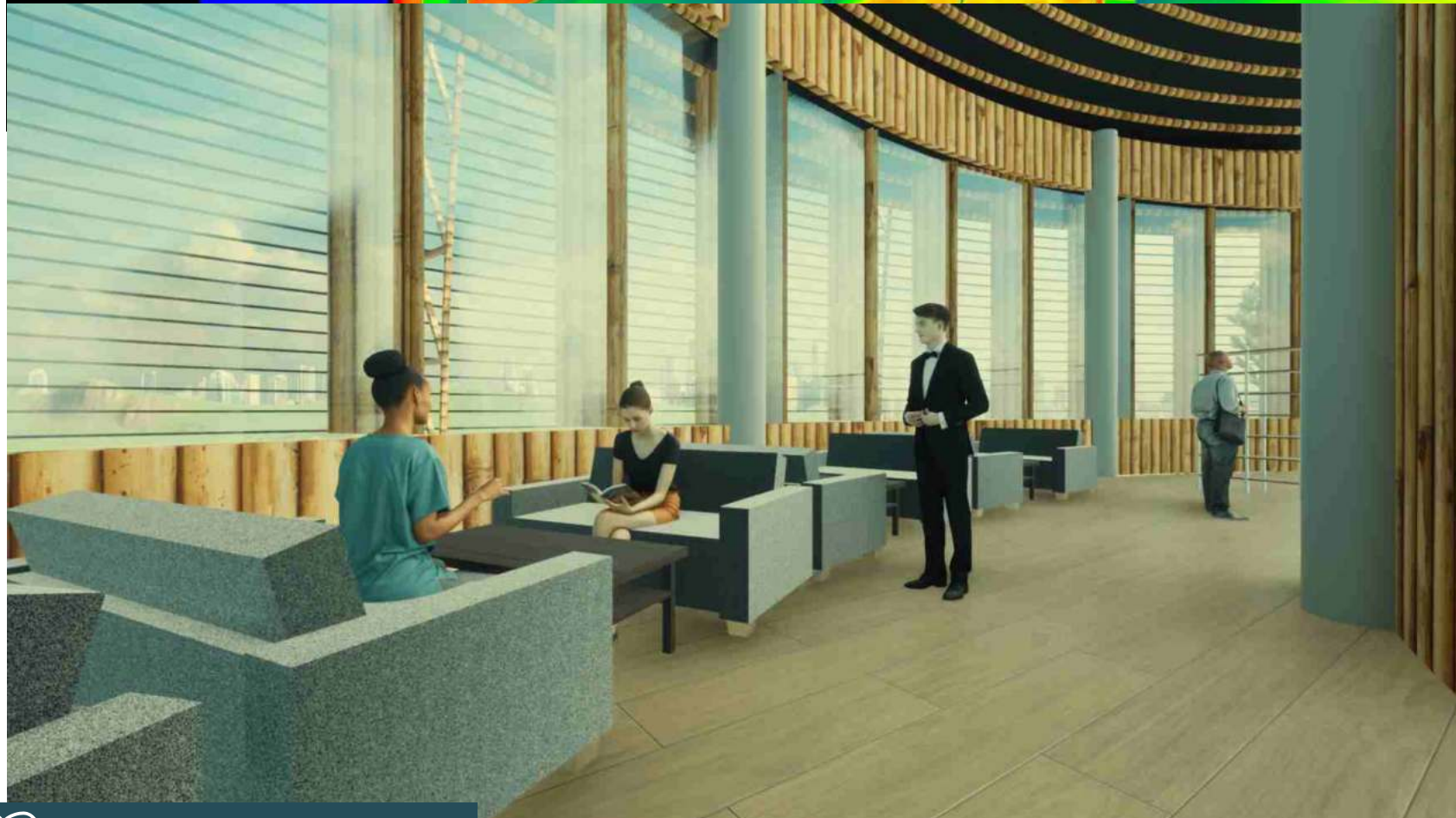
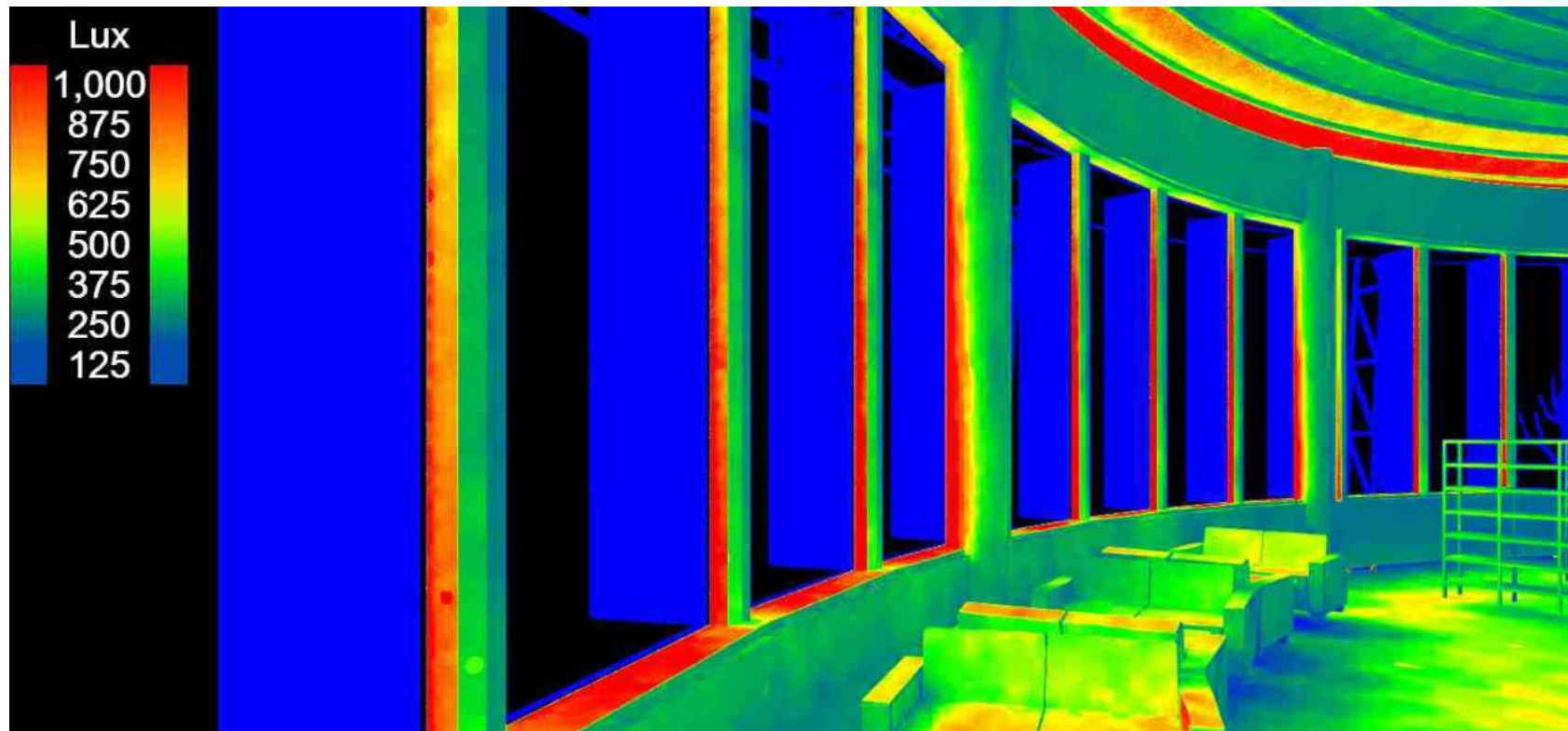
From this cfd Simulation we can conclude that 2 layer of tree and vertical garden effective to reduce the wind untill 4 m/s

the height of the tree had big contribution to reduce the strong wind

Animal Welfare

VARIABLE	INDICATOR	BENCHMARK	TEST
Free from hunger and thirst	Easy access to drinking water	there s a resilient water resource	landscape design
	food resouce use permaculture concept	the vegatatiion chosen in the site already met the need of aves	See the results of the design with the variables that have been set.(image/3D)
Free from discomfort	divide the aves and human	distance the nest area with visitor coridor	See the results of the design with the variables that have been set.(image/3D)
	availibility of fresh air	aplication cage material can absorb fresh air	There is shelter vegetation.
	shady place	There is sufficient shade	There is shelter vegetation.
Free from pain, injury and disease	avoid colision	cage prohibited using glass material	material on the design
	safe cage form	material doesnt hurt animal	material on the design
	close clinic acces	macimum 100m distance	Calculation of the distance from the nurse to the cage
Free to express normal behavior	enough cage dimension	minimum dimesion standard	Accommodates movement activities, eats, hides, sleeps
Free from stress and pressure.	divide the aves and human	distance the nest area with visitor coridor	Calculation of visibility and the presence of barriers (vegetation)
	safe from predator	divide cage bird & raptor	
	avoid from human while breeding	distance the breeding area with human activity	

Lighting Simulation



Multi sensory based on experience to raise empathy

VARIABLE	INDICATOR	BENCHMARK	TEST
sight	human and aves have an opportunity to see each other	there is a corridor for 360° aerial view	Landscape Design
sound	Create characteristics soundscape that enhance	design the landscape related to auditory enhancement	Landscape Design
touch	visitor can feed the bird	there is a feeding space	Room programming



Inside Aviary

Sight sensory

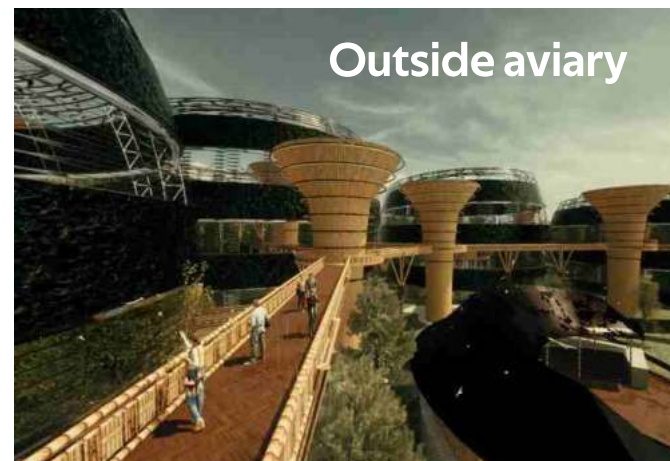
by create landscape design

Sound sensory

by create manmade water fall

Touch sensory

by touch nature material bamboo and rock pavement



Outside aviary

Sight sensory

Skybridge to enhance the view of jatimulyo forest

Sound sensory

natural bird chirping

Touch sensory

by touch nature material or resting bird

Rainwater Conservation

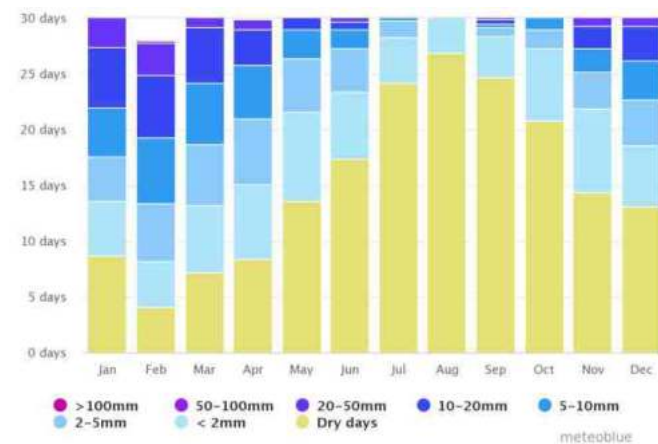
Tabel 3.6. Indeks Bahaya Kekeringan Kabupaten Kulon Progo

Kecamatan	Luas Bahaya (Ha)			Total	Kelas Bahaya
	LOW	MID	HIGH		
Galur	-	242,00	3.112,11	3.354,11	Tinggi
Girimulyo	-	1.926,00	3.647,61	5.573,61	Tinggi
Kalibawang	-	26,00	5.218,29	5.244,29	Tinggi

Tabel 3.4. Indeks Bahaya Kebakaran Hutan dan Lahan Kabupaten Kulon Progo

Kecamatan	Luas Bahaya (Ha)			Total	Kelas Bahaya
	LOW	MID	HIGH		
Galur	0,00	704,52	2.649,15	3.353,67	Tinggi
Girimulyo	0,00	1.910,32	1.663,29	3.573,61	Sedang

PRECIPITATION AMOUNT

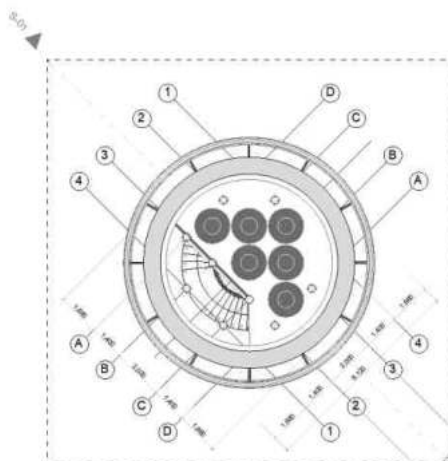
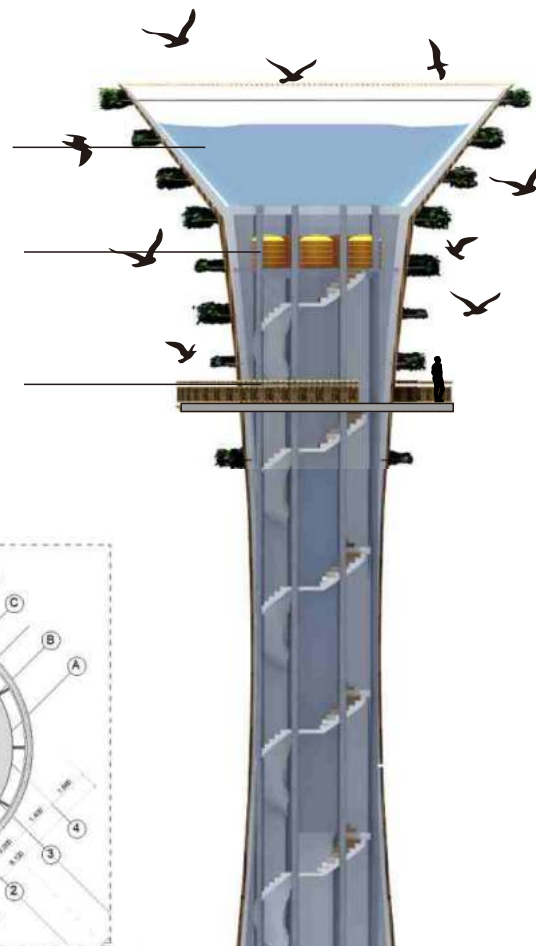


From the data above we can conclude that jatimulyo village has a serious problem while dry season at the other site when rainy season come this village had high precipitation this rain water catchmen will help the native people and native bird had back up water when dry season come

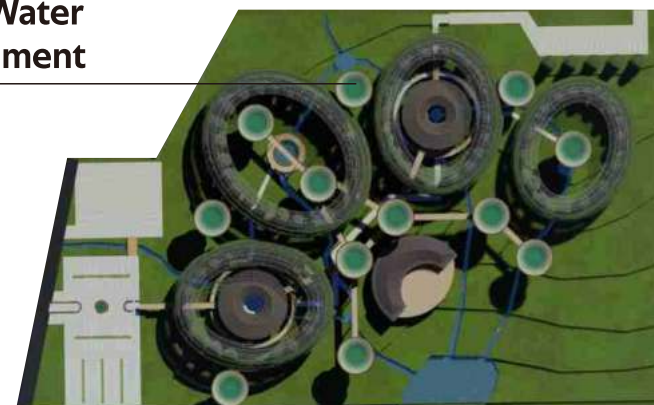
Rain water catchment

Water Tank

Bird watching Tower



Rain Water Catchment



water dam

man made river



CHAPTER 06

DESIGN EVALUATION

REVITON

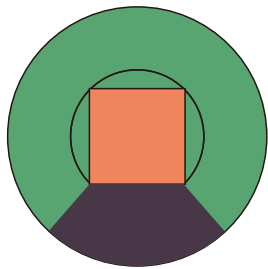
DEFENCE THESIS

EXAM

how u calculate the design of the bird watcing tower because it's a huge design

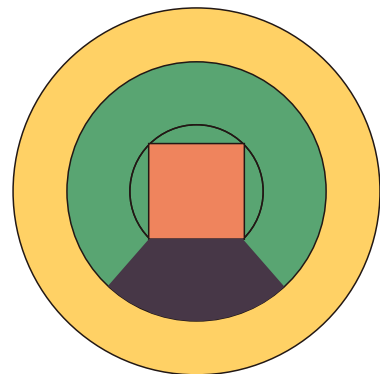
Answer :

the design of bird watcing tower already functional because only contain emergency stair and elevator the diameter of plan only 6m but have height about 30m



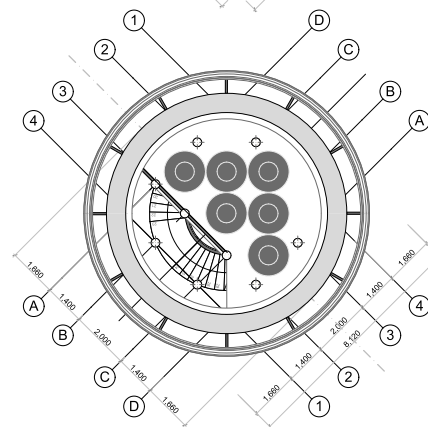
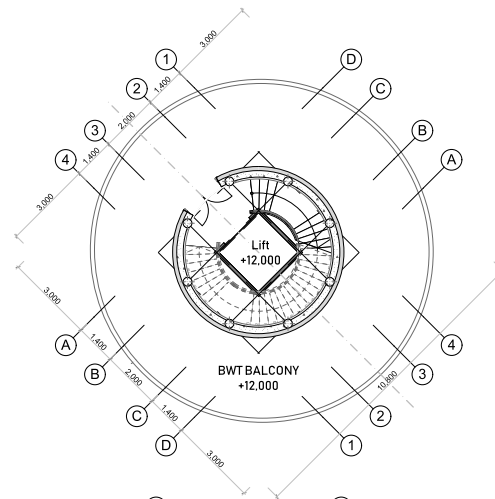
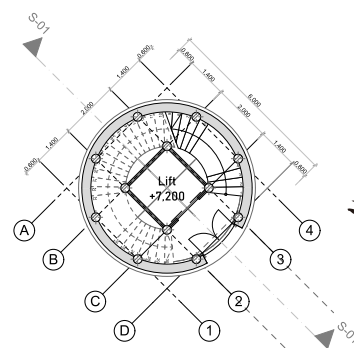
GF PLAN

the groundfloor of the bird watching tower only contain of standart lift with 4m² and evacuation plan with 1m stair



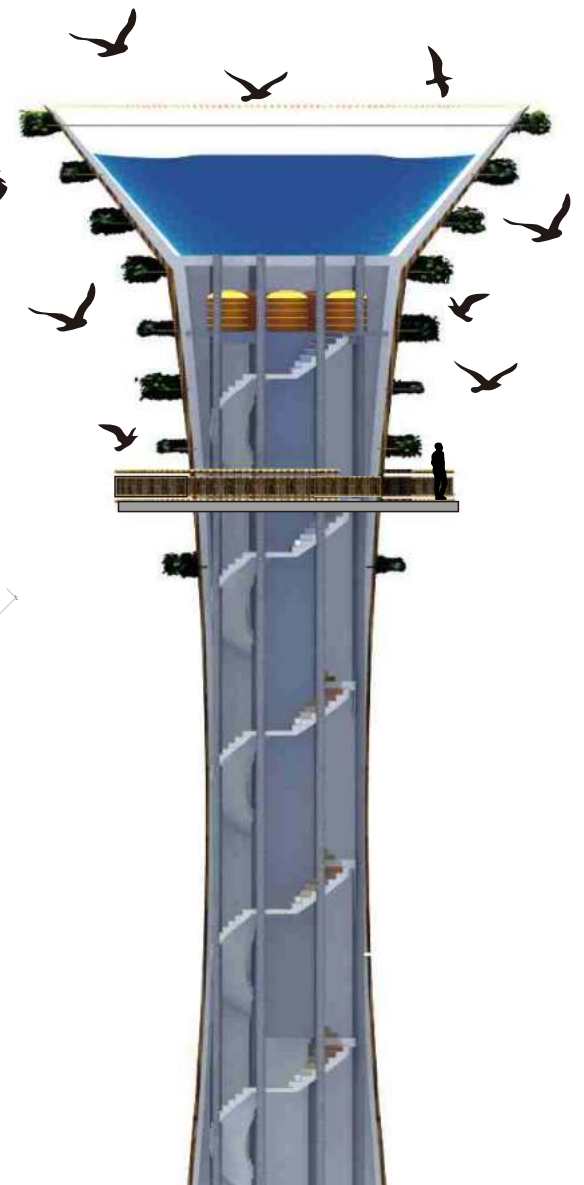
BALCONY

main function of bird watching tower is the balcony tower to had wide view of forest the length of this balcony is 3m



WATER CONSERVATION

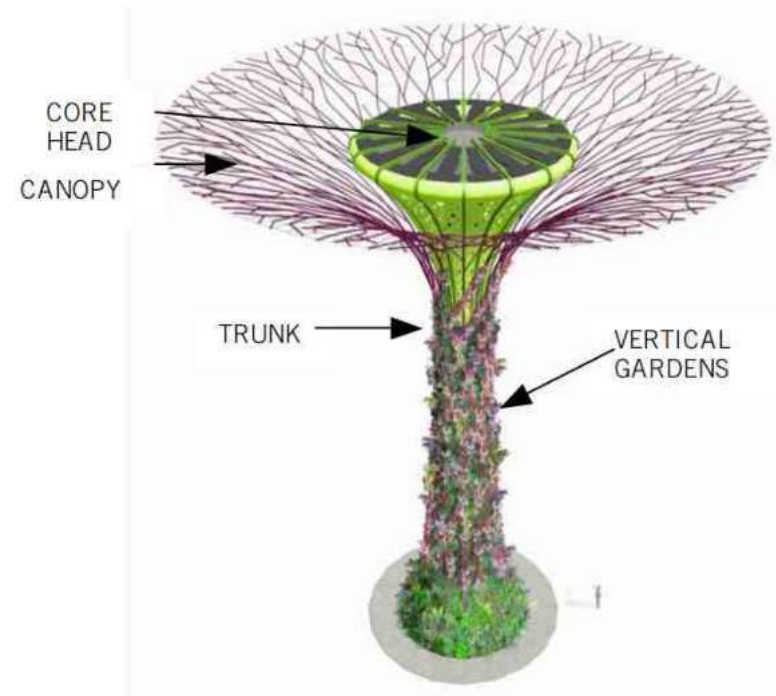
Another function of BWT is rain water catchment. this function answer water crisis in dry season at jatimulyo village



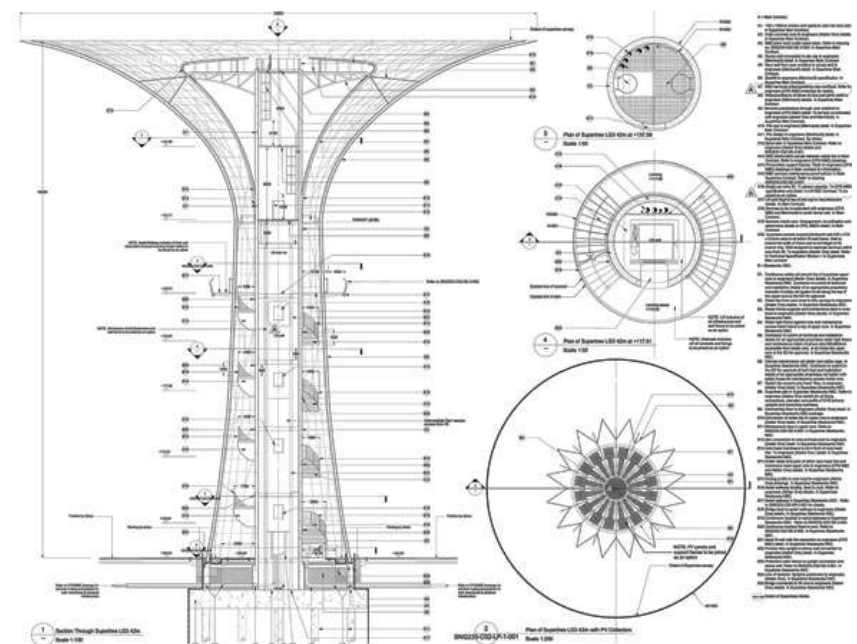
What is Precedent of Bird watching tower

Answer :

the precedent of this tower is Super tree at Greenbay Marine Singapore at this tower only contain lift and emergency stair



Courtesy of Grant Associates



bird rescue news proof

Answer :

kth wanapaksi at jatimulyo had bird release event. this event will be celebrated when the breeding bird ready to release at wild forest. mostly after breeding bird have 5 child and already can fly normally

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NEWS • NATIONAL

Two protected raptors released into natural habitat



Protected species: The Yogyakarta chapter of the Natural Resources Conservation Agency released an eagle and a kestrel into their natural habitat on Thursday. (JP/Bambang Muryanto)

Share this article: **Bambang Muryanto (The Jakarta Post)**
Yogyakarta • Thu, January 25, 2018

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The Yogyakarta chapter of the Natural Resources Conservation Agency (BKSDA Yogyakarta), together with several other conservation institutions, have released two raptors—the *elang ular bido* (crested serpent eagle) and *alap-alap sapi* (spotted kestrel)—into forests surrounding Mount Tumpeng in Jatimulyo village, Kulonprogo regency, Yogyakarta.

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why using enviromental behaviour Approach

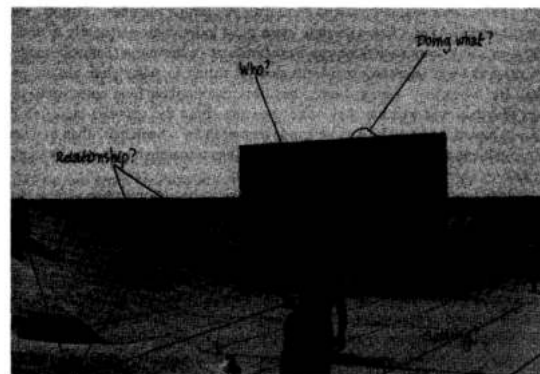
Answer :

my design project is bird conservation so I need approach to answer the need of bird conservation. this approach ask the designer to undersatand the behaviour of user. socio cultural and context of site

Elements in Environmental Behavior Observation	
Who is	<i>Actor</i>
doing <i>what</i>	<i>Act</i>
with <i>whom?</i>	<i>Significant Others</i>
In what <i>relationship,</i>	<i>Relationships</i> aural, visual, tactile, olfactory, symbolic
in what <i>context,</i>	<i>Sociocultural Context</i> situation culture
and <i>where?</i>	<i>Physical Setting</i> props spatial relations



Who? Doing what? Relationship?
Swimming pool and sitting area on
roof of Le Corbusier's Marseille
Block Housing, Marseille, France.
Context?

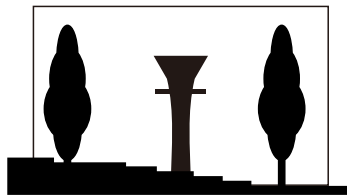


Who? Doing what? Relationship?
With whom? Context?
Children watching girl play ball on roof
of Le Corbusier's Marseille Block Housing,
Marseille, France

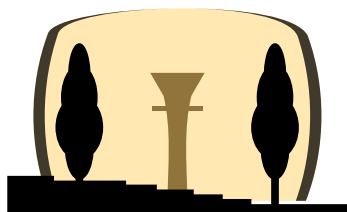
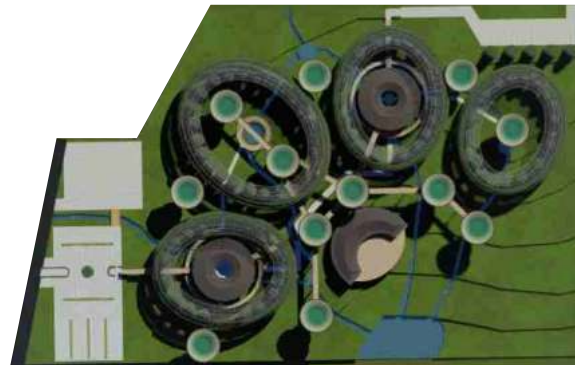
why the size of each aviary are similar

Answer the

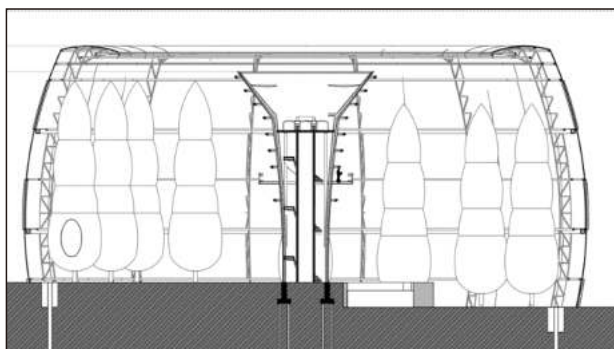
Size of each aviary has a different volume related to the function and length of bird but the height of aviary was responding the site context which has native tree with 20-40m height. this bird cage using aviary concept which mean create real forest environmen in the cage . if we make a smaller aviary we need to cut down a lot of native it will affect forest environment



**BASIC AVIARY
WITH SQUARE FORM**



**AFTER RESPONDING
SHAPE OF TREE**



inside site



outside site

Section Existing Site



Explain your Aviary feature related to facilitating small bird raptor bird and imigrant bird



Food resource

- Vertical Plant
- Native Plant
- FishPond
- Manmade river

Water resource

- FishPond
- Manmade river
- Rainwater catchment
- BWT Roosting Area

Roosting Place

- Vertical Plant
- Native Plant
- Bird watching tower

CHAPTER 06

ATTACHMENT



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Bismillaahirrahmaanirrahiim

Assalamualaikum Wr. Wb.

Dengan ini, menerangkan Bahwa:

Nama : Panji Sultan Alfatriyan
Nomor Mahasiswa : 17512169
Pembimbing : Assist Prof Dr. Yulianto P. Prihatmaji, ST,MT, IPM, IAI.
Fakultas / Prodi : Teknik Sipil dan Perencanaan/ Arsitektur
Judul Karya Ilmiah : Design of Jatimulyo Bird Conservation in Kulonprogo with Enviromental Behaviour Design Approach A

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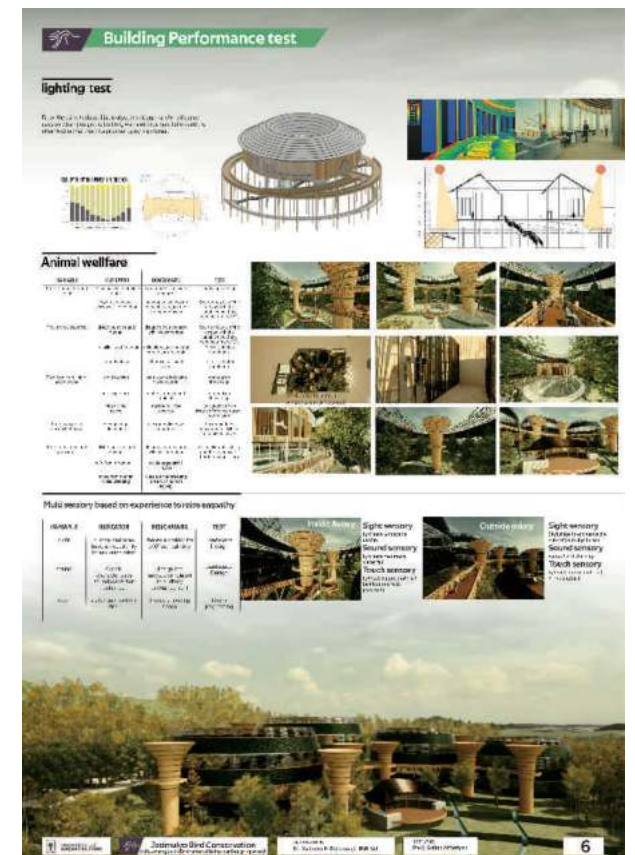
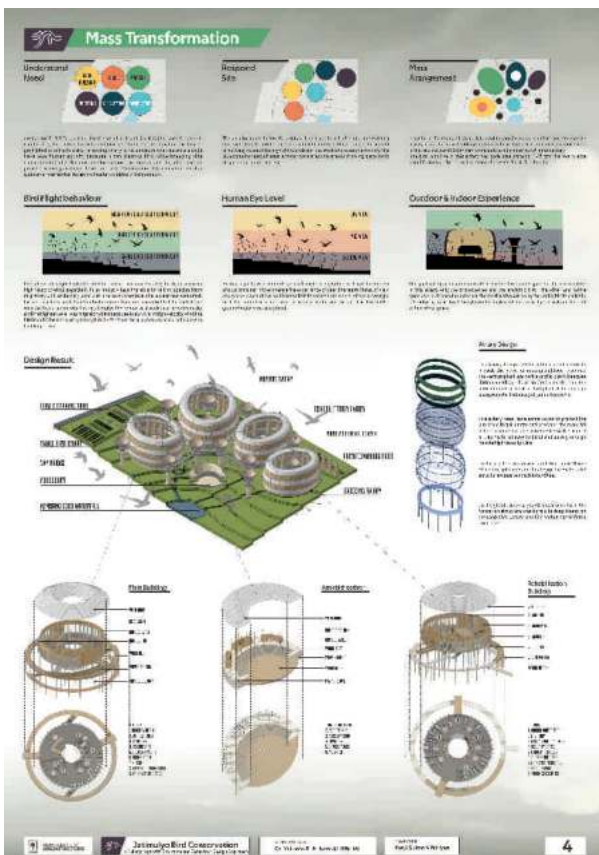
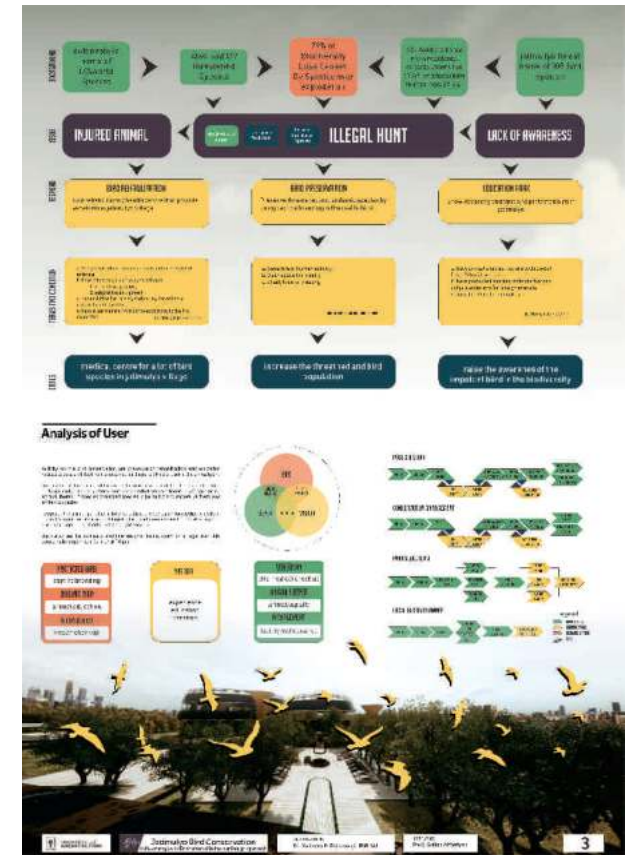
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Yogyakarta, 7/5/2022
Direktur



Joko S. Prianto, SIP., M.Hum

APREB





APREB



DED



Maquete



Video



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UNIVERSITAS
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INDONESIA



International Undergraduate
Program in Architecture
Final Architectural Design Studio

Design of
Jatimulyo Bird Conservation
in Kulonprogo with Enviromental Behaviour Design Approach

DETAIL ENGINEERING DRAWING

Panji Sultan Alfatriyan
17512169

SUPERVISOR
Dr. Yulianto P. Prihatmaji, IPM. IAI.



PLAN

SITUATION



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DRAWING TITLE



PLAN
SITUATUION

SCALE

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DESCRIPTION

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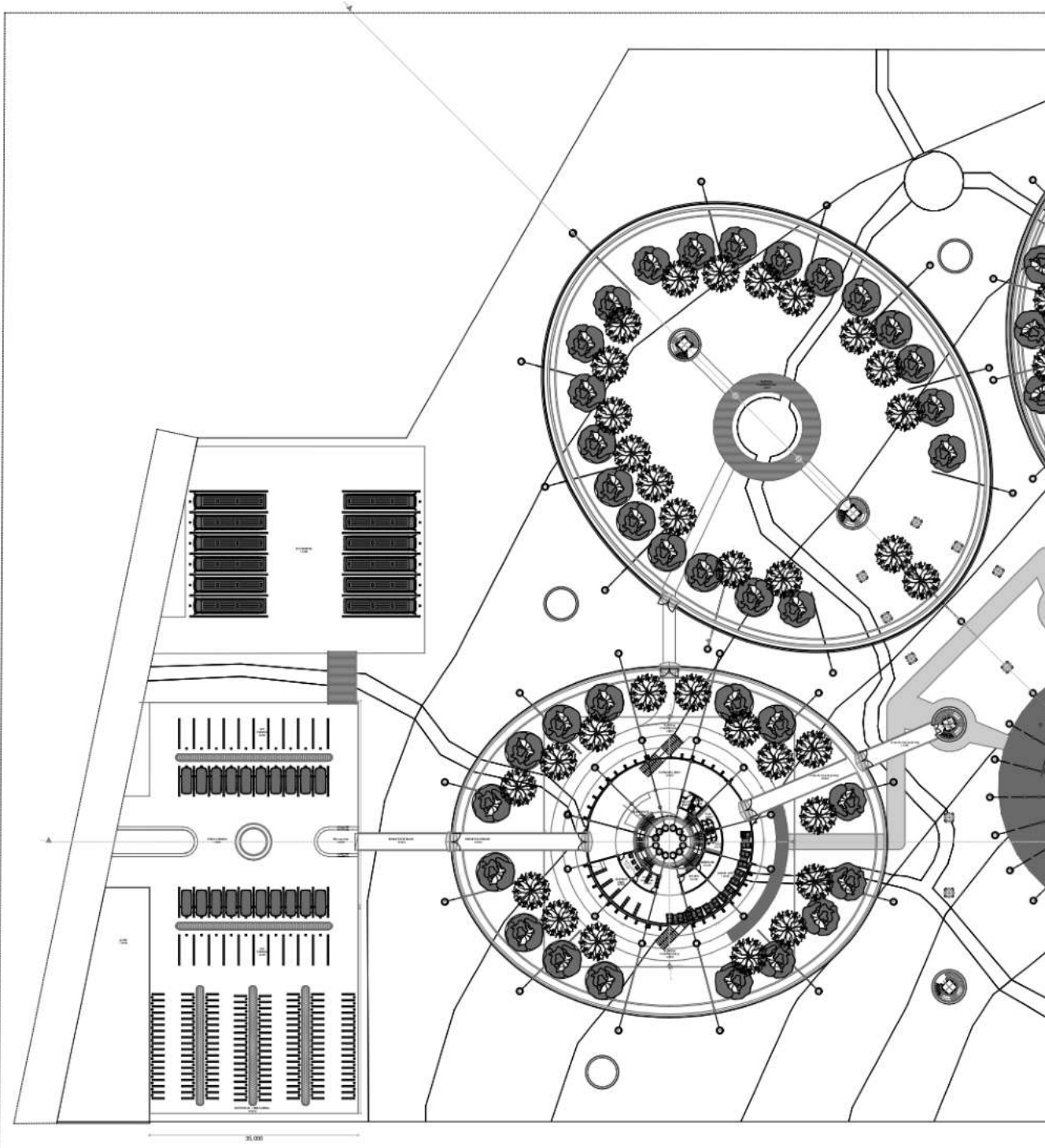
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Total

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PLAN

SITEPLAN 2



1:1000
PLAN SITEPLAN 2



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PLAN
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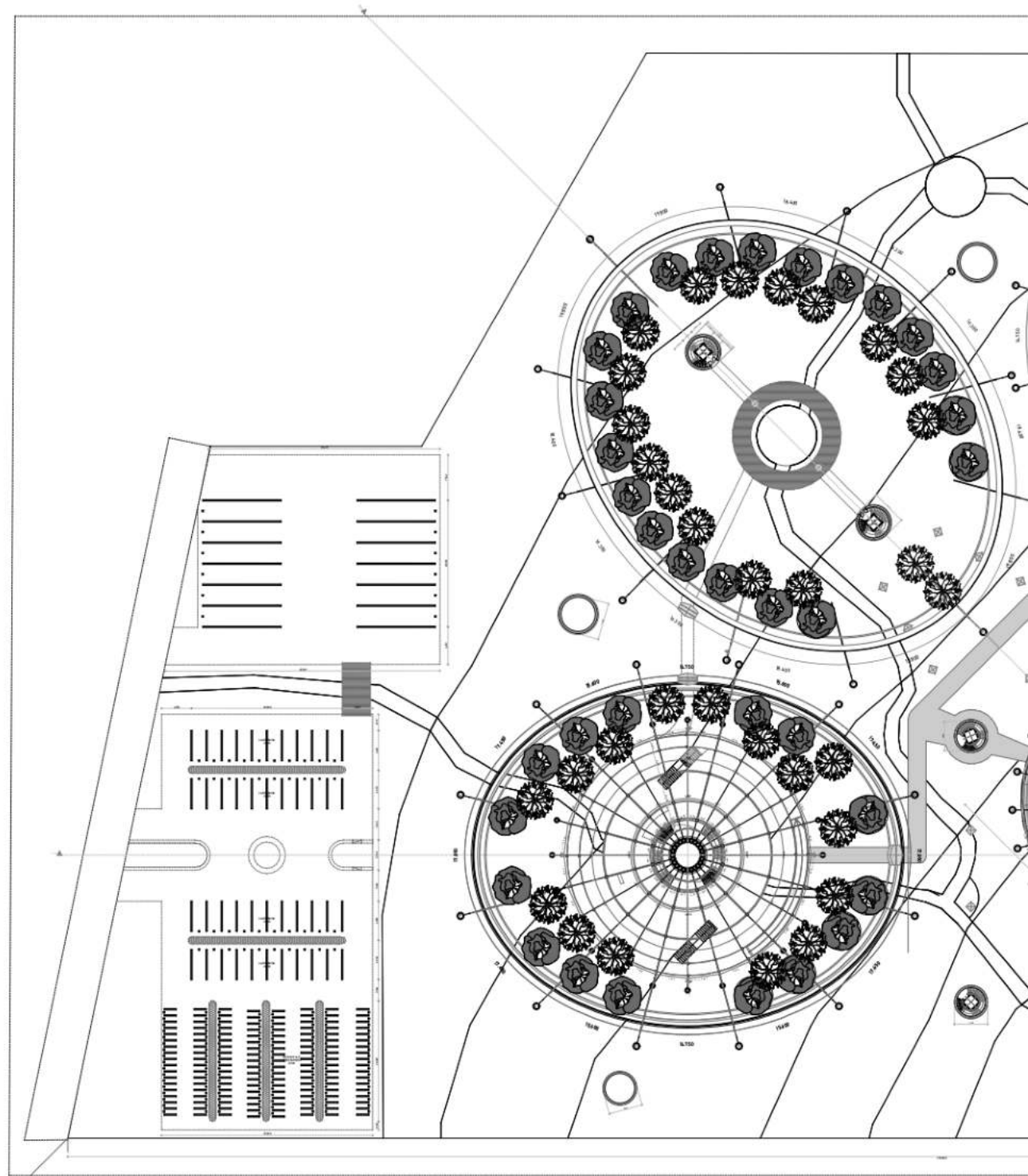
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PLAN

SITEPLAN



PROJECT

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PLAN
SITEPLAN

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DESCRIPTION

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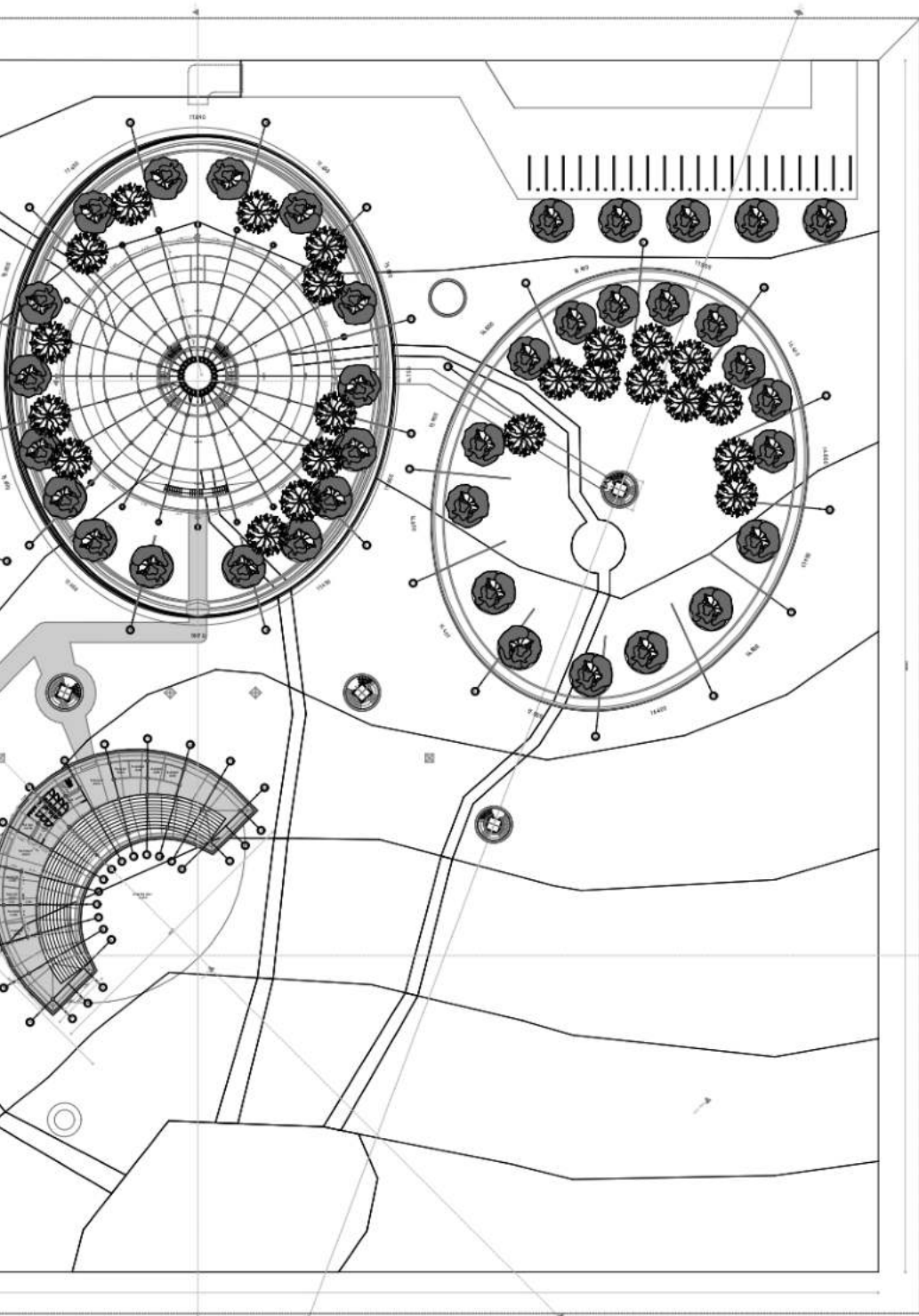
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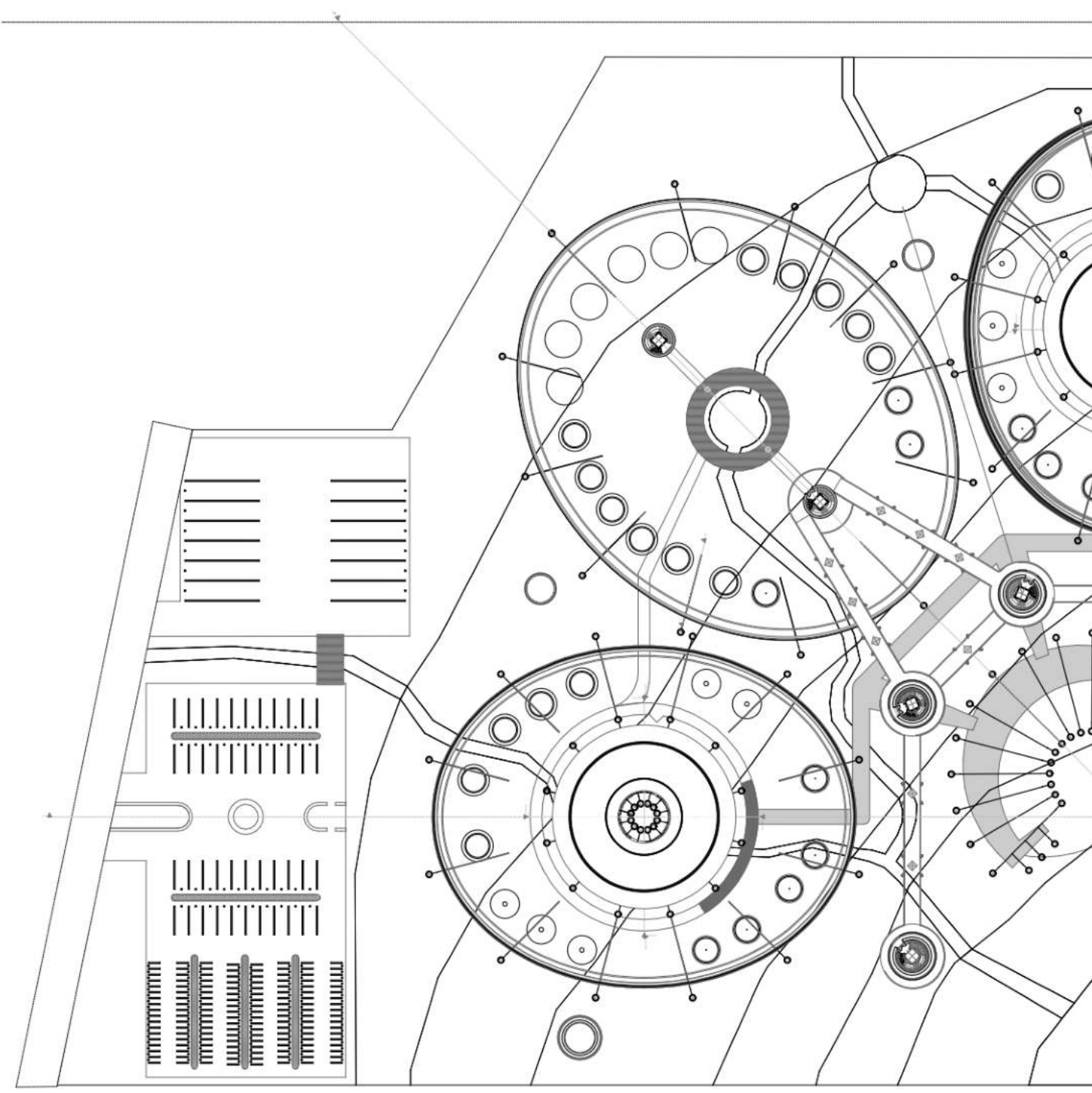
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Total

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1:1000



PLAN

SITEPLAN 3



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PLAN
SITEPLAN 3

SCALE

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DESCRIPTION

APROVAL

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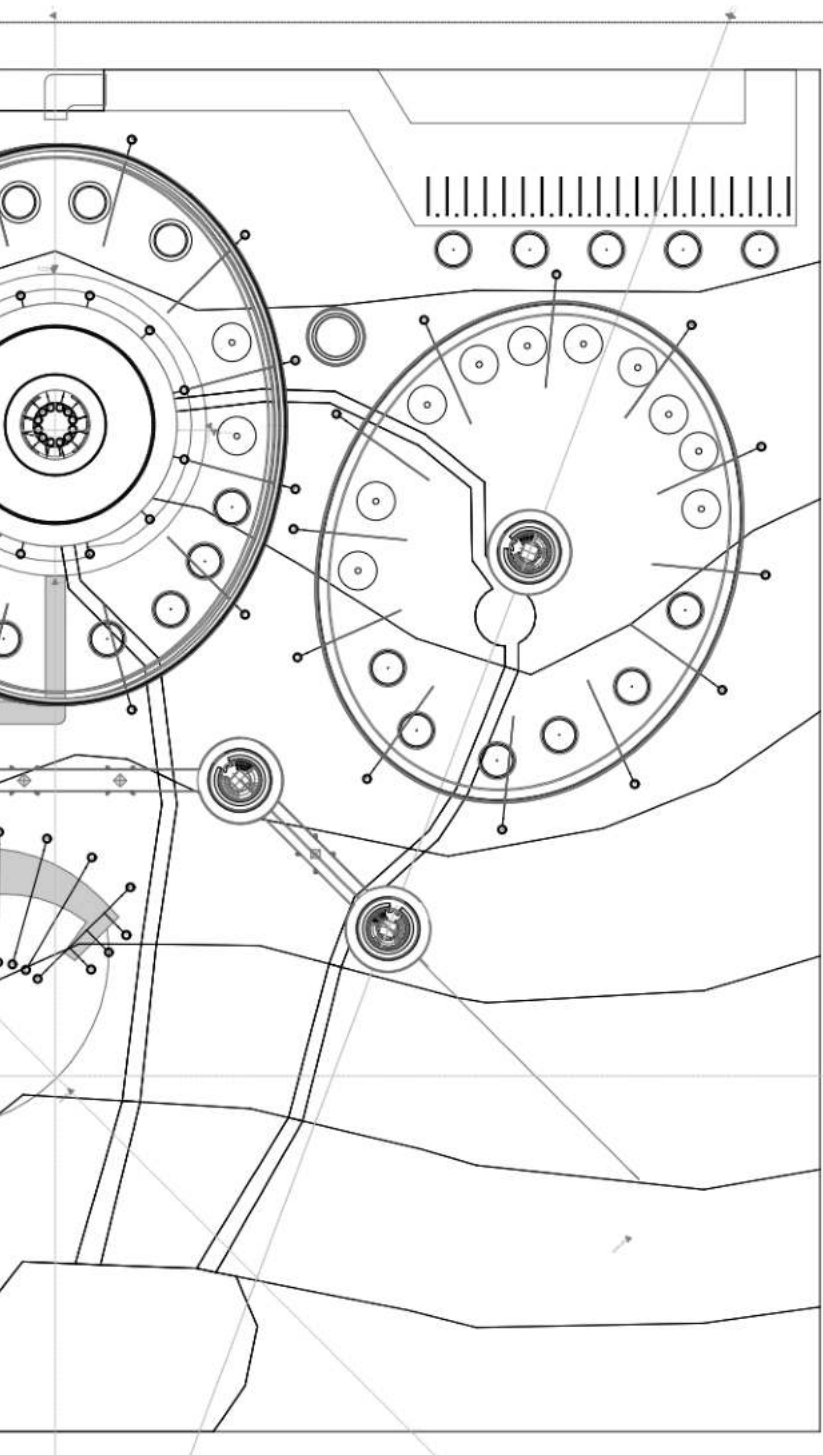
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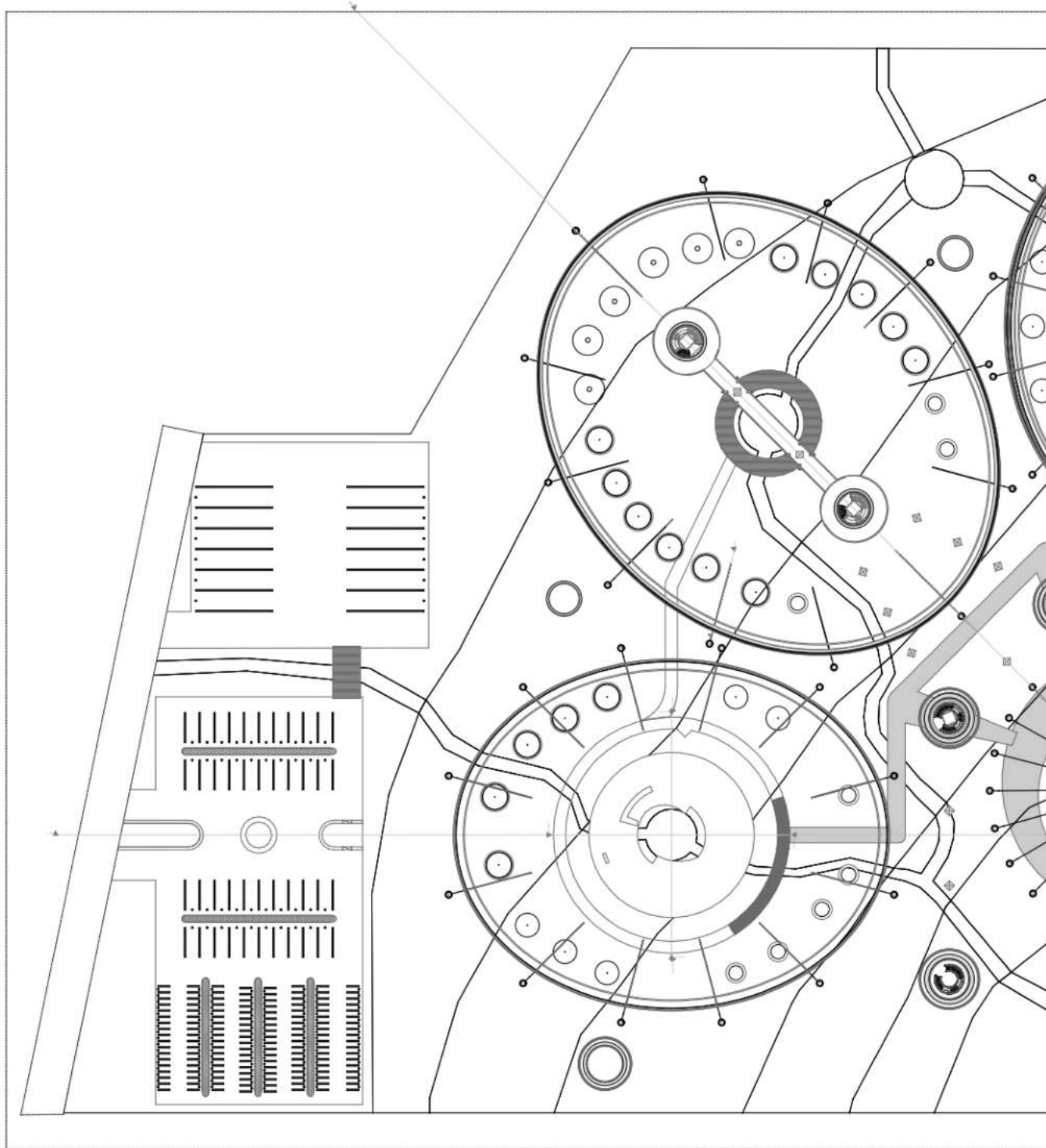
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1:1000



PLAN

SITEPLAN 4



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DRAWING TITLE

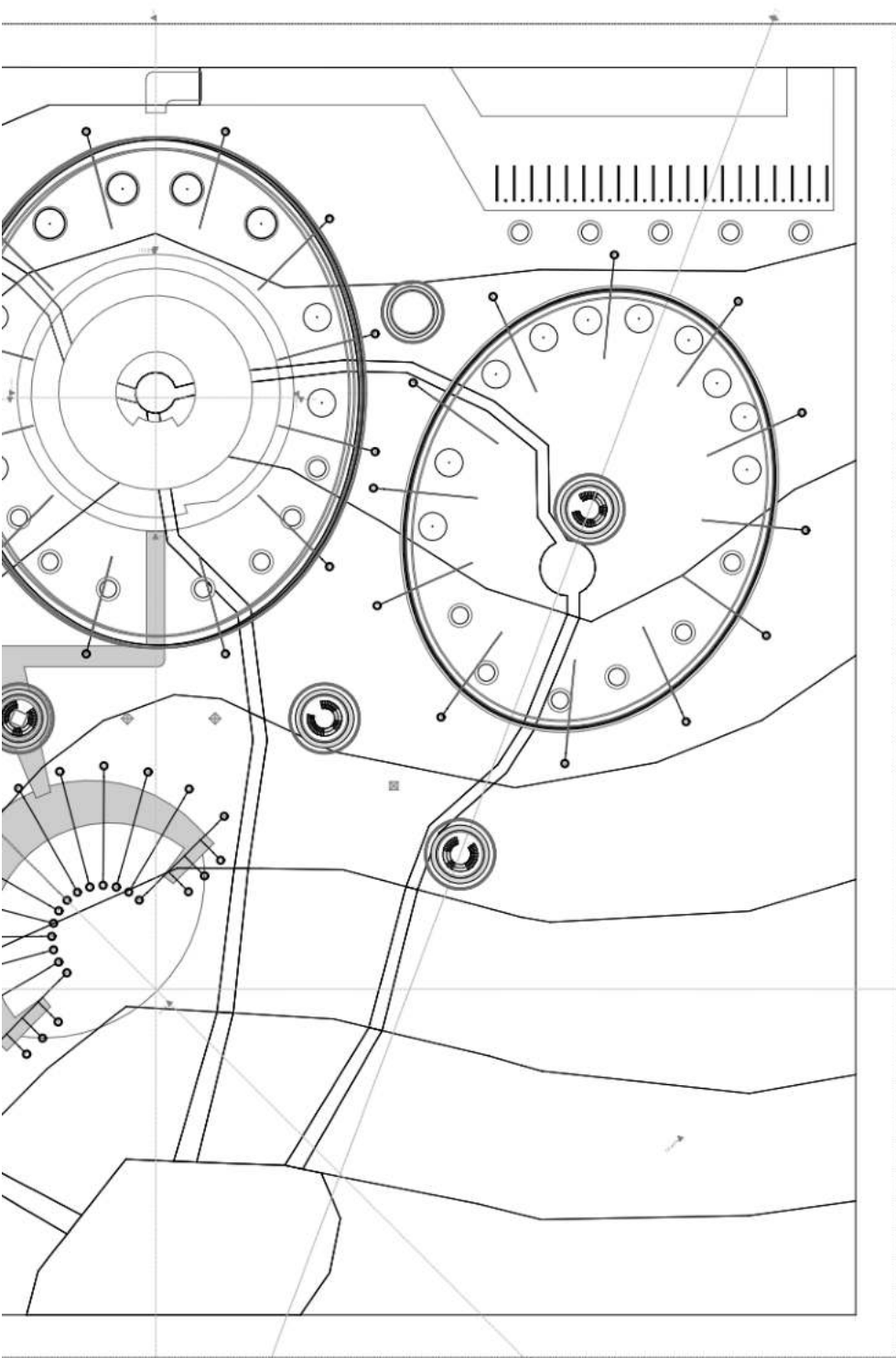


PLAN
SITEPLAN 4

SCALE

1:1000

DESCRIPTION



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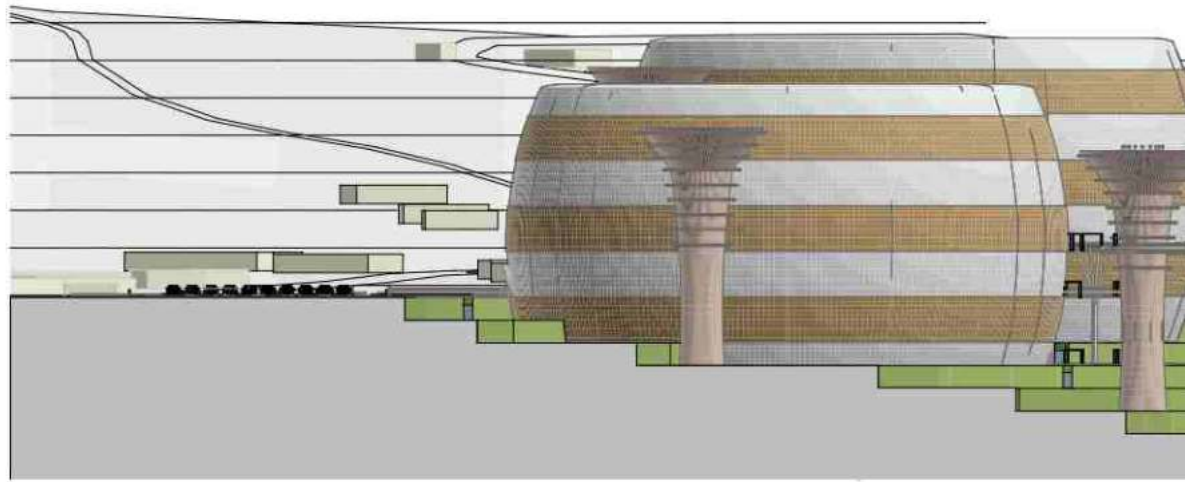
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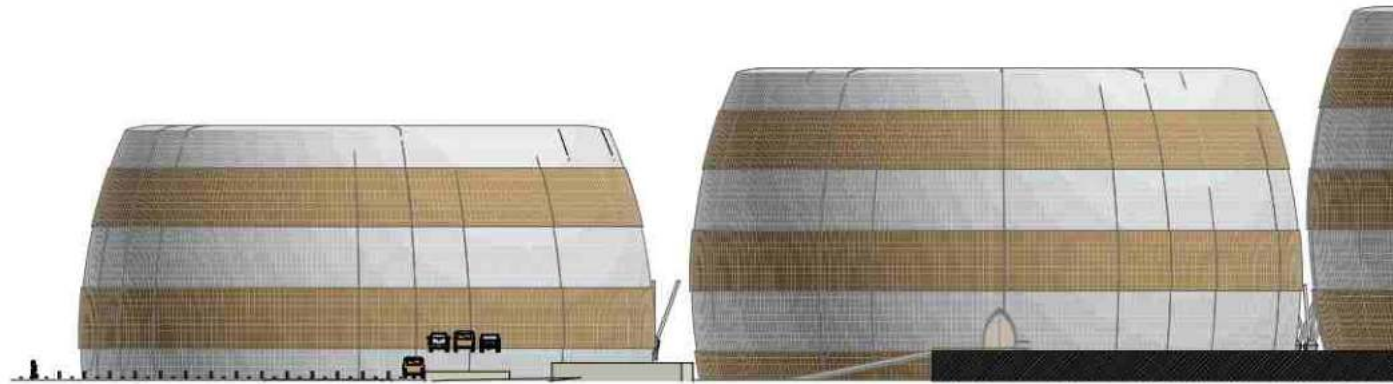
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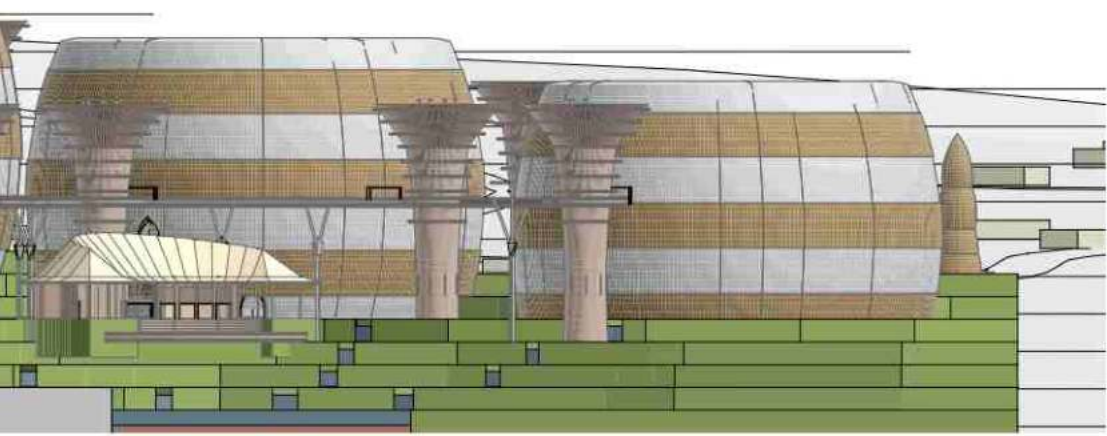
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South Elev



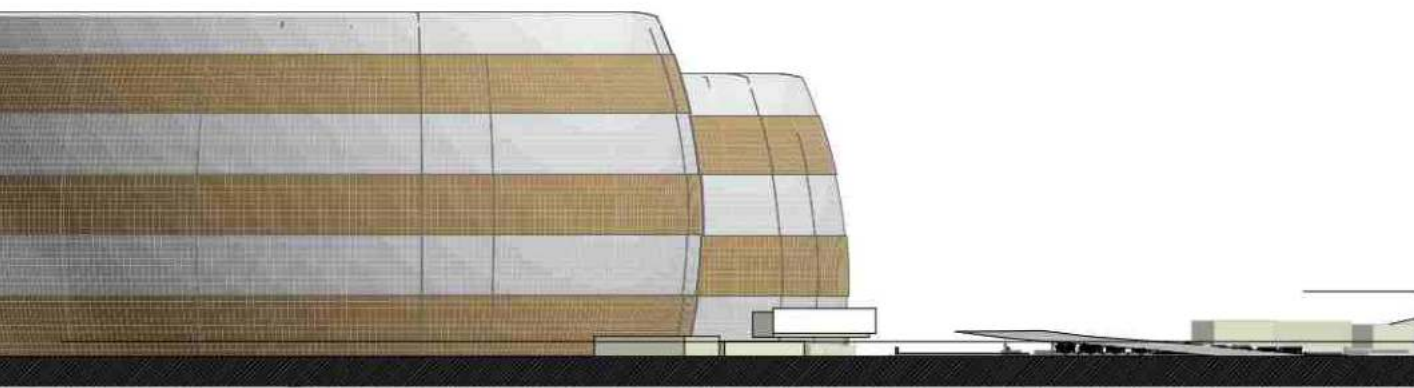
SITEPLAN

North Elev



levation

1:1000



levation

1:750



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FACADE.1
Layout

SCALE

1:750, 1:1000

DESCRIPTION

APPROVAL

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7	45



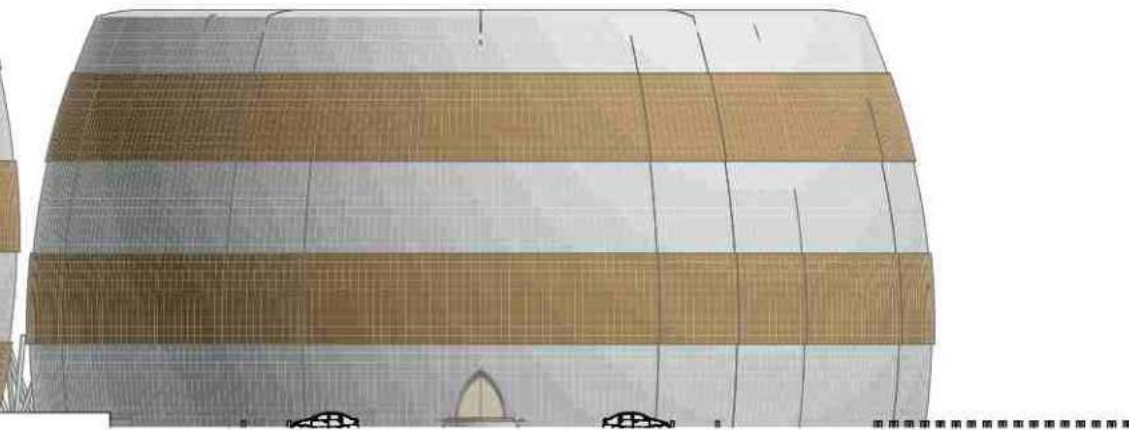
SITEPLAN

East Elevation



SITEPLAN

West Elevation



1:500



1:500



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FACADE.2
Layout

SCALE

1:500

DESCRIPTION

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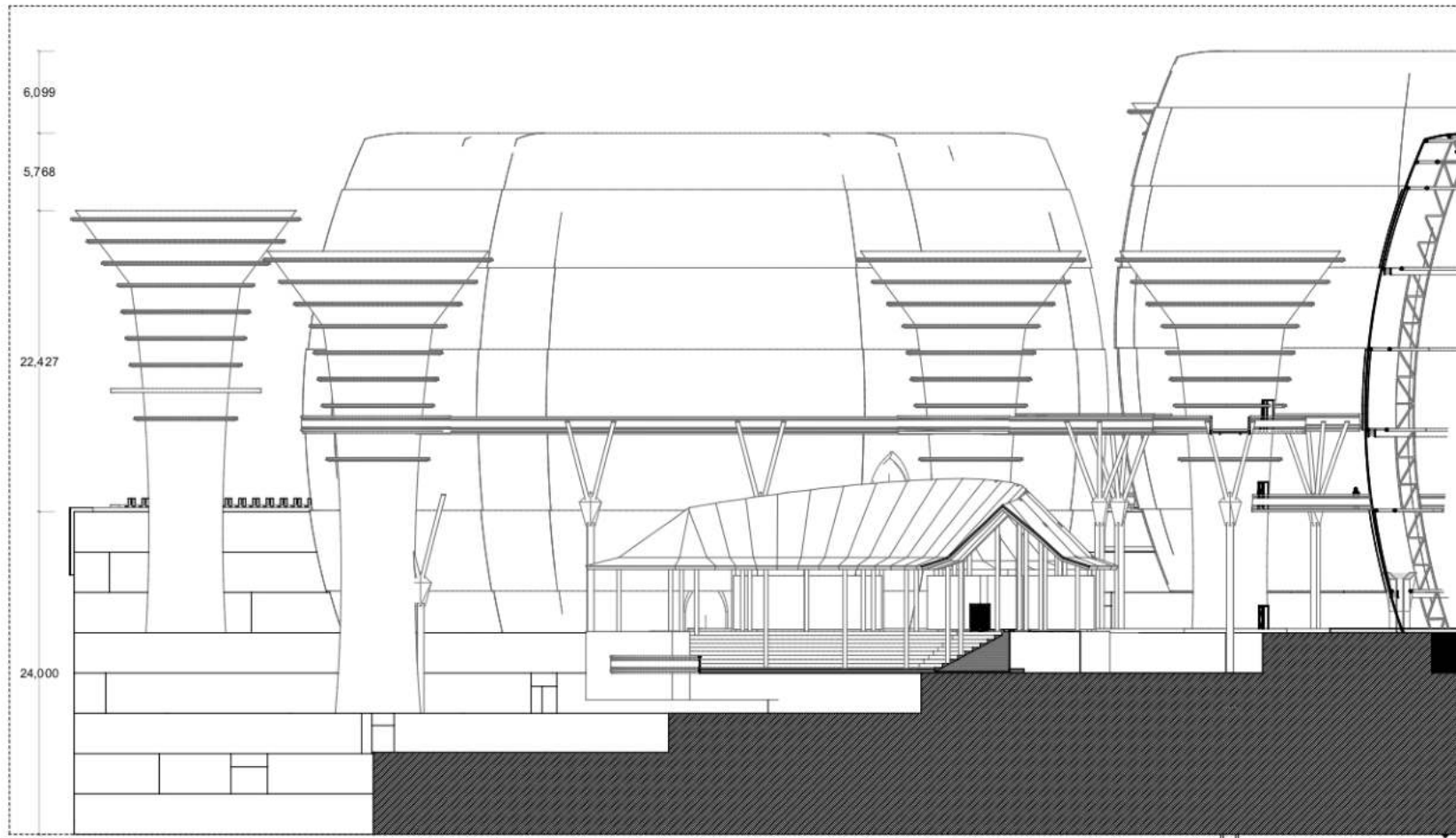
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section

rehabilitation



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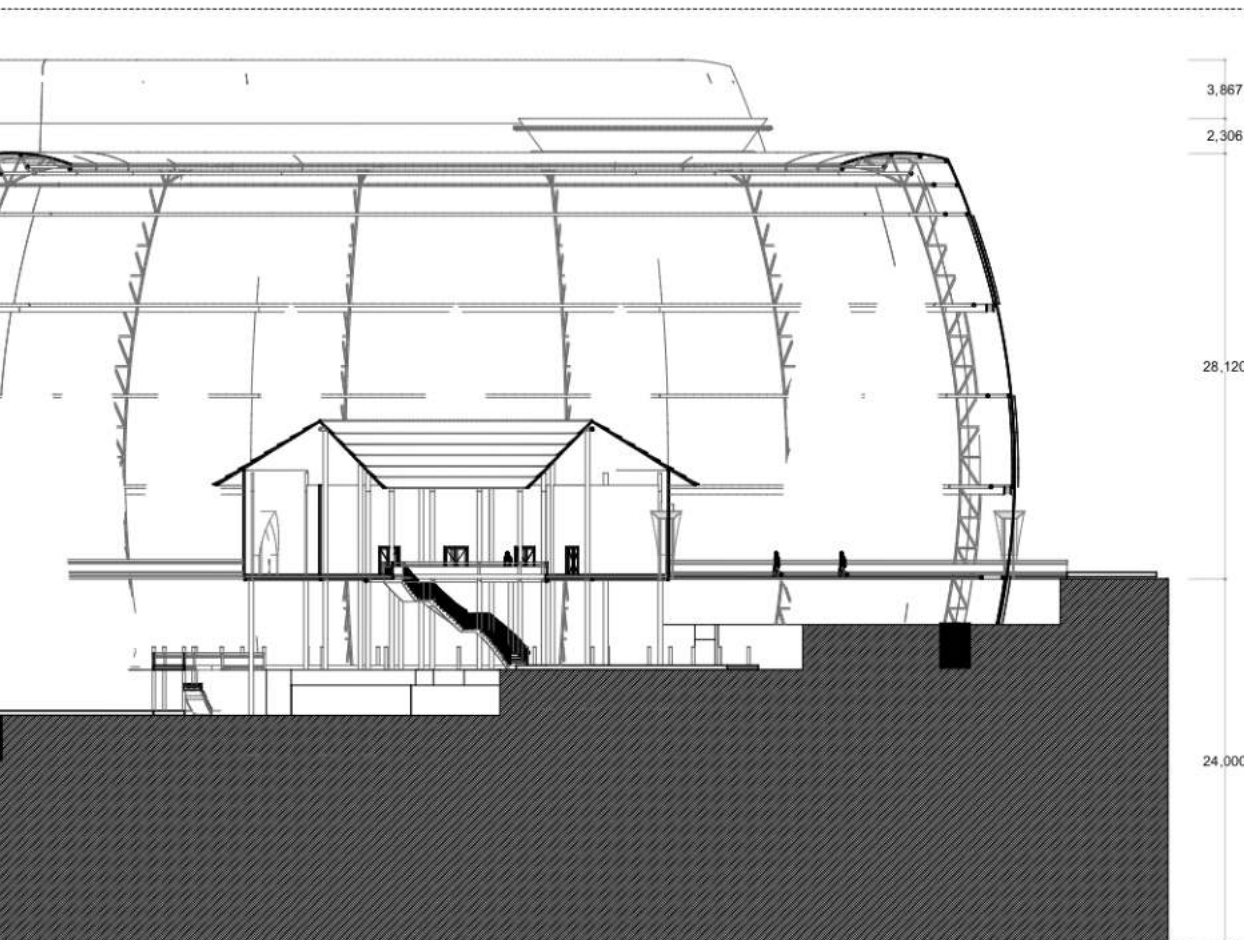


SECTION.1
Layout

SCALE

1:500

DESCRIPTION



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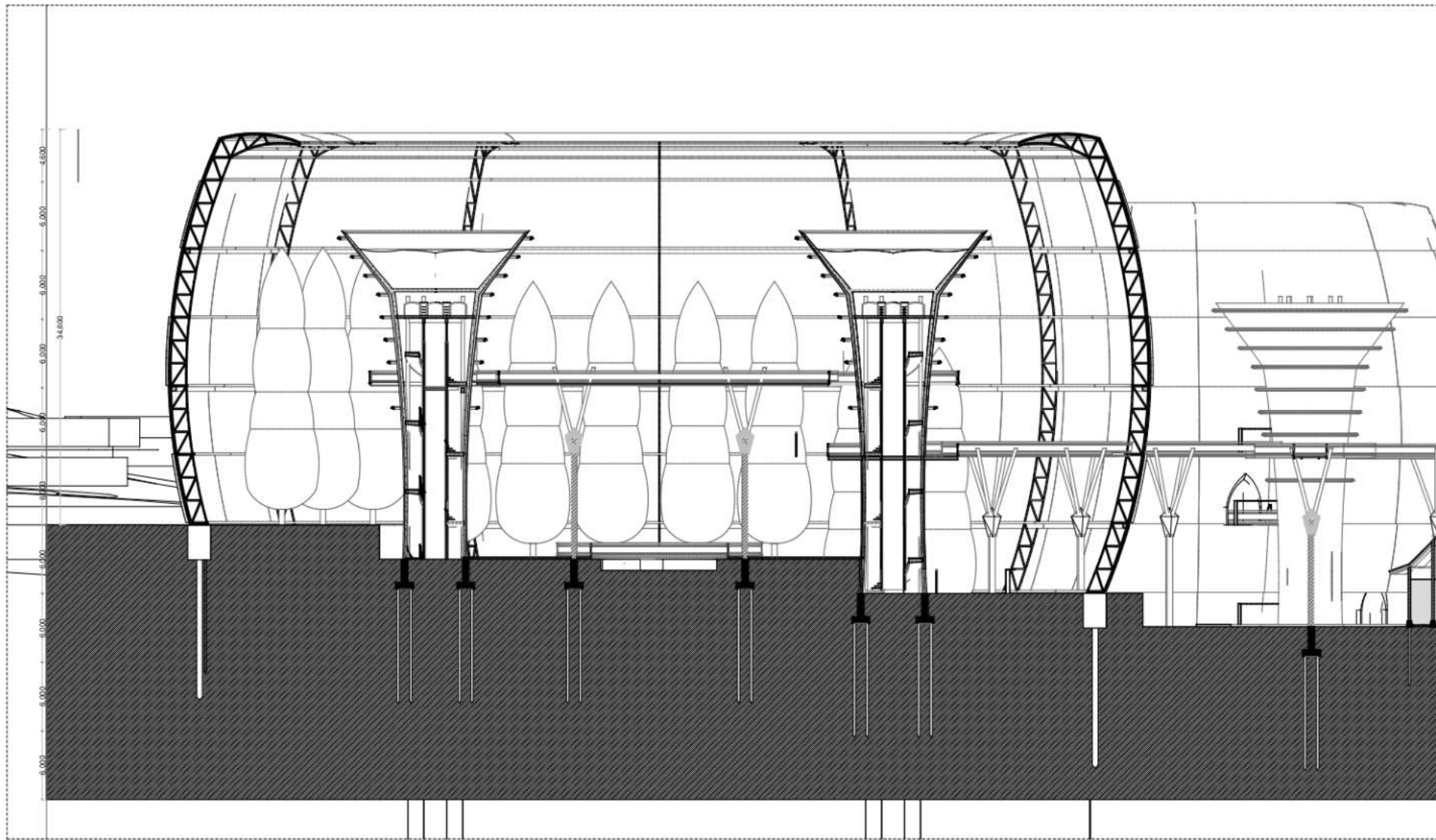
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Total

45



section

raptor aviary



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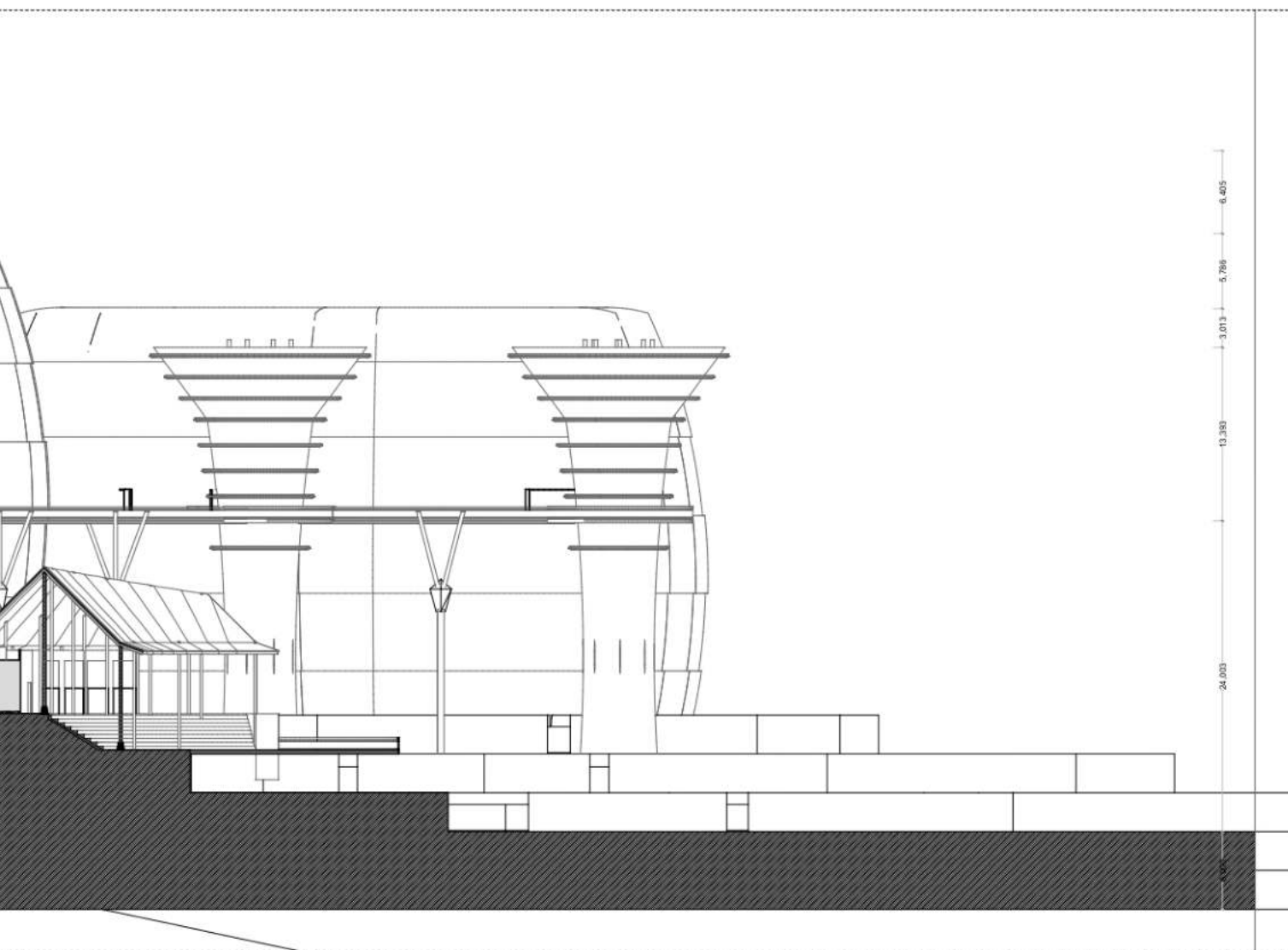
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SECTION.2
Siteplan

SCALE 1:500

DESCRIPTION



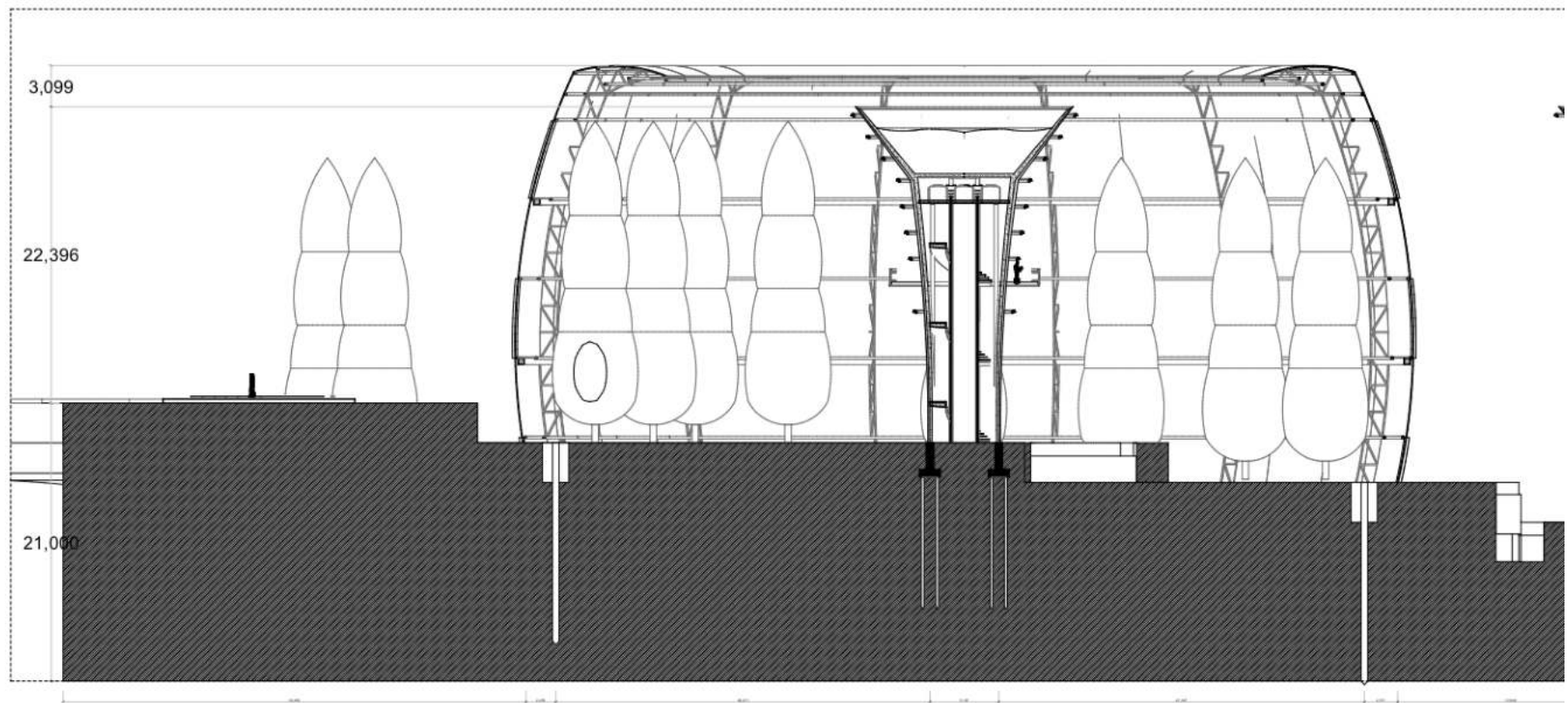
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APPROVAL

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Page	Total
10	45



section

breeding aviary



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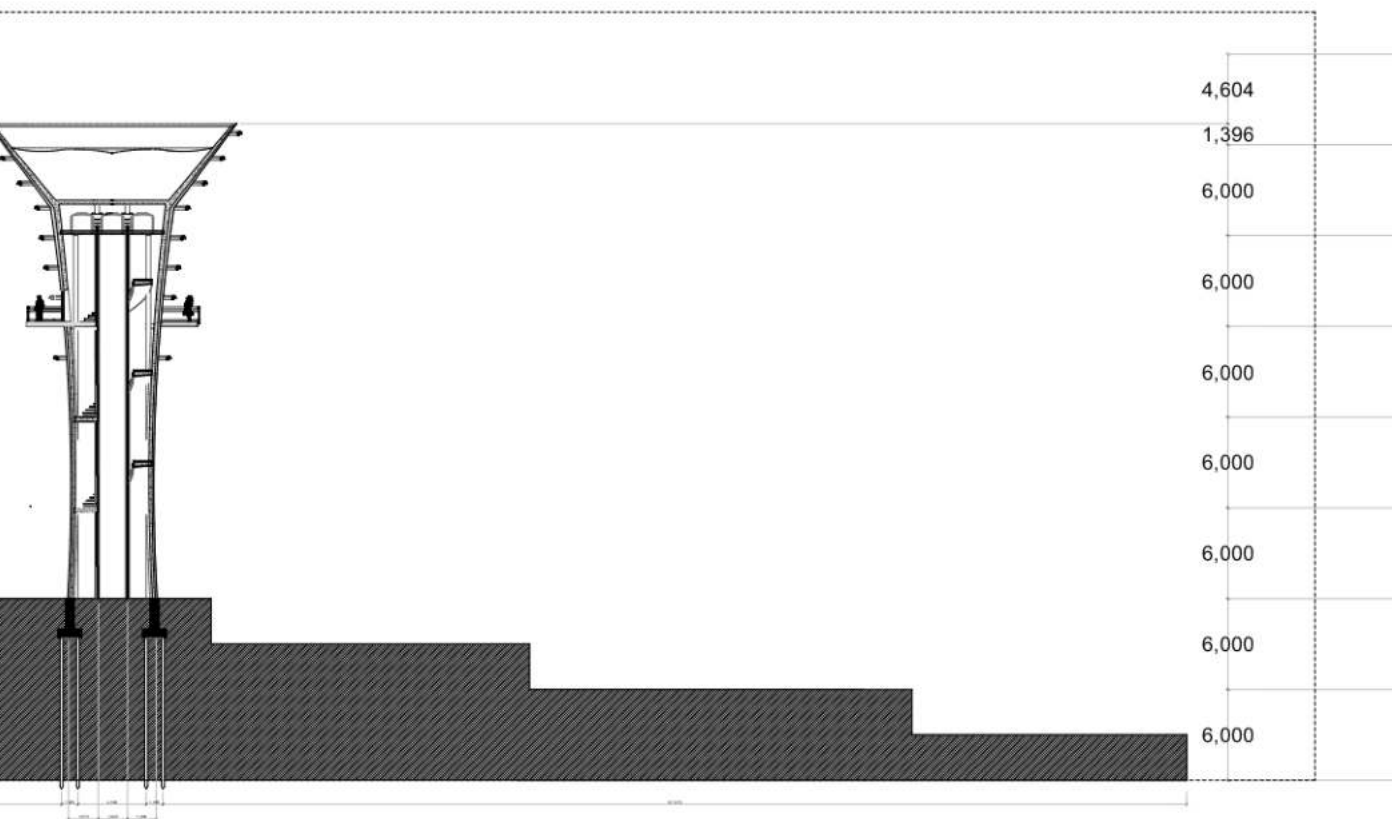


SECTION.3
Siteplan

SCALE

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DESCRIPTION



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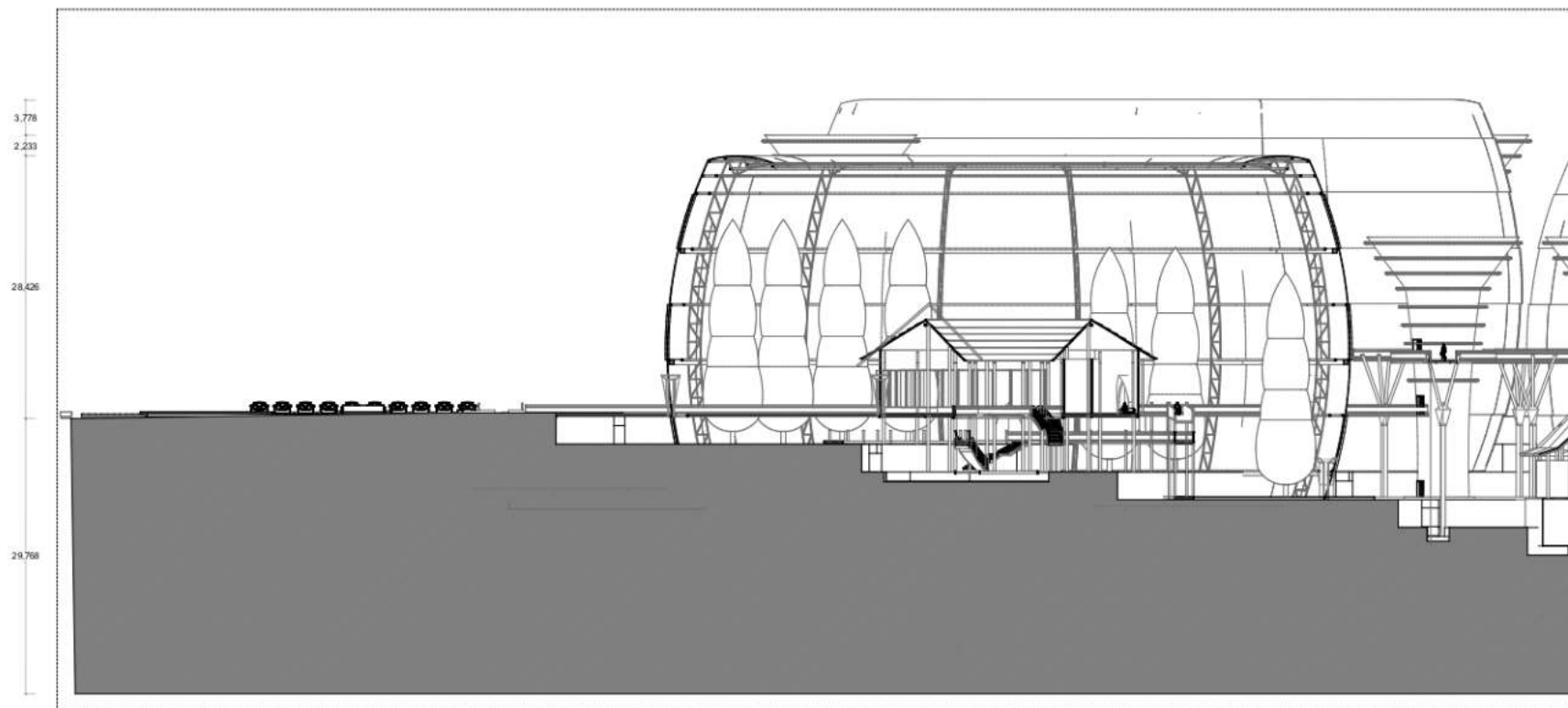
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section

building



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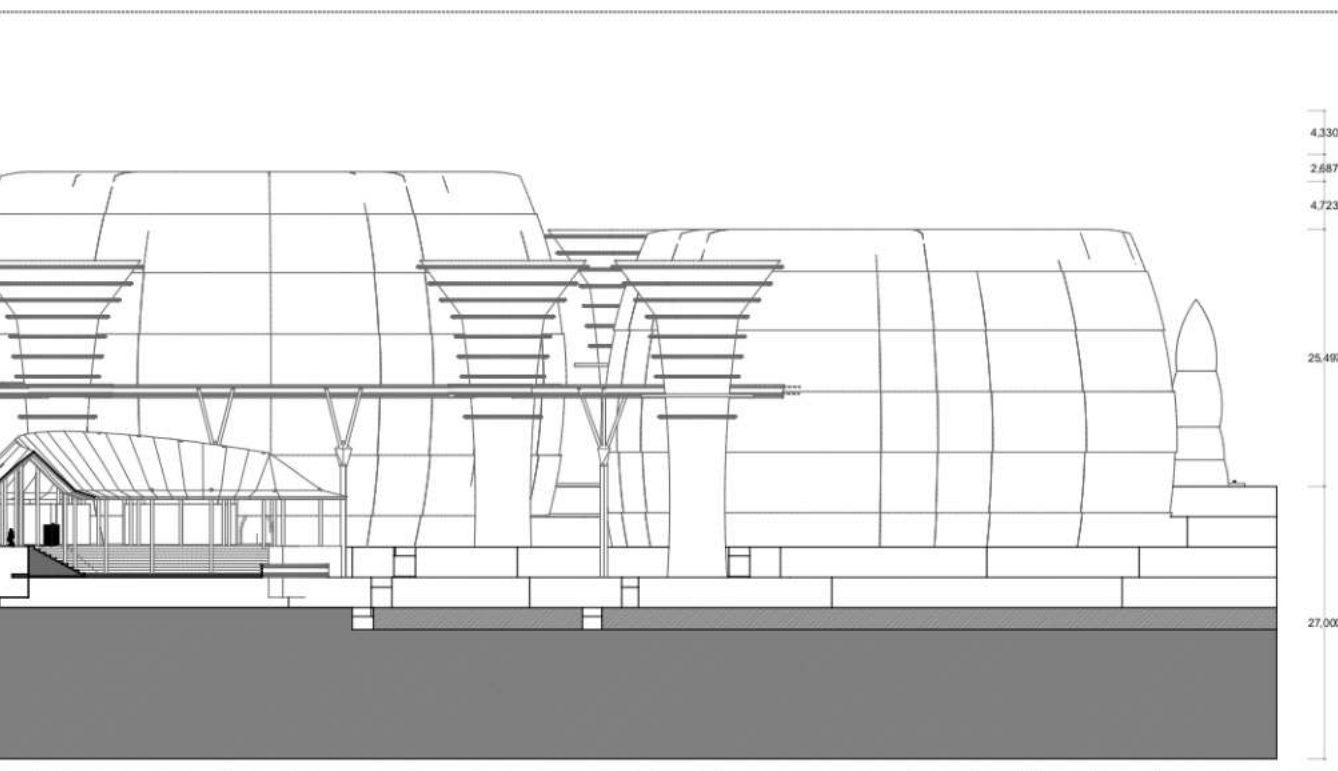


SECTION.4
SITEPLAN

SCALE

1:750

DESCRIPTION



1:750

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Total

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DRAWING TITLE



AXONO
SITEPLAN

SCALE

1:1000

DESCRIPTION

APROVAL

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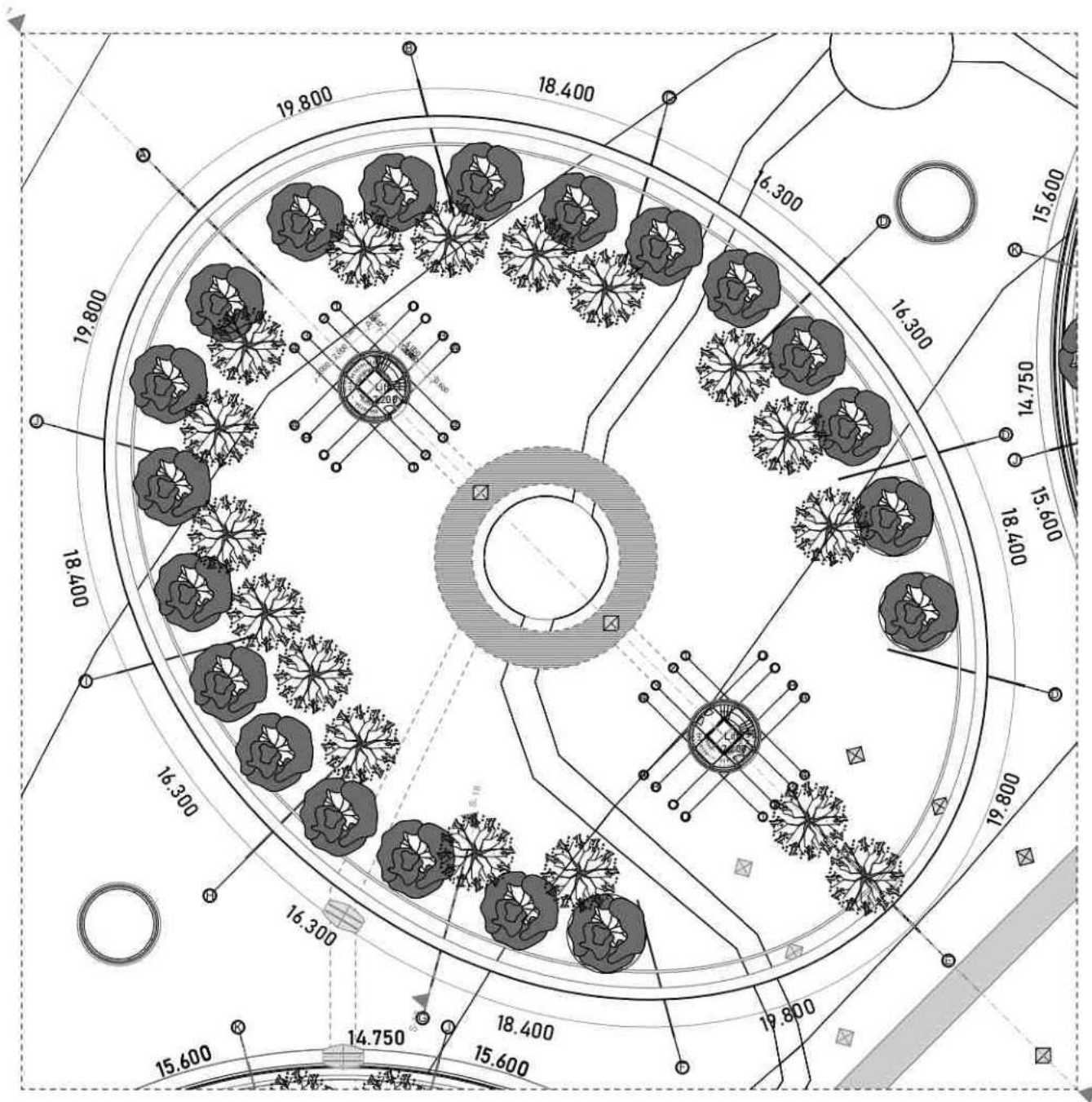
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Total

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1:1000



PLAN

BIRD WATCHING TOWER

1:500



PROJECT

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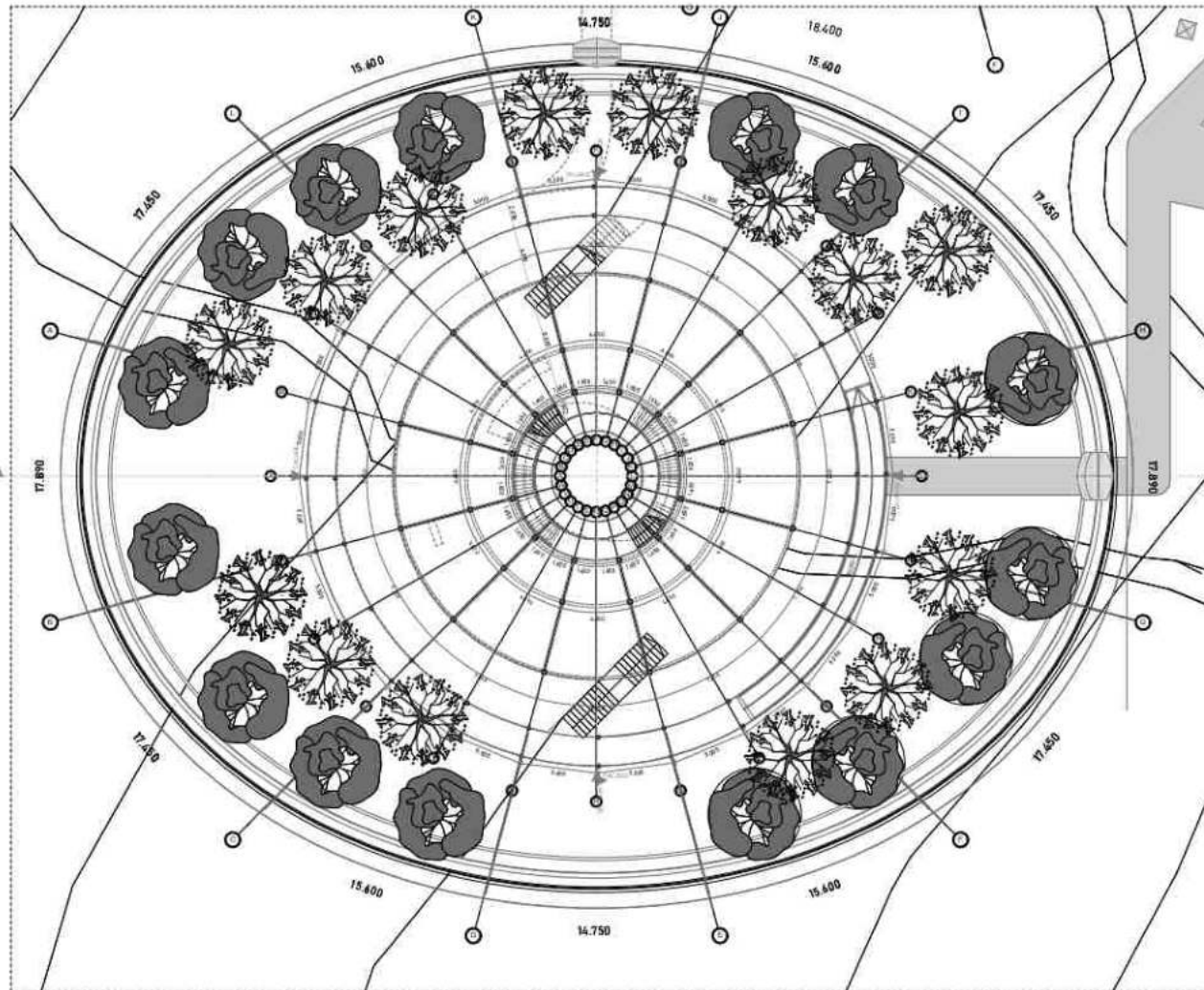
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PLAN
LANDSCAPE BIRD 1
AVIARY

SCALE 1:500

DESCRIPTION



PLAN

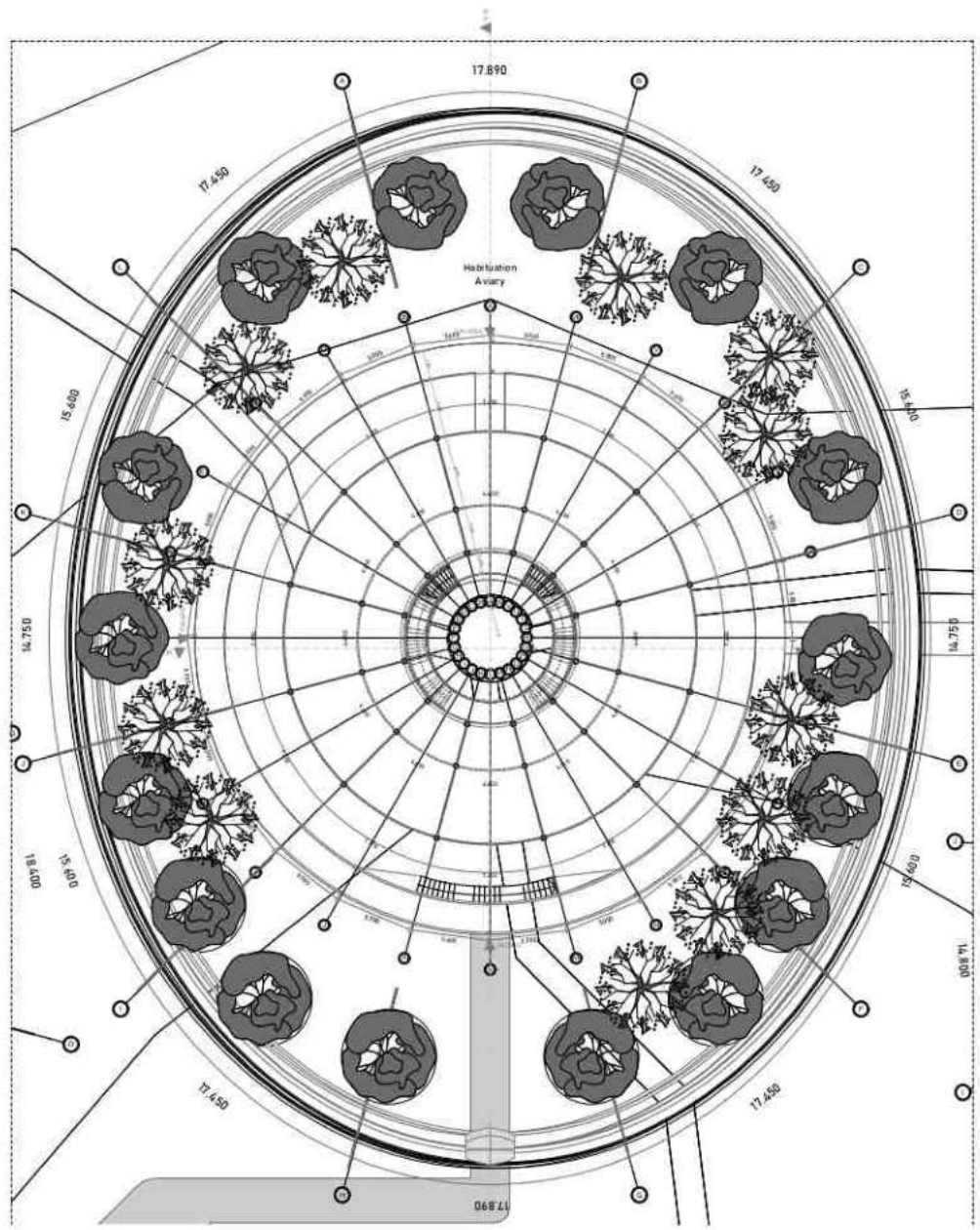
LANDSCAPE BIRD AVIARY

1:500

APPROVAL

Rev	

Page	Total
14	45



PLAN

LANDSCAPE REHABILITATION AVIARY

1:500



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DRAWING TITLE

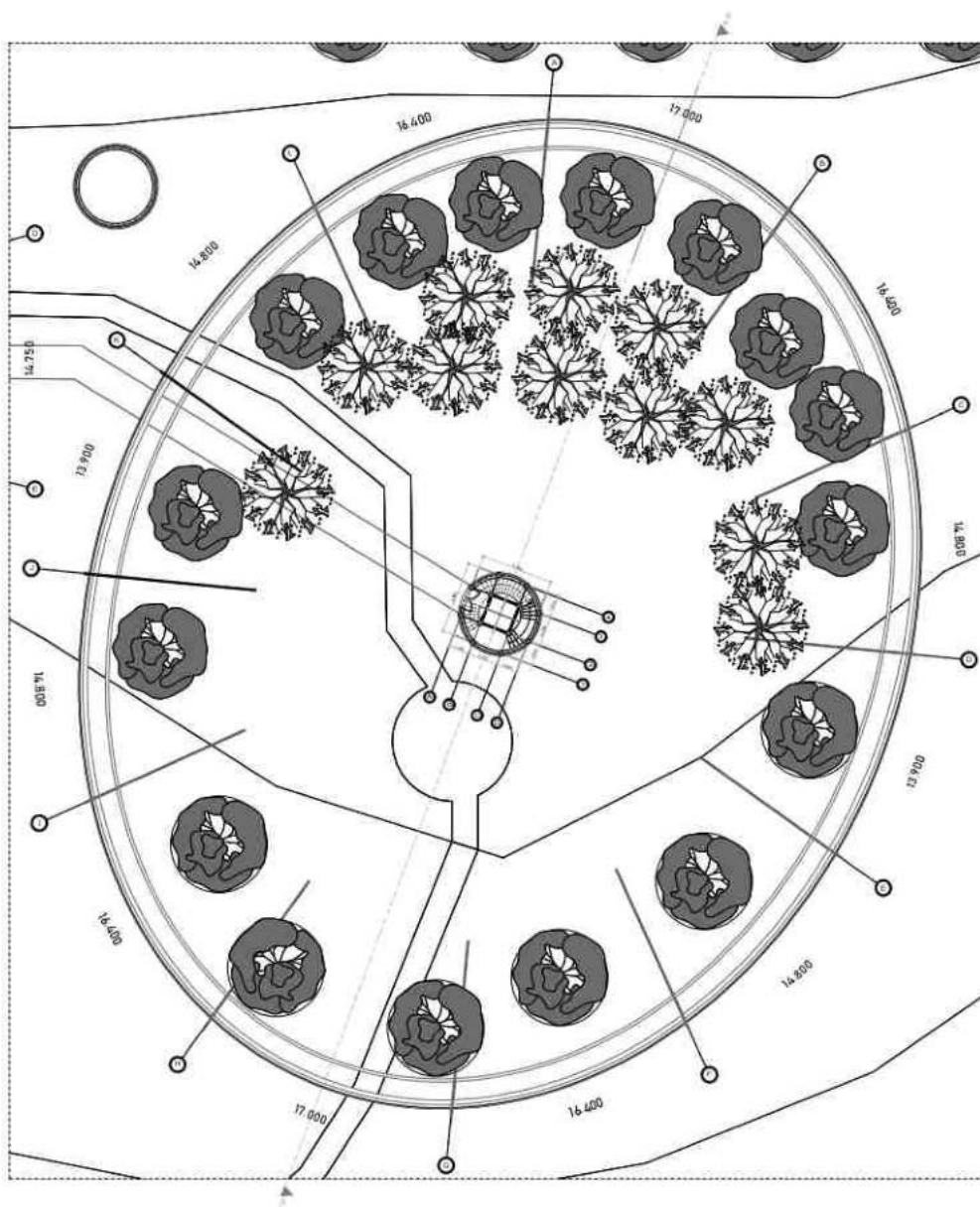


PLAN
LANDSCAPE BIRD2
AVIARY

SCALE

1:500

DESCRIPTION

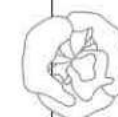


PLAN

LANDSCAPE BREEDING AVIARY

1:500

LEGEND



Pine Tree



Sengon Tree

APPROVAL

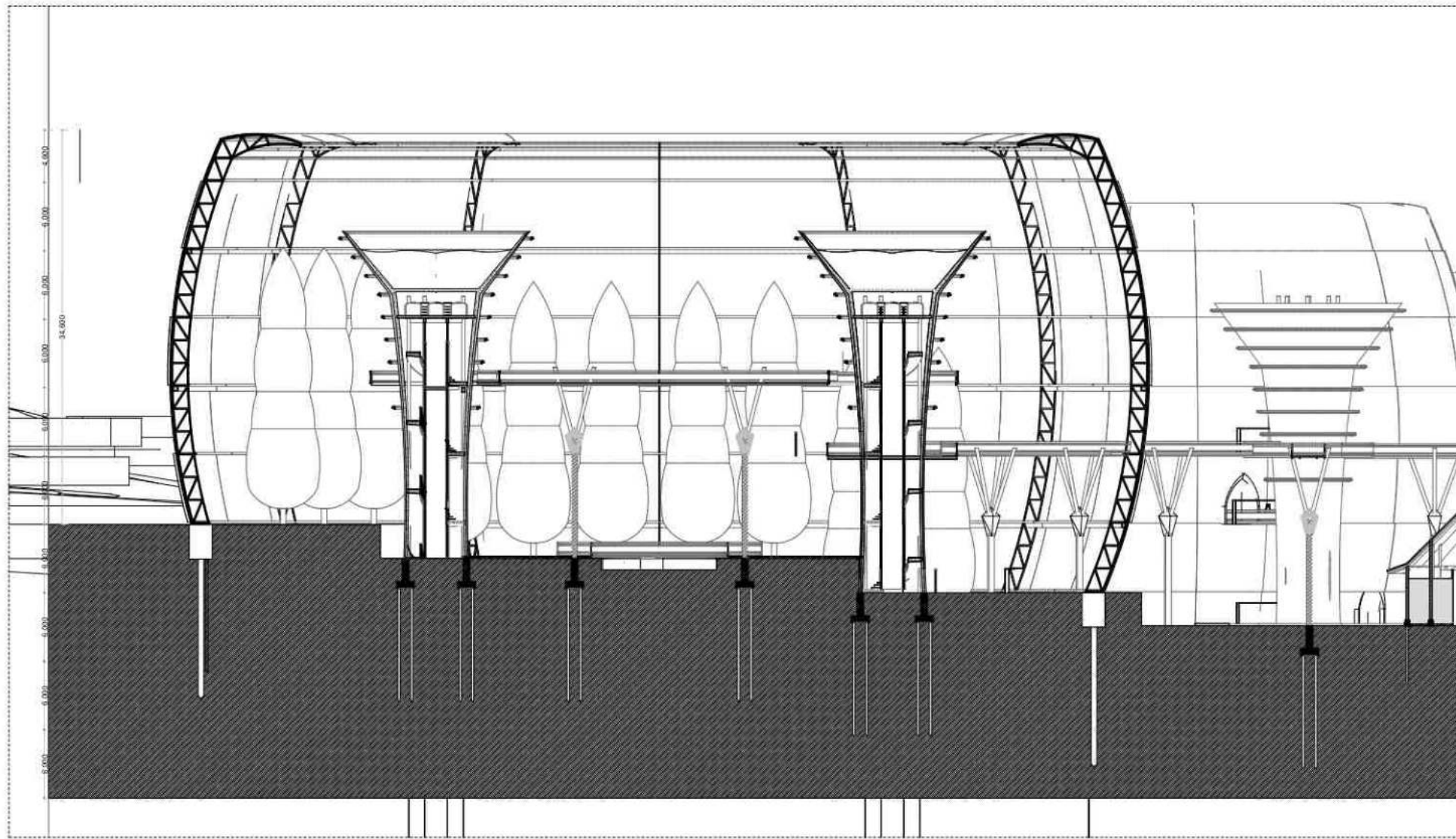
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section

raptor aviary (1)



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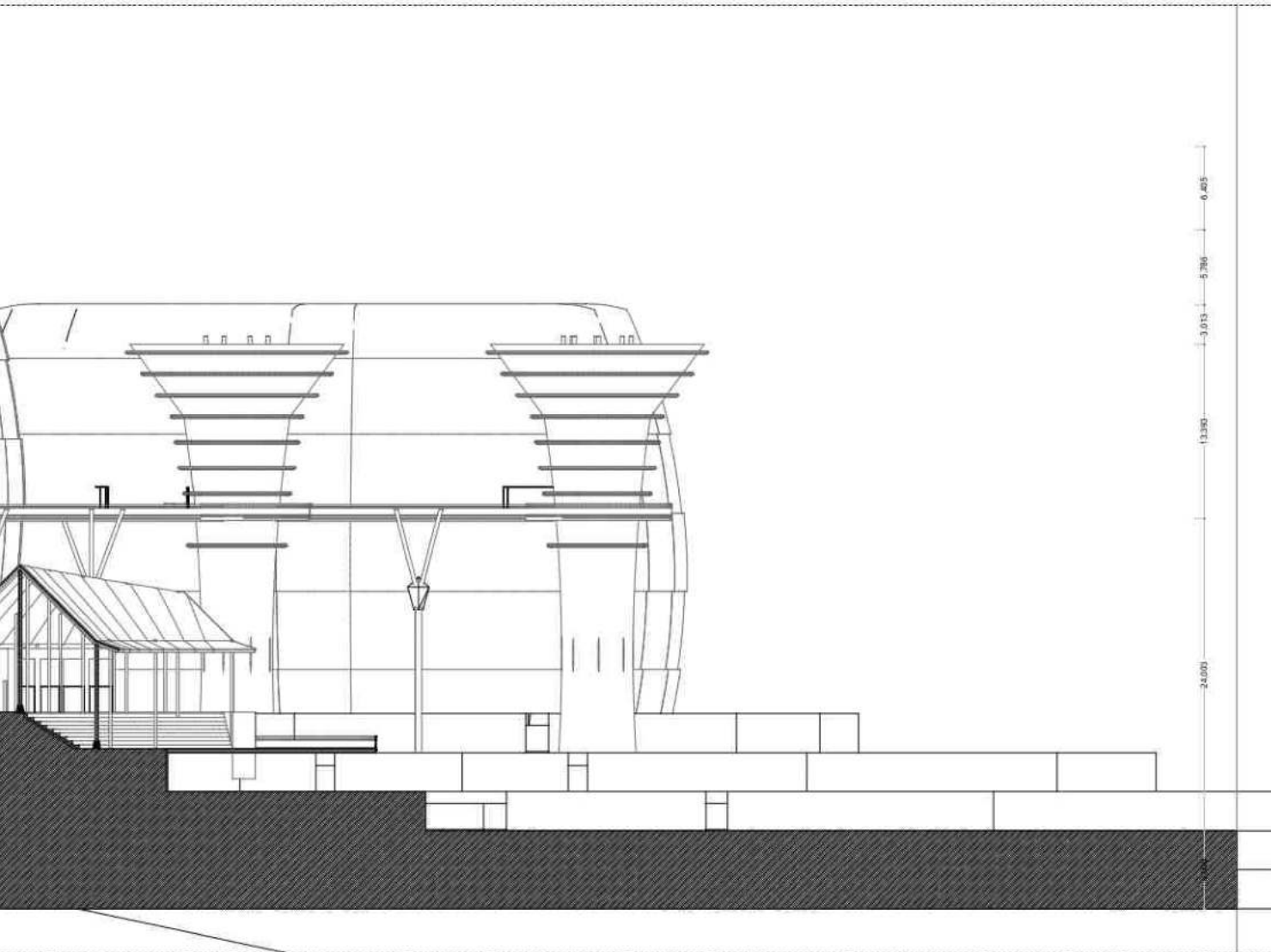
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SECTION
Raptor aviary

SCALE 1:500

DESCRIPTION



1:500

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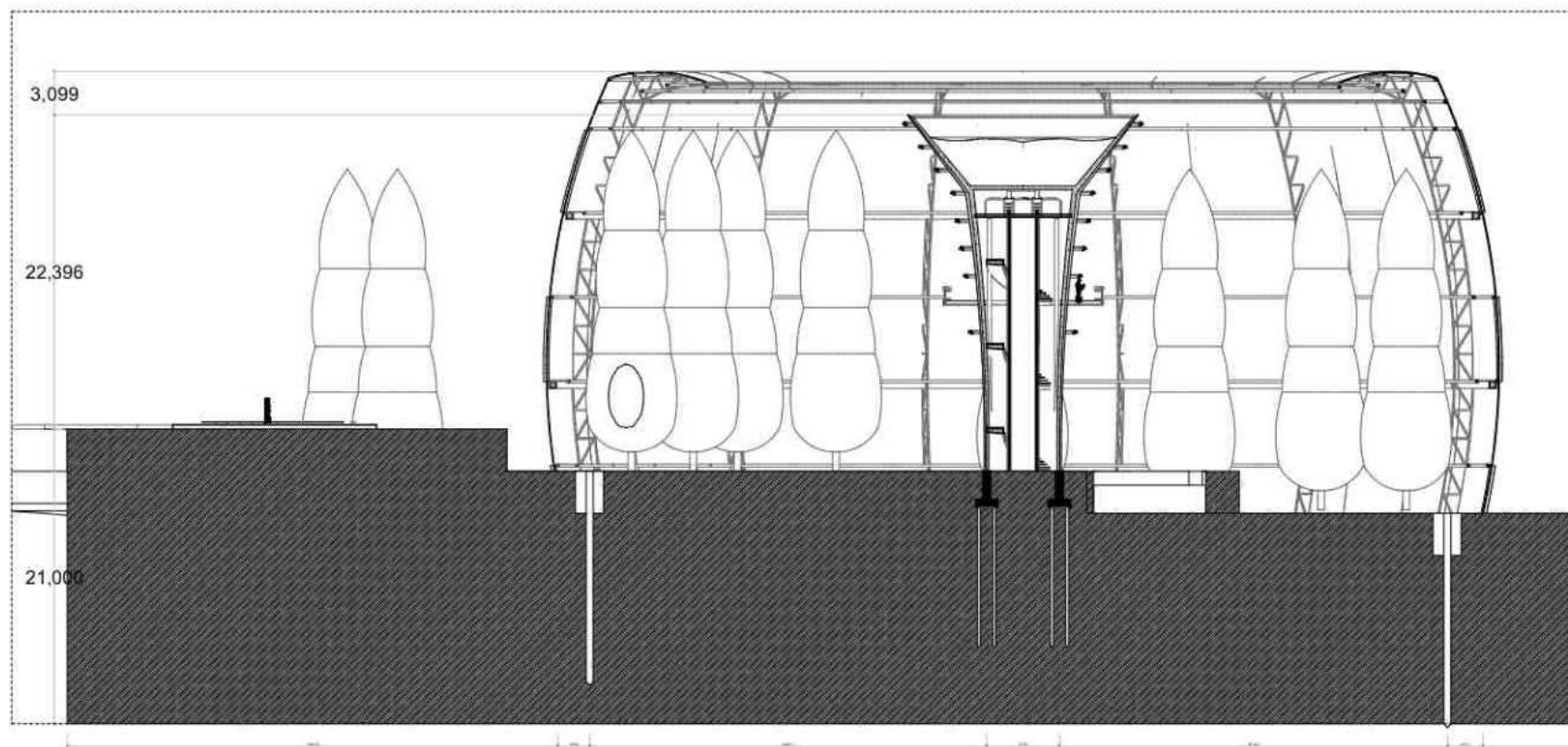
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section

breeding aviary



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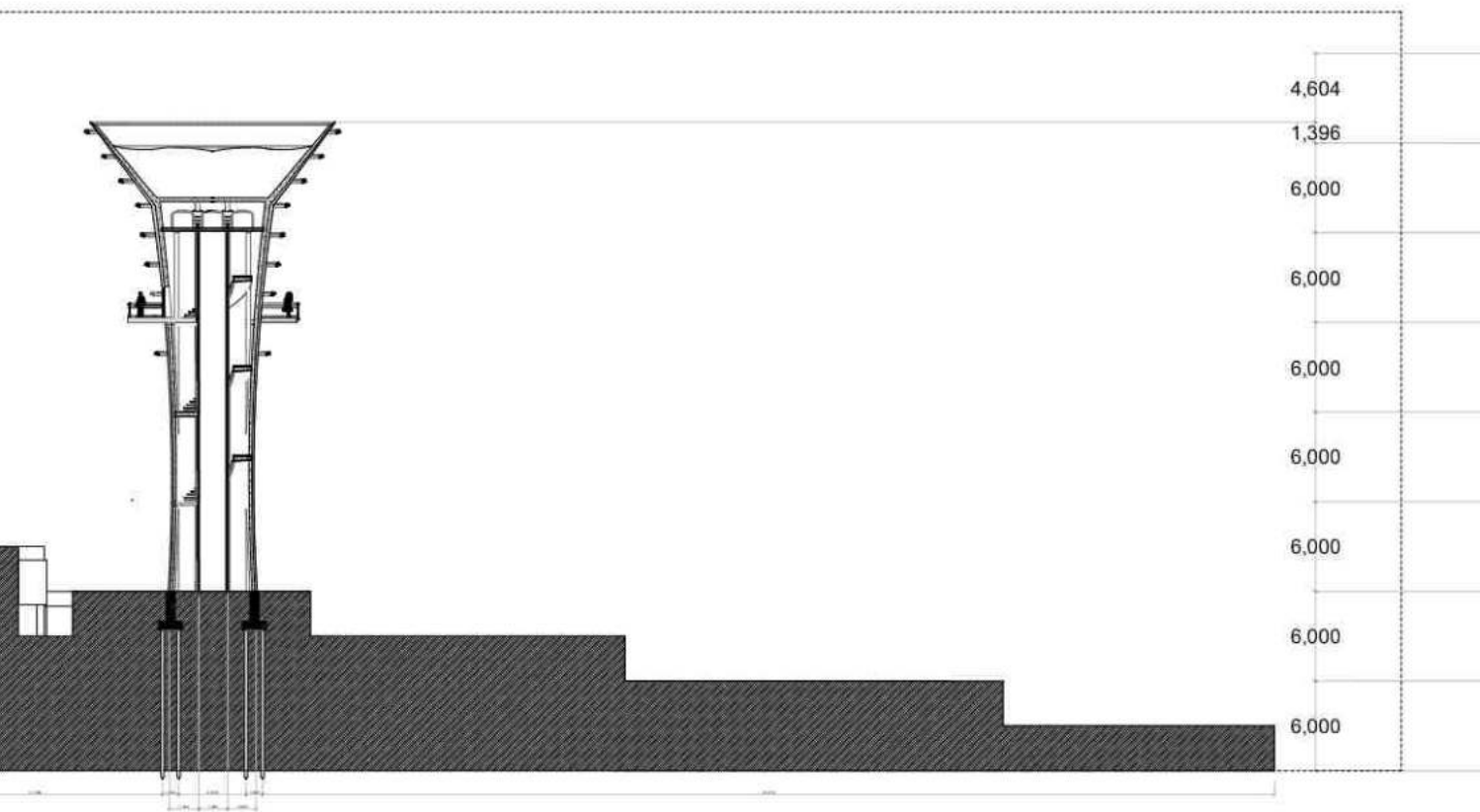


SECTION
BREEDING

SCALE

1:500

DESCRIPTION



(1)

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APPROVAL

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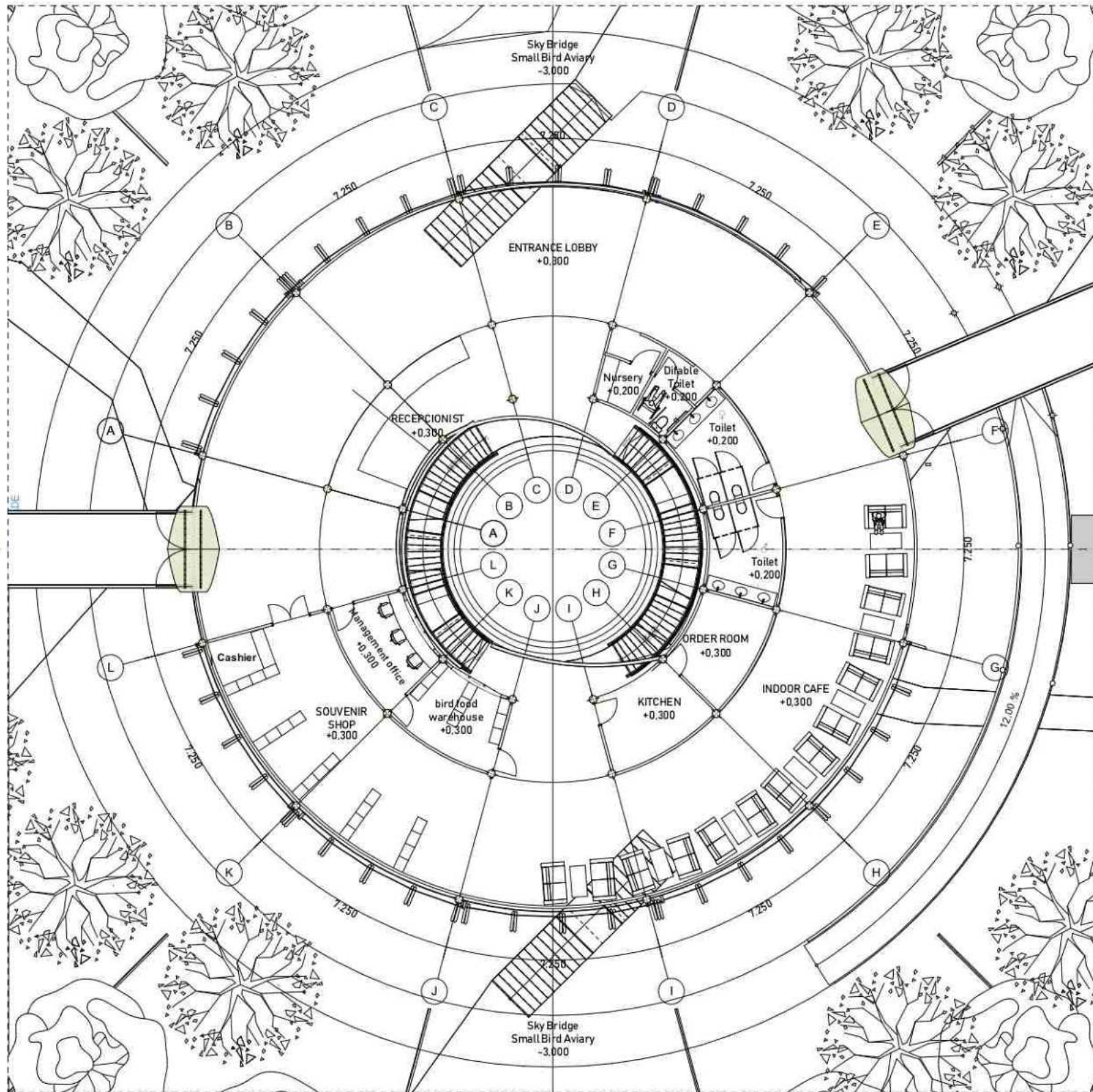
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PLAN

MAIN BUILDING

1:200

PLAN



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PLAN
MAIN BUILDING

SCALE 1:200

DESCRIPTION



Pine Tree



Sengon Tree

APPROVAL

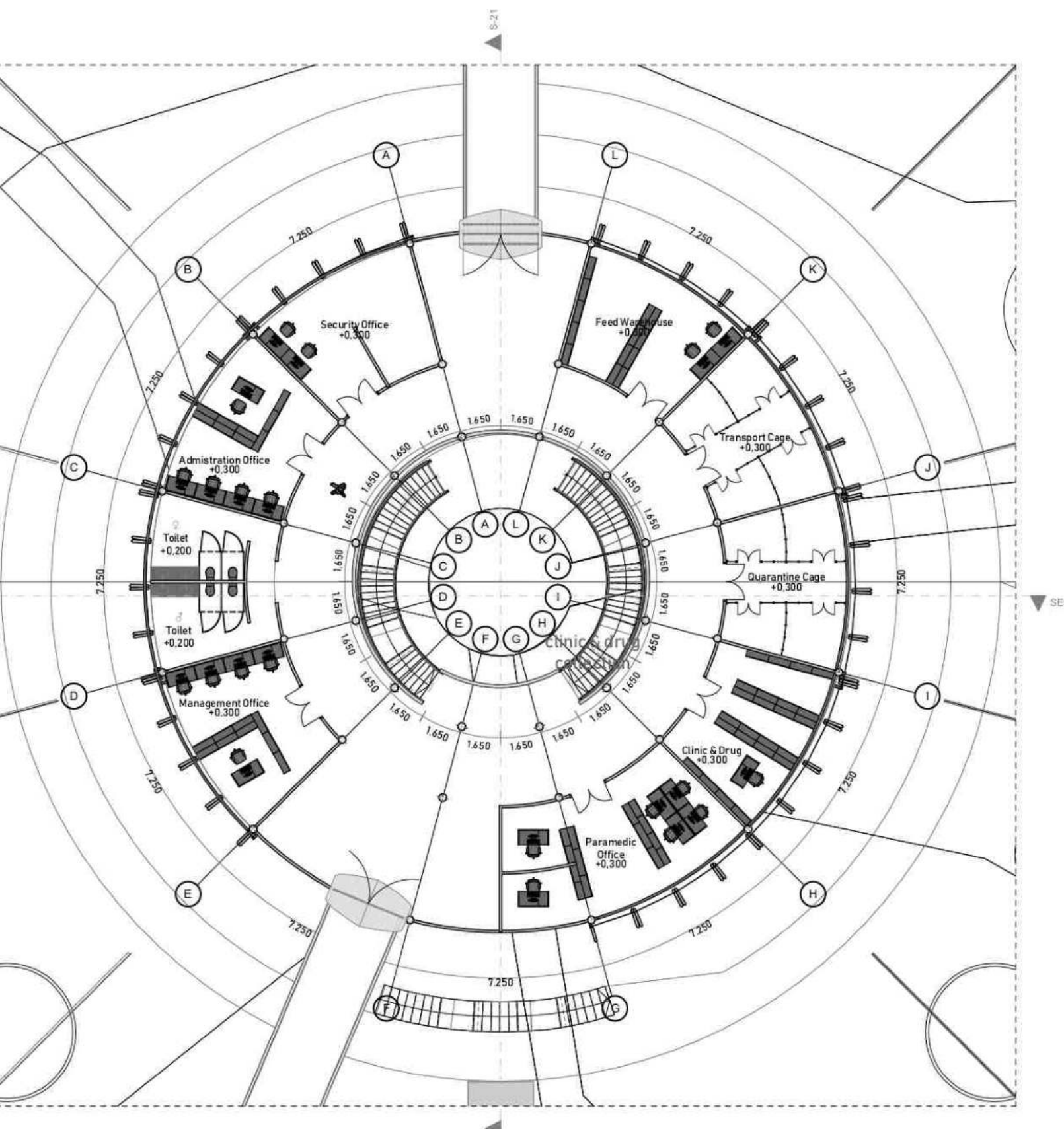
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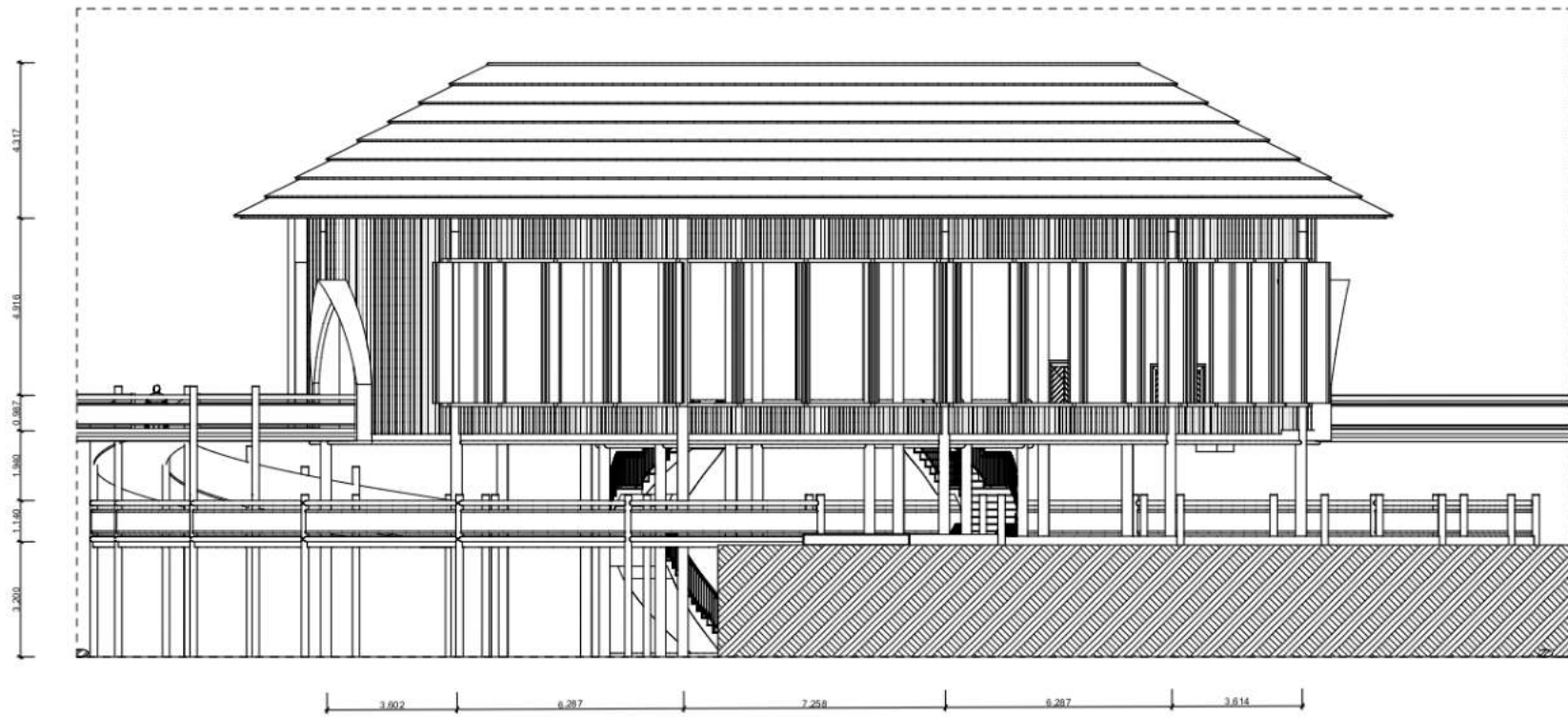
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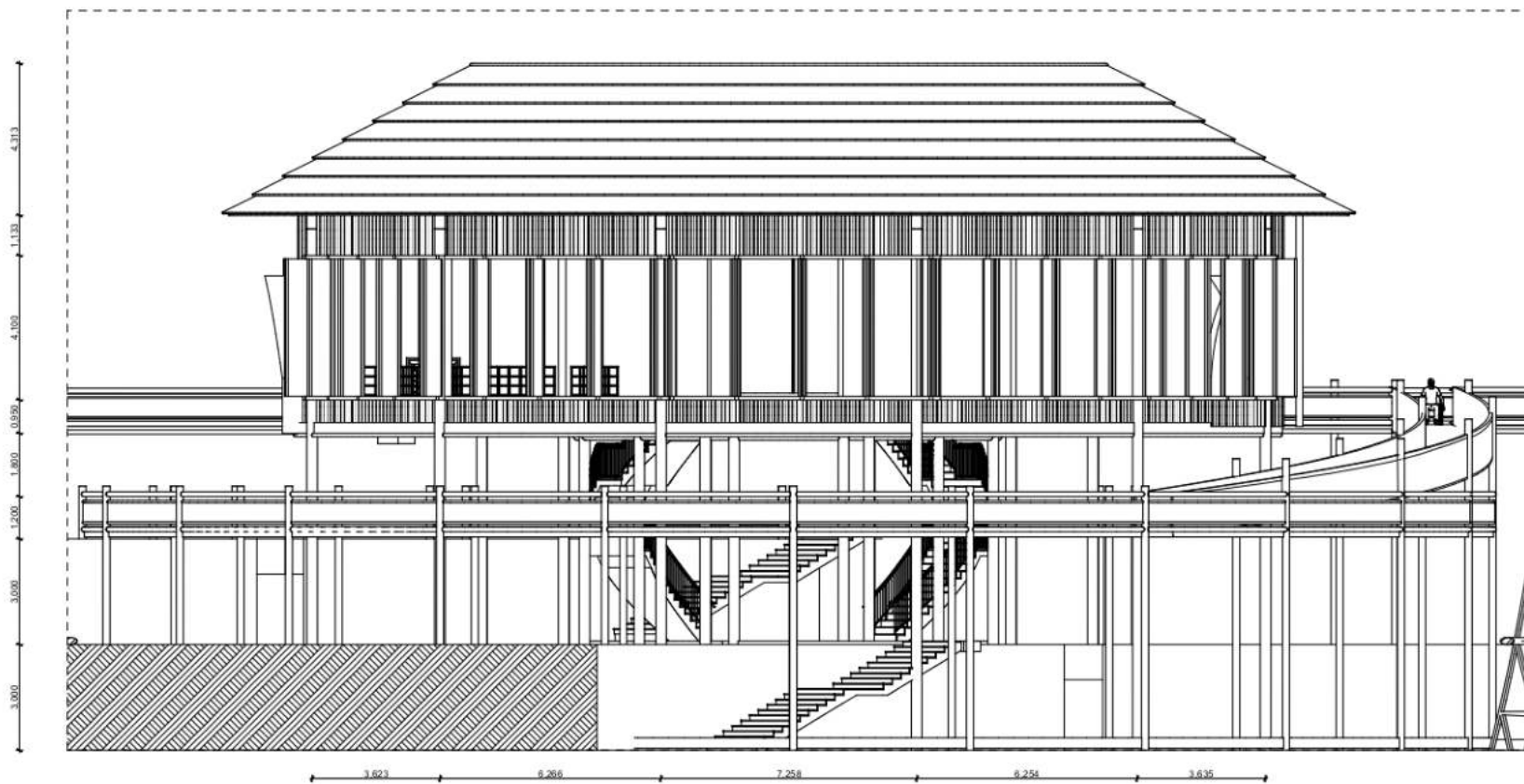
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FACADE

NORTH MAIN BUILDING

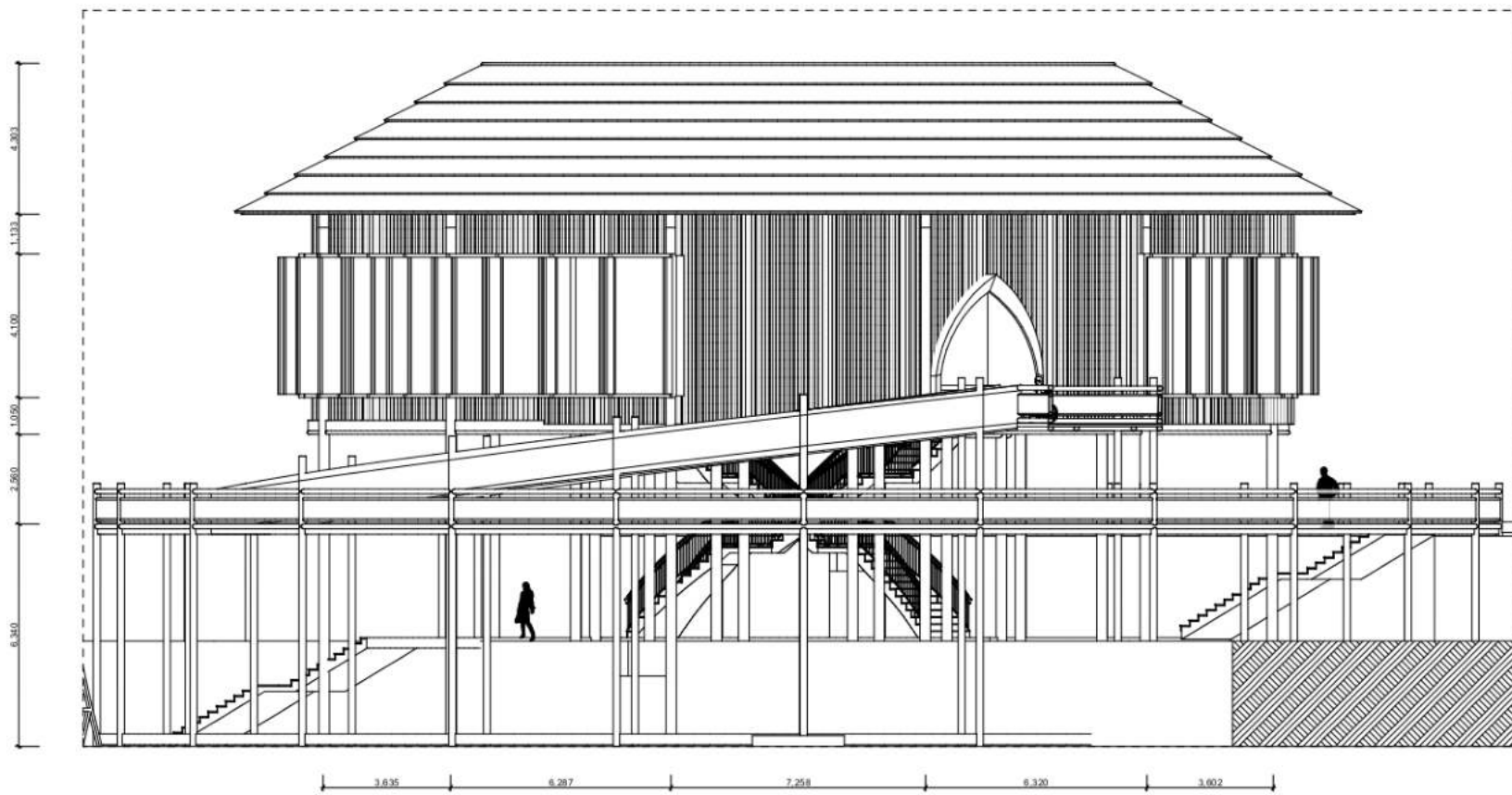
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FACADE

SOUTH MAIN BUILDING

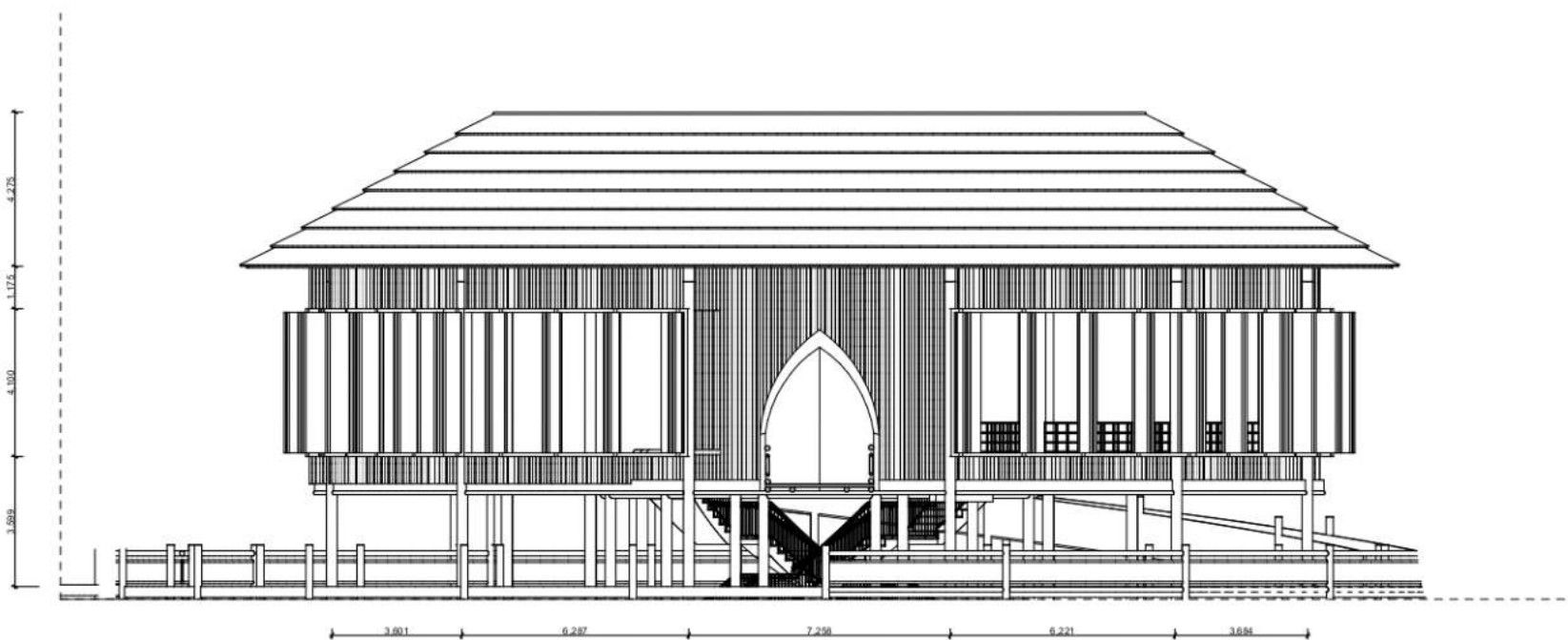
1:200



FACADE

EAST MAIN BUILDING

1:200



FACADE

WEST MAIN BUILDING

1:200



DEPARTMENT of
ARCHITECTURE
Universitas Islam Indonesia

PROJECT

**Jatimulyo
Bird Conservation**

in Kulonprogo with Environmental
Behaviour Design Approach

SUPERVISOR

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EXAMINER

Prof. Noor Choliz Idham, Ph.D., IAI.
Dr. Ing. Putu Ayu P. Agustiananda, S.T., MA

STUDENT

Panji Sultan Alfatriyan
17512169

DRAWING TITLE



ELEVATION
MAIN BUILDING

SCALE 1:200

DESCRIPTION

APPROVAL

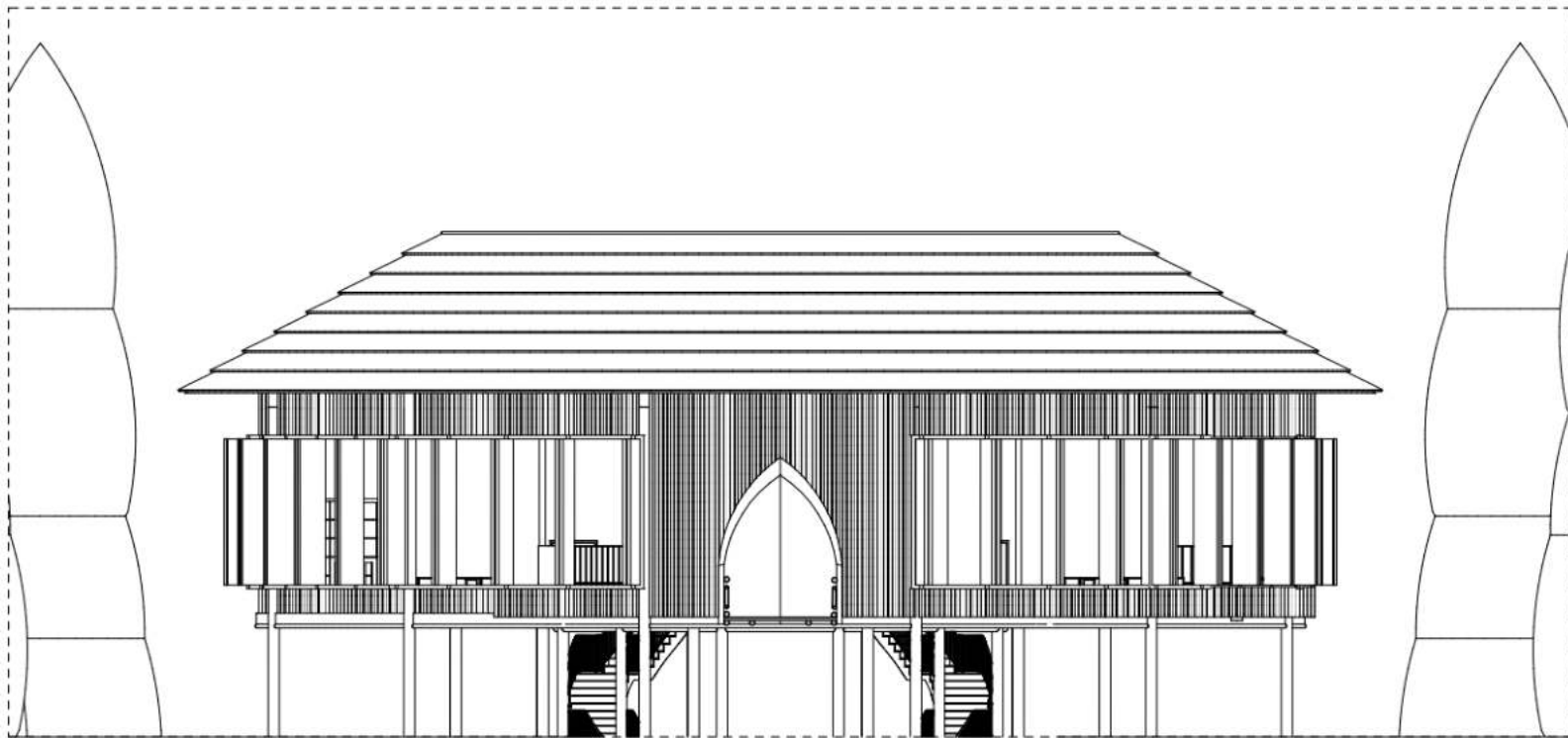
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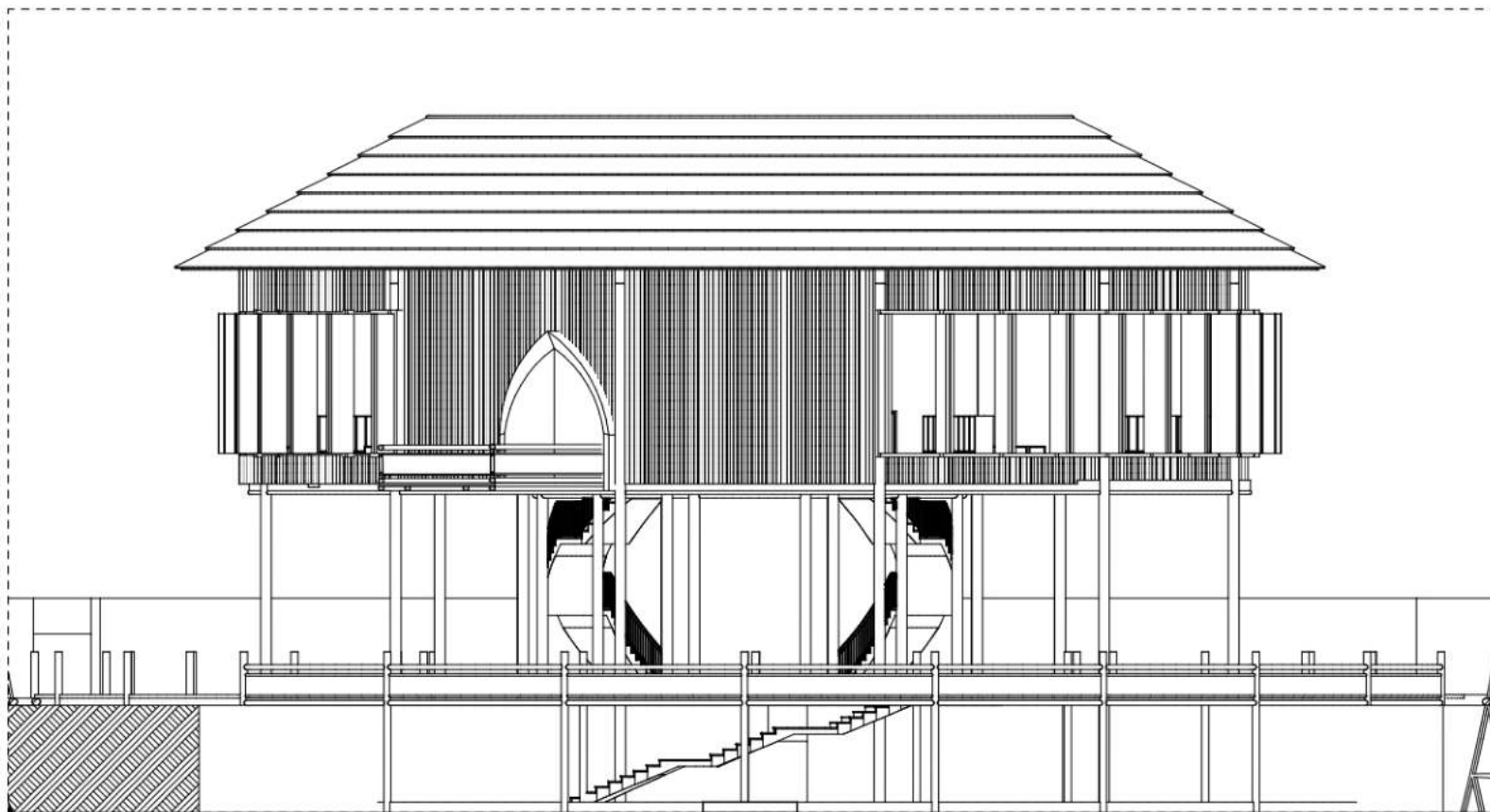
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FACADE

N REHAB BUILDING

1:200



FACADE

S REHAB BUILDING

1:200



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ELEVATION
REHAB BUILDING

SCALE 1:200

DESCRIPTION

APPROVAL

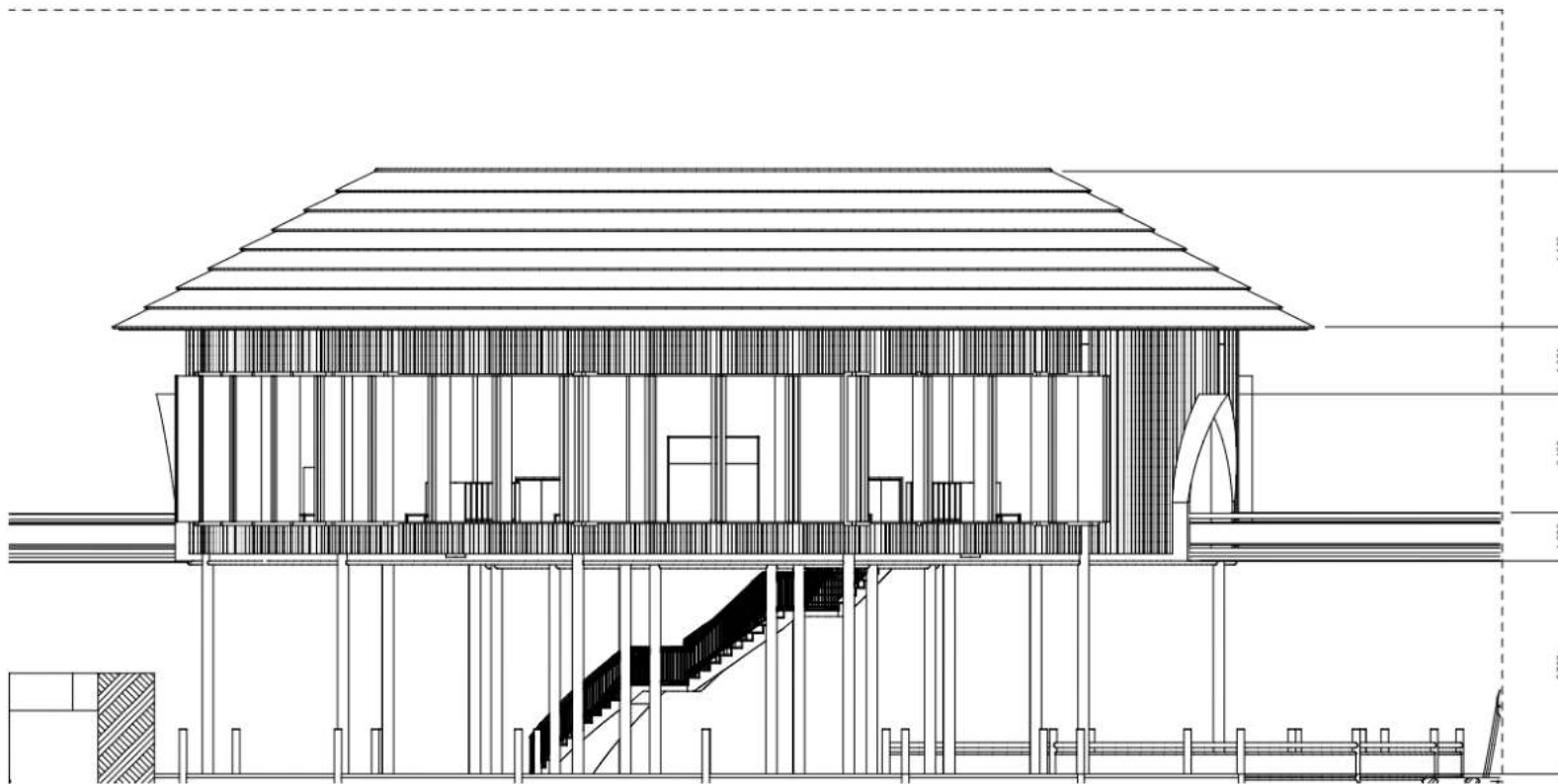
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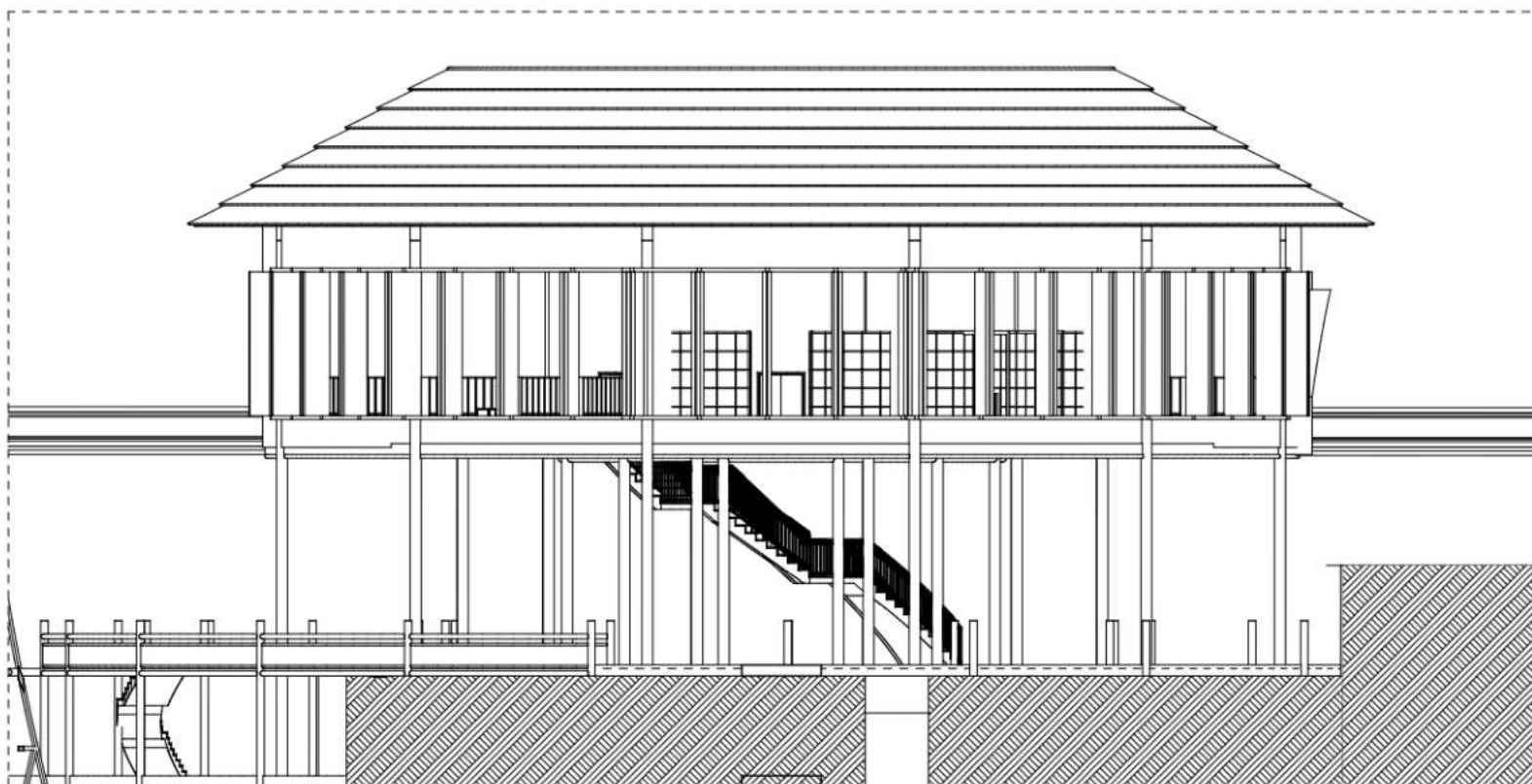
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FACADE

E REHAB BUILDING (1)

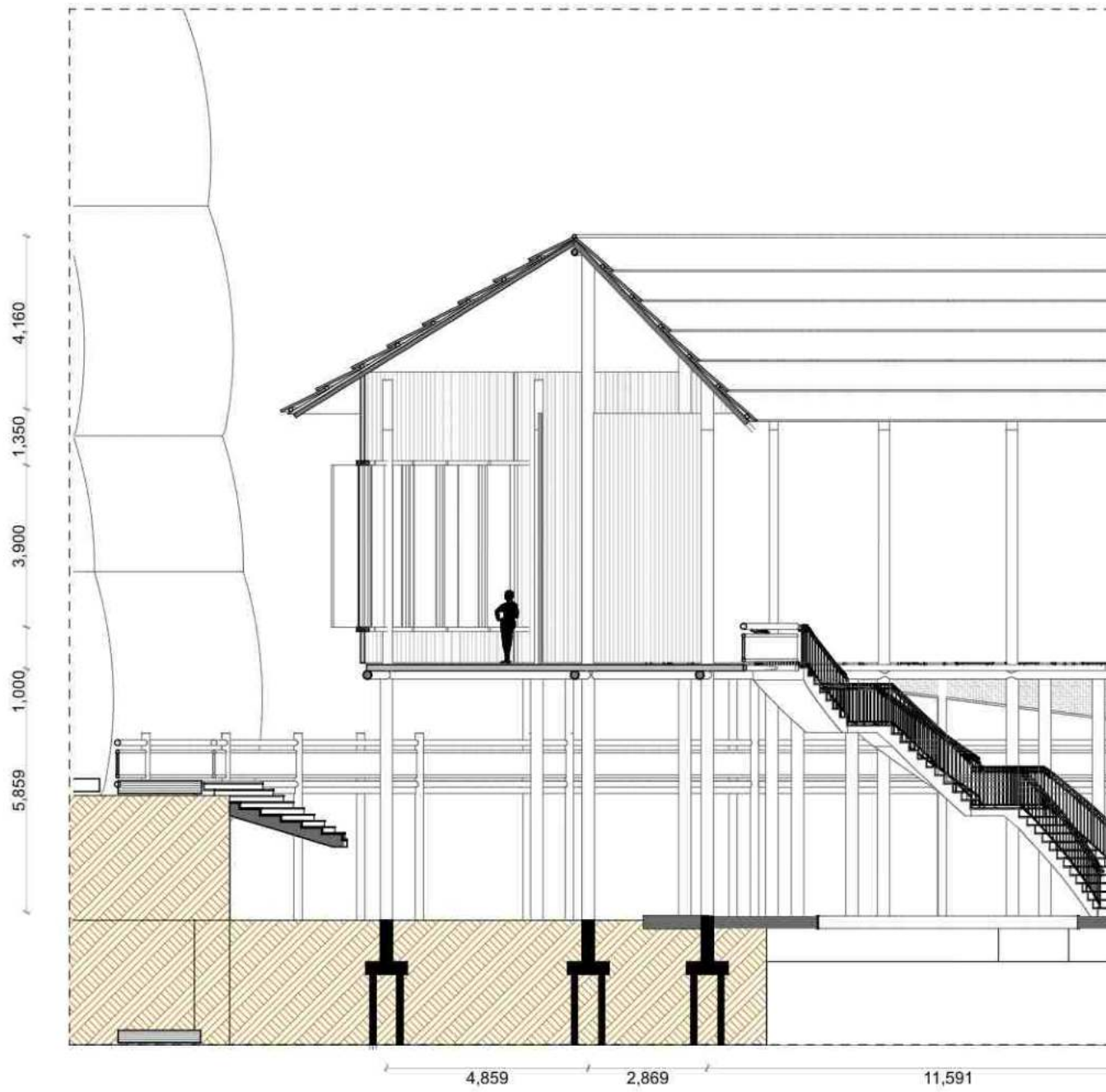
1:200



FACADE

W REHAB BUILDING

1:200



section

Main Building



PROJECT

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DRAWING TITLE

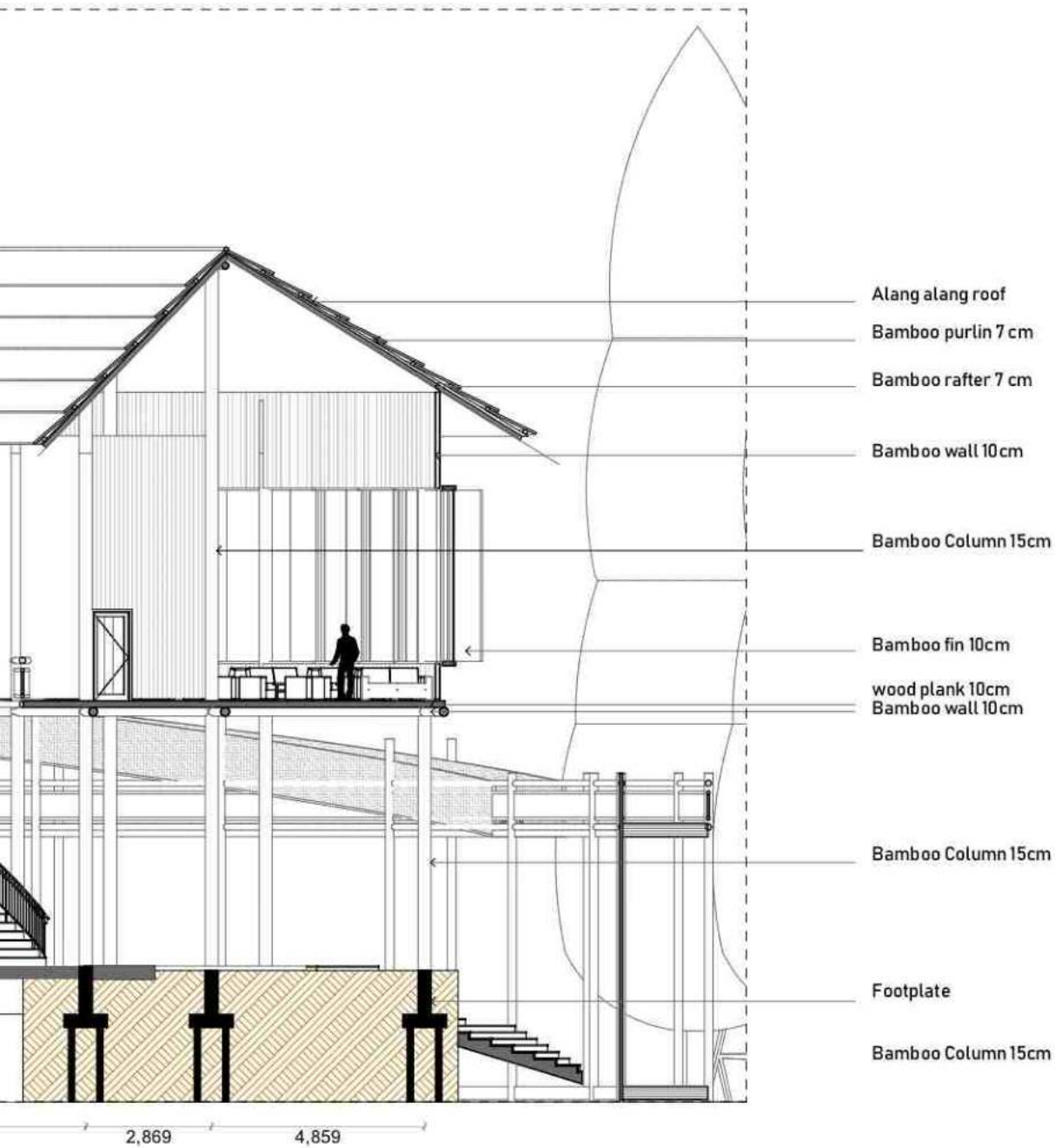


SECTION
MAIN BUILDING

SCALE

1:150

DESCRIPTION



1:150

APPROVAL

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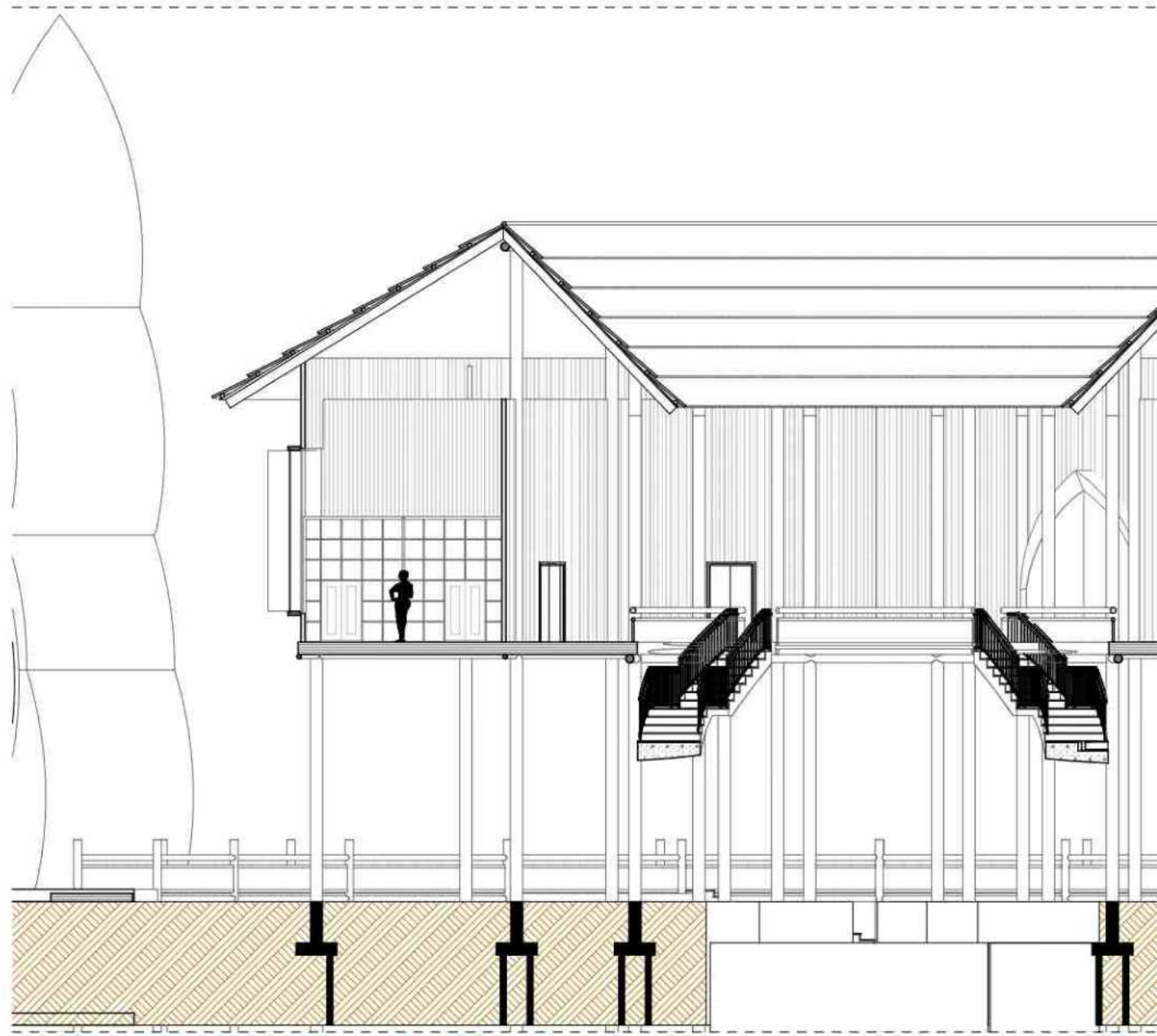
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Total

45



SECTION

REHAB BUILDING



PROJECT


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SECTION
REHAB BUILDING

SCALE 1:150

DESCRIPTION

APPROVAL

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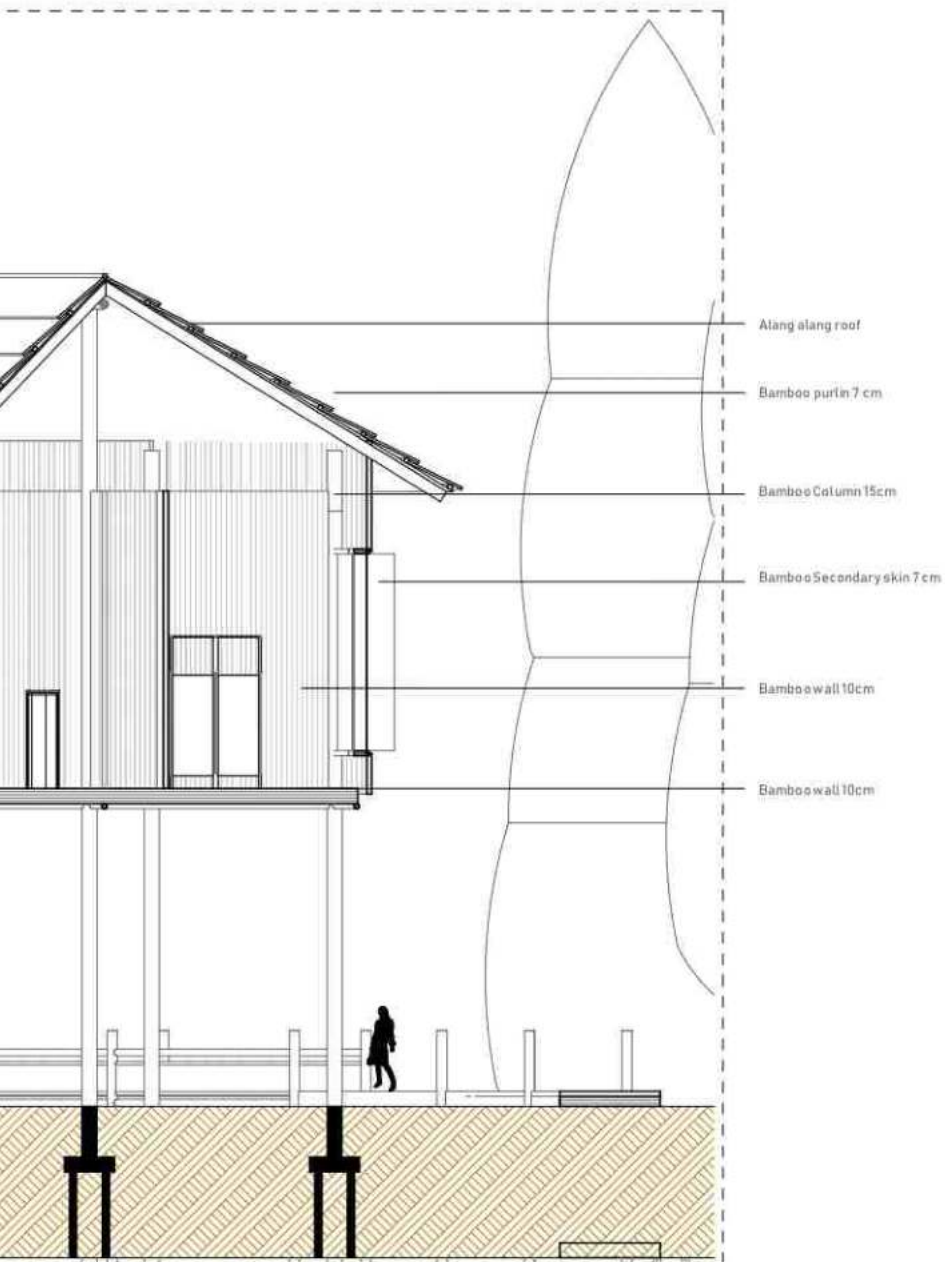
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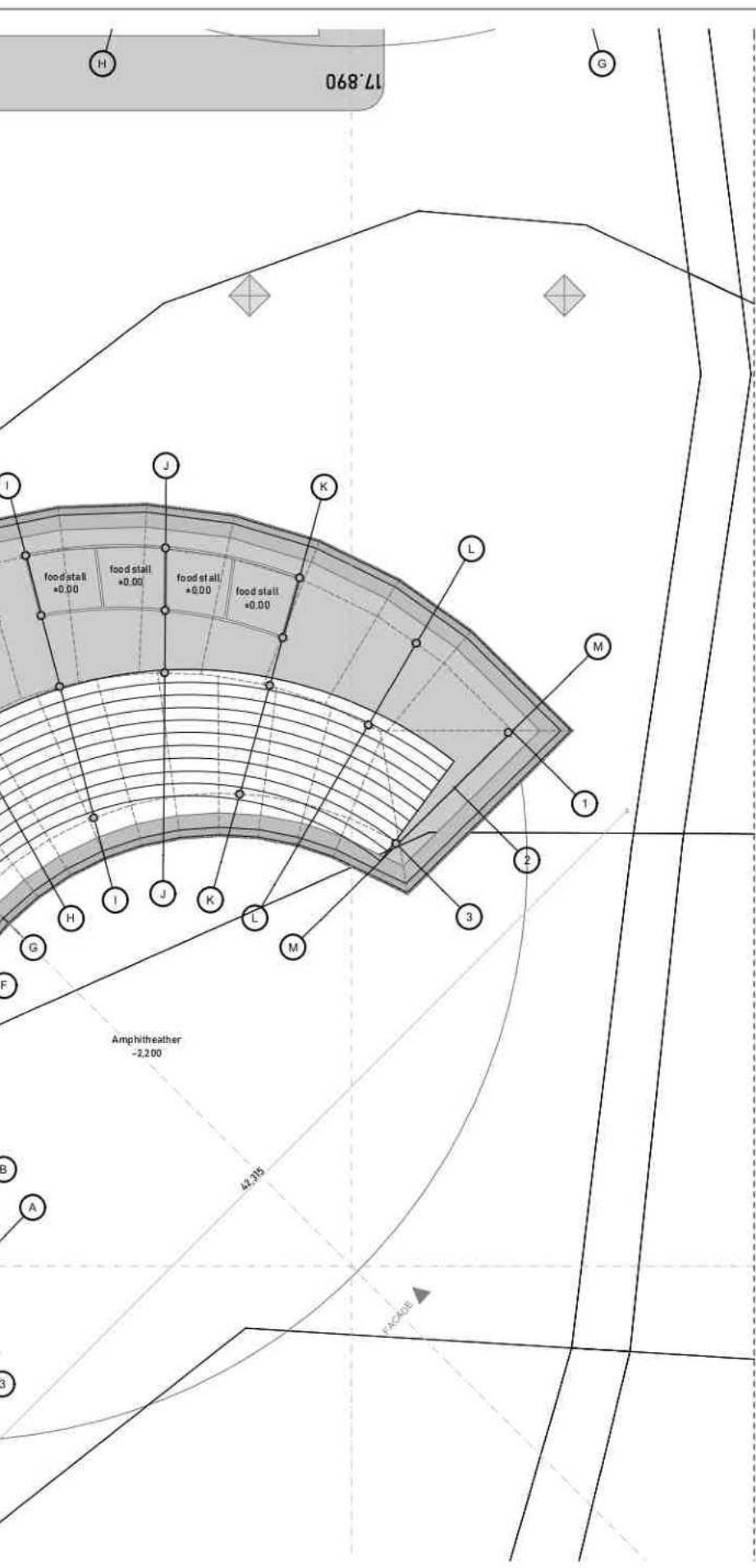
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Total

45



1:150



THEATER

1:250



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DRAWING TITLE



PLAN
FOOD COURT

SCALE

1:250

DESCRIPTION

APPROVAL			

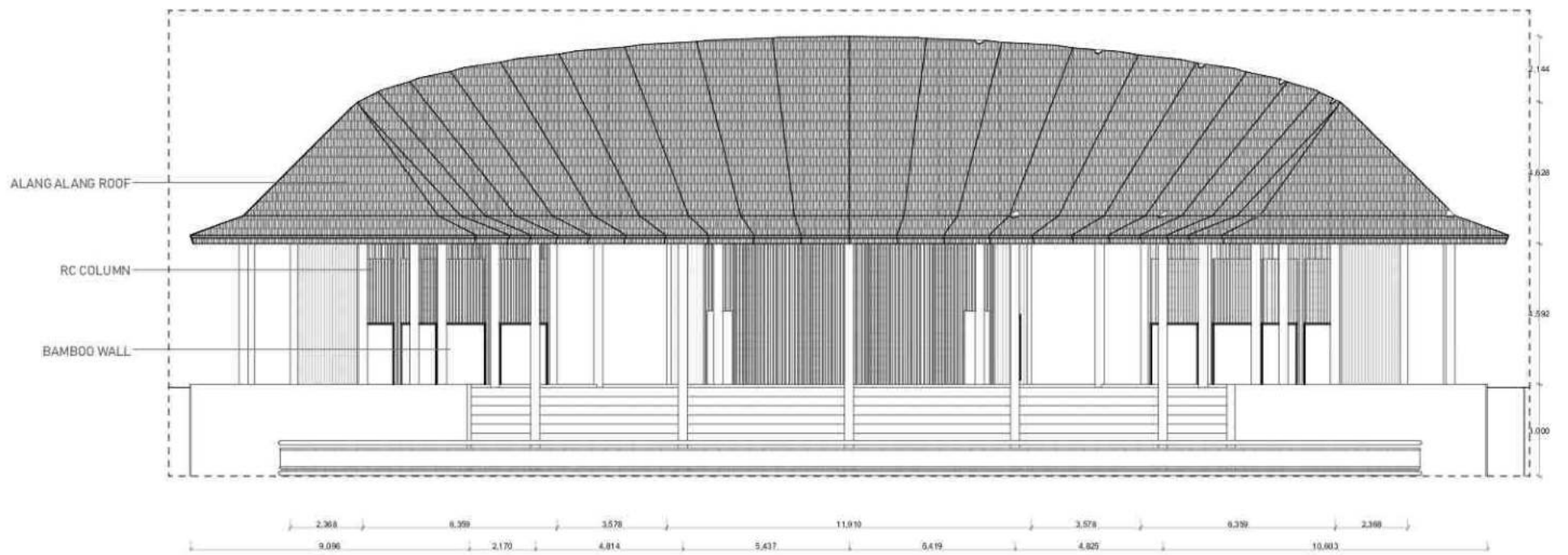
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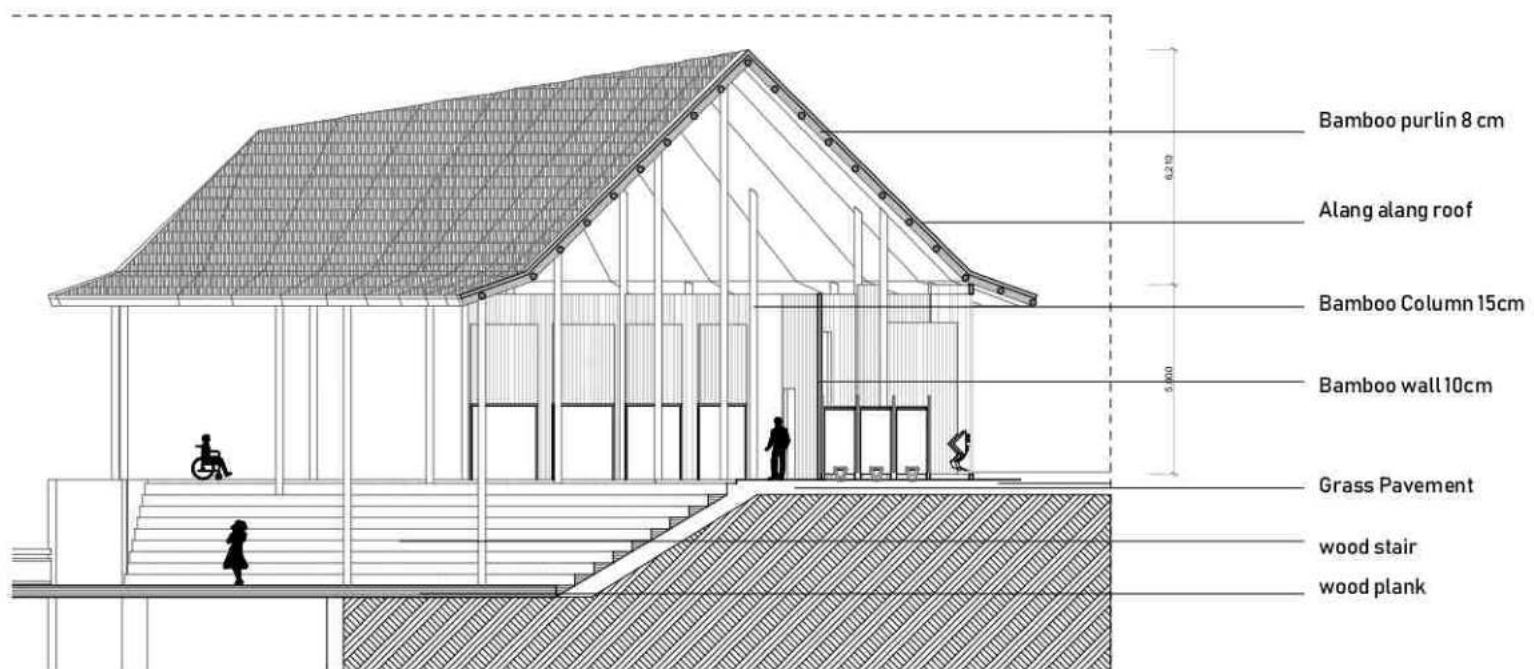
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ELEVATION

SE FOODCOURT

1:200



SSECTION

FOOD COURT

1:200



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DRAWING TITLE



ELEVATION
SE FOOD COURT

SCALE

1:200, 1:250

DESCRIPTION

APPROVAL

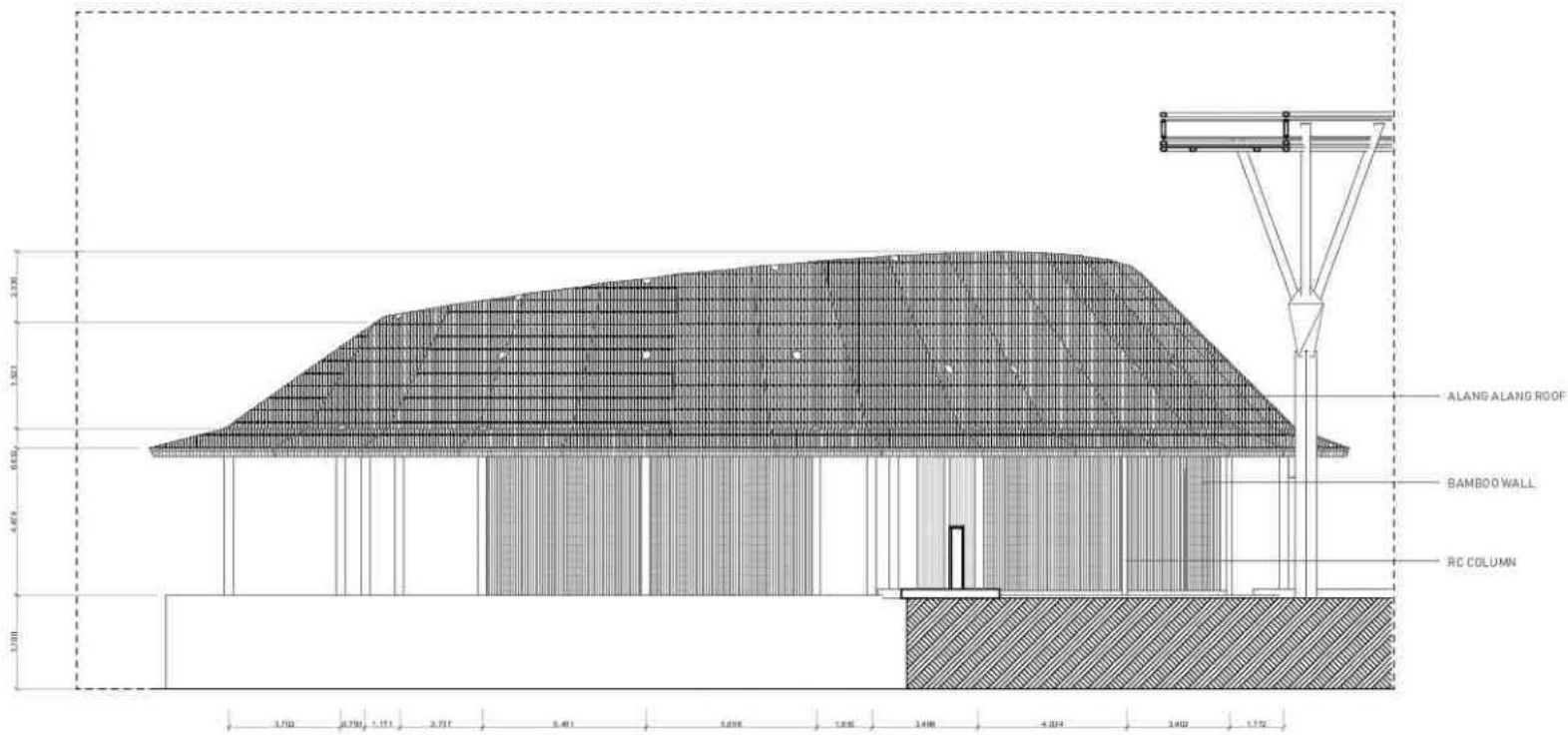
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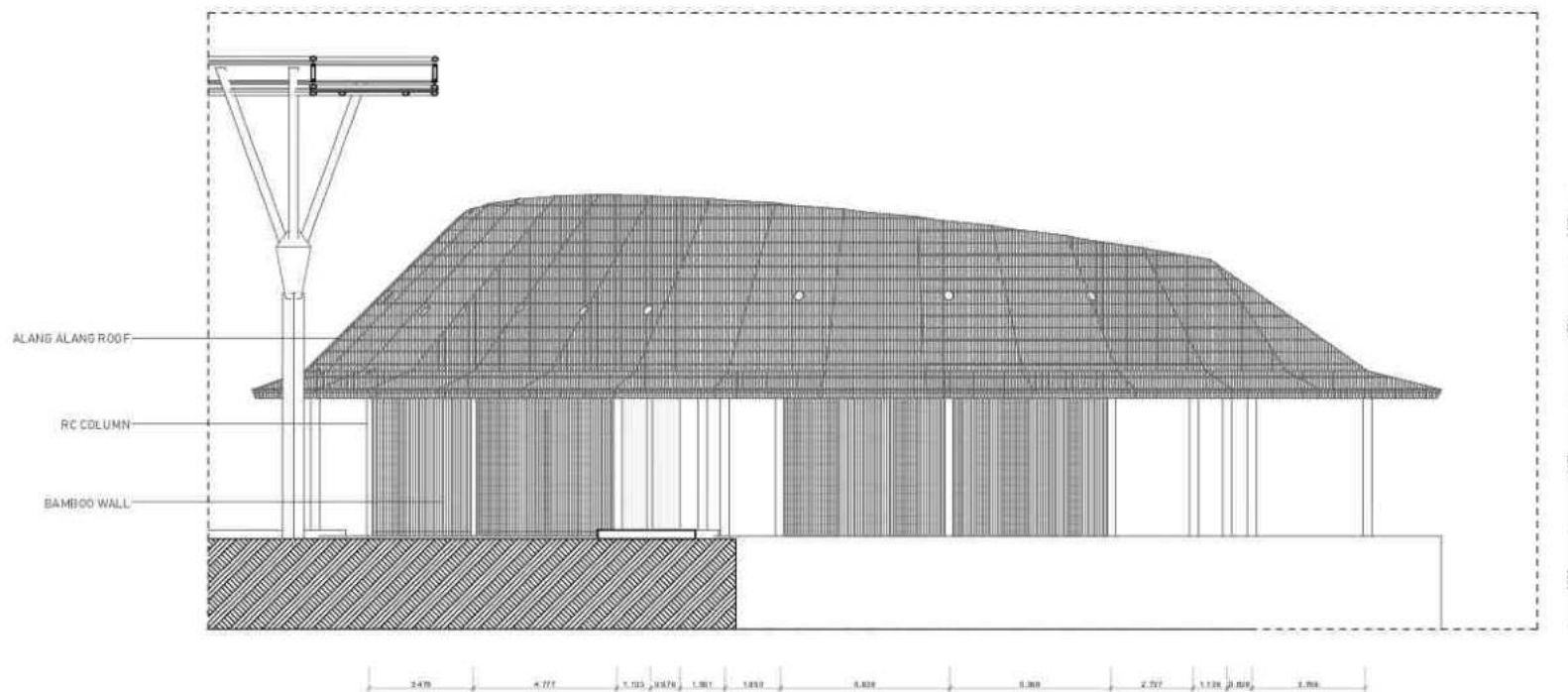
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ELEVATION

S FOODCOURT

1:250

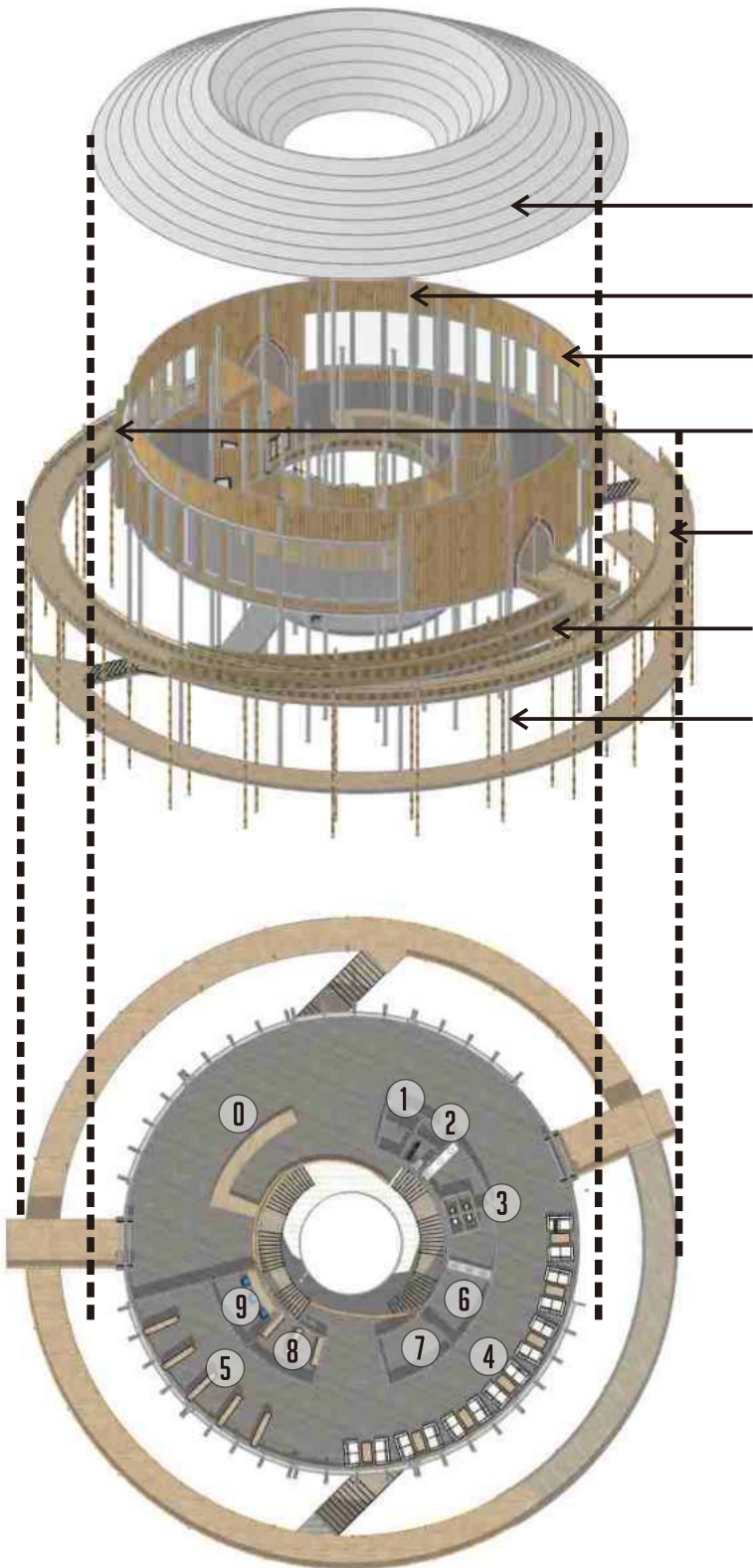


ELEVATION

E FOODCOURT

1:250

Main Building



WEED ROOF

RC COLUMN

BAMBOO WALL

BAMBOO FIN

WOOD DECK

WOVEN RAILING

BAMBOO COLUMN

0. LOBBY

1. NURSERY ROOM

2. DIFABLE TOILET

3. LAVATORY

4. INDOOR CAFÉ

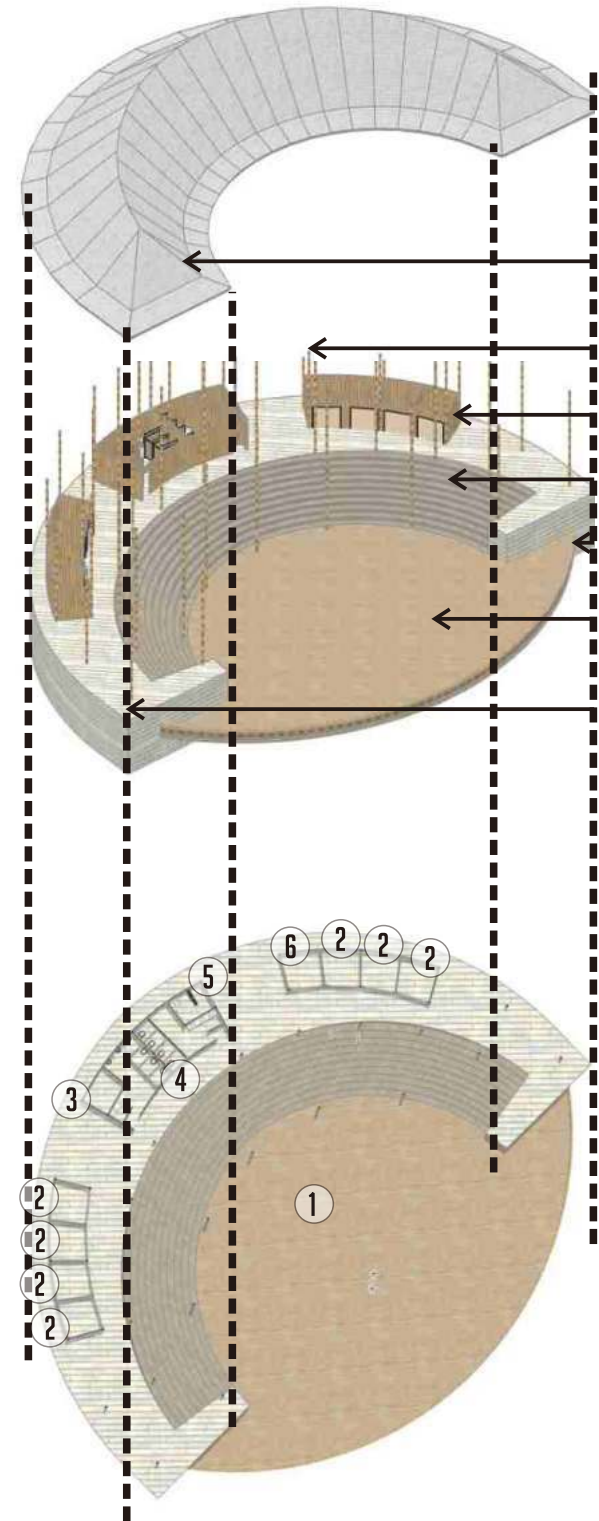
5. SOUVENIR STORE

6. ORDER ROOM

7. KITCHEN

8. BIRD FOOD WAREHOUSE

9. MANAGEMENT OFFICE





PROJECT

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DRAWING TITLE



AXONO BUILDING

SCALE

DESCRIPTION

APPROVAL

Rev

Page

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Total

45

Amphitheather

WEED ROOF

BAMBOO COLUMN

BAMBOO WALL

WOOD SEAT

WOVEN RAILING

WOOD DECK

PAVING BLOCK

1. AMPHITHEATHER

2. FOOD TENANT

3. NURSERY ROOM

4. LAVATORY

5. DIFABLE TOILET

6. MUSHALA

Rehabilitation Building

WEED ROOF

RC COLUMN

BAMBOO WALL

BAMBOO FIN

WOOD DECK

WOVEN RAILING

PAVING BLOCK

0. LOBBY

1. MANAGEMANT OFFICE

2. LAVATORY

3. ADMINISTRATION OFFICE

4. SECURITY OFFICE

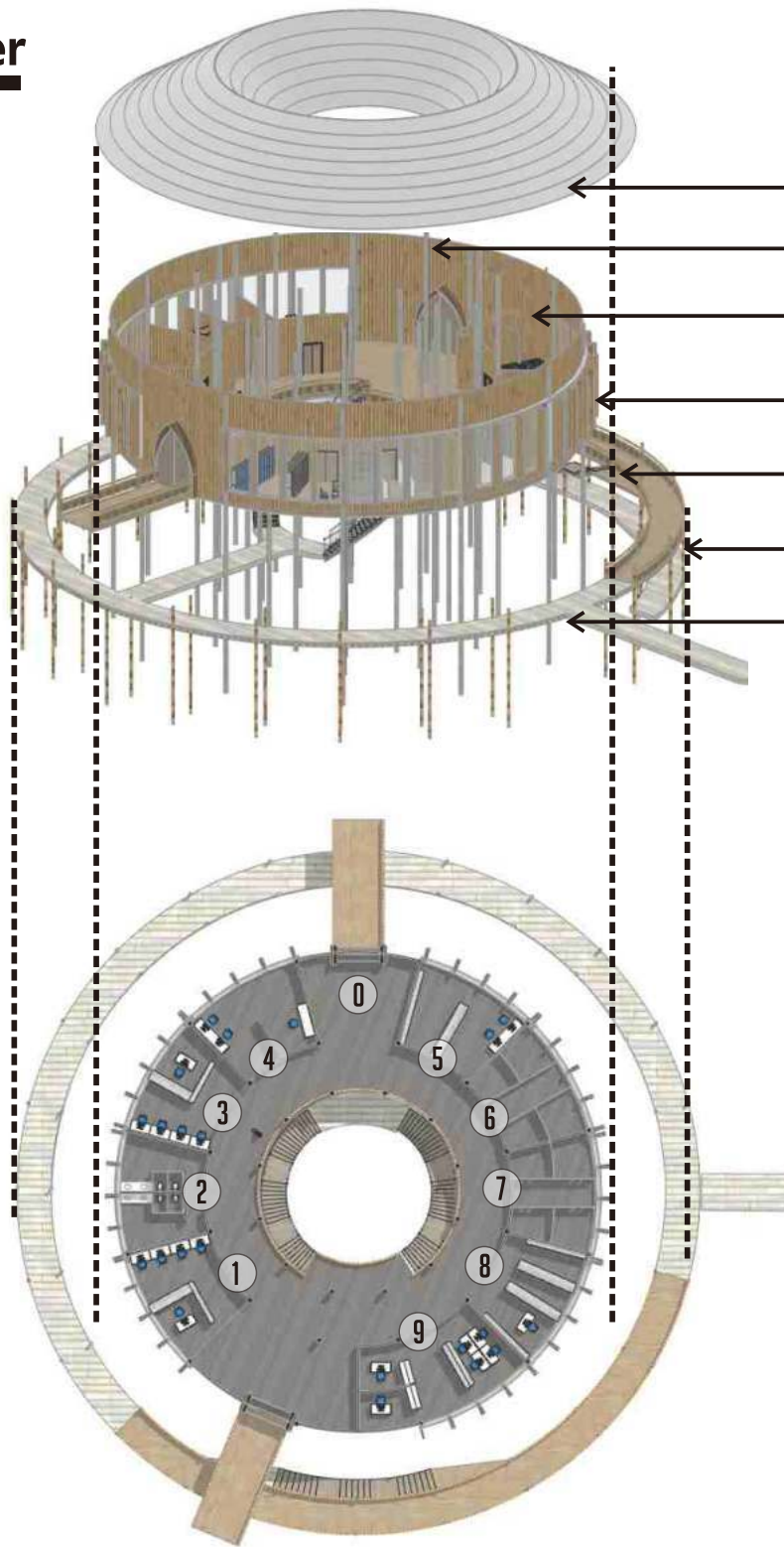
5. FOOD WAREHOUSE

6. QUARANTINE CAGE

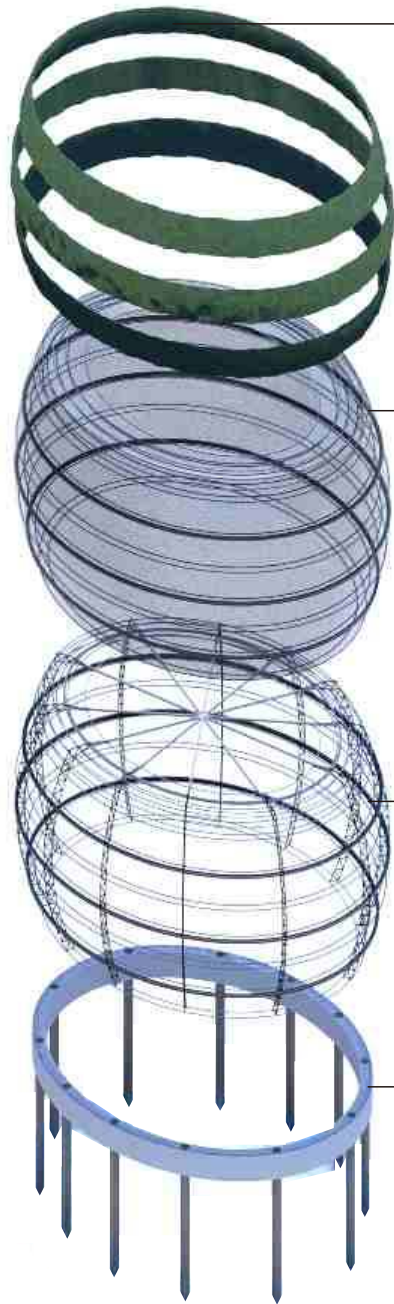
7. TRANSPORTAION CAGE

8. CLINIC & DRUG

9. PARAMEDIC3 OFFICE



Aviary Design



this Aviary design add the vertical plant feature to provide the place for roosting and food resource. the vertical plant use native orchid plant . beacuse Jatimulyo Village have an Orchid cultivation. the aplication of vertical orchid plant at this design also promote the beauty of jatimulyo orchid

this aviary need have some cover to protect the bird from ilegal huntre and predator. the material of this cover using steel wiremesh m4 .the benefit of this material easy to bend and strong enough handle high velocity wind

the form of this aviary was stretched Dome, Dome Structure aplicated and this design the material of structure was a bended Hallow Steel

the height of this aviary is 42 meter suitable of the fondation structure was bore pile deep fondation the deep of structure was 15m and using reinforce concrete



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A.12
Layout

SCALE

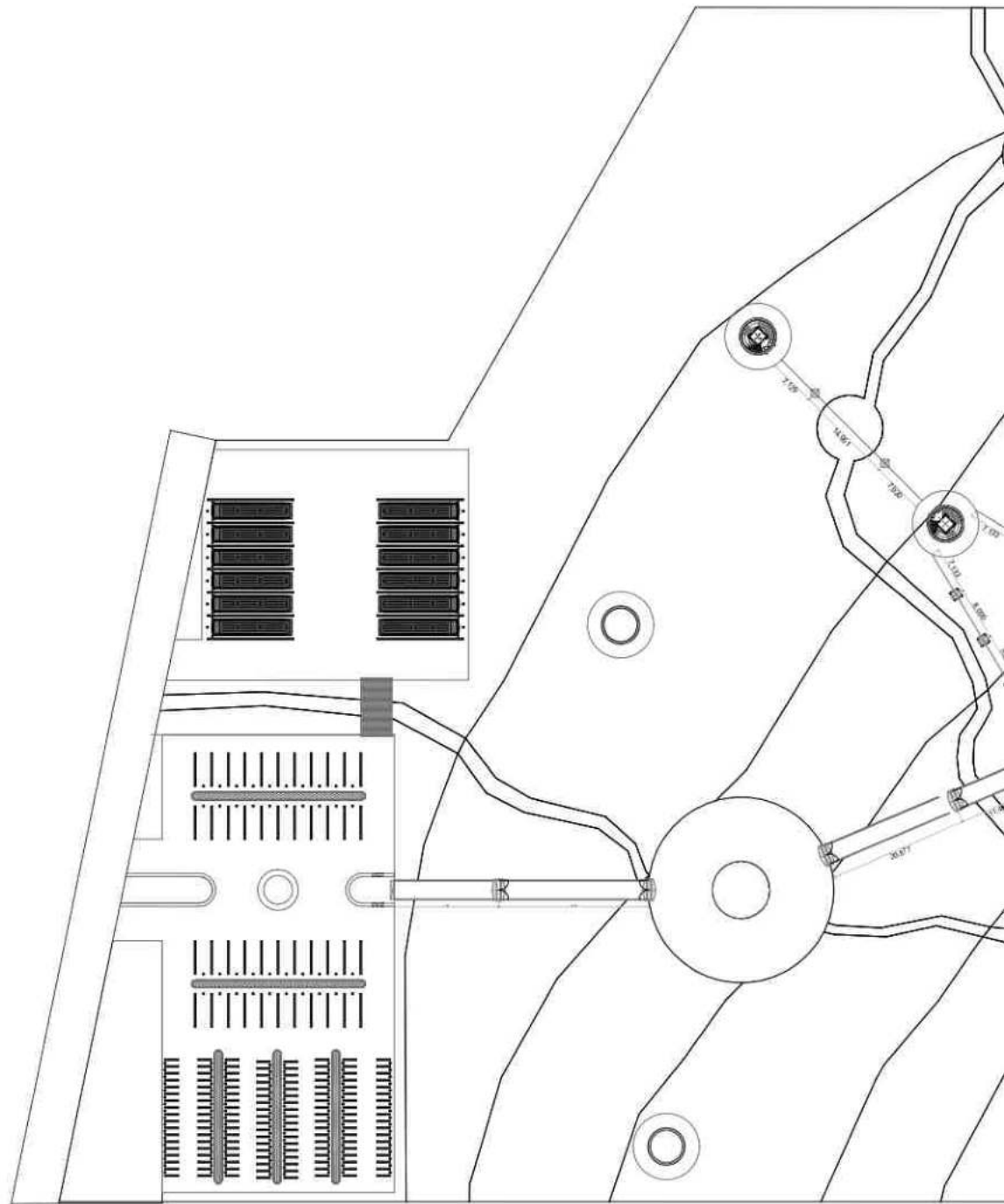
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Page	Total
26	45



PLAN

SKY BR



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DRAWING TITLE



PLAN
SKY BRIDGE 2

SCALE 1:1000

DESCRIPTION

APPROVAL

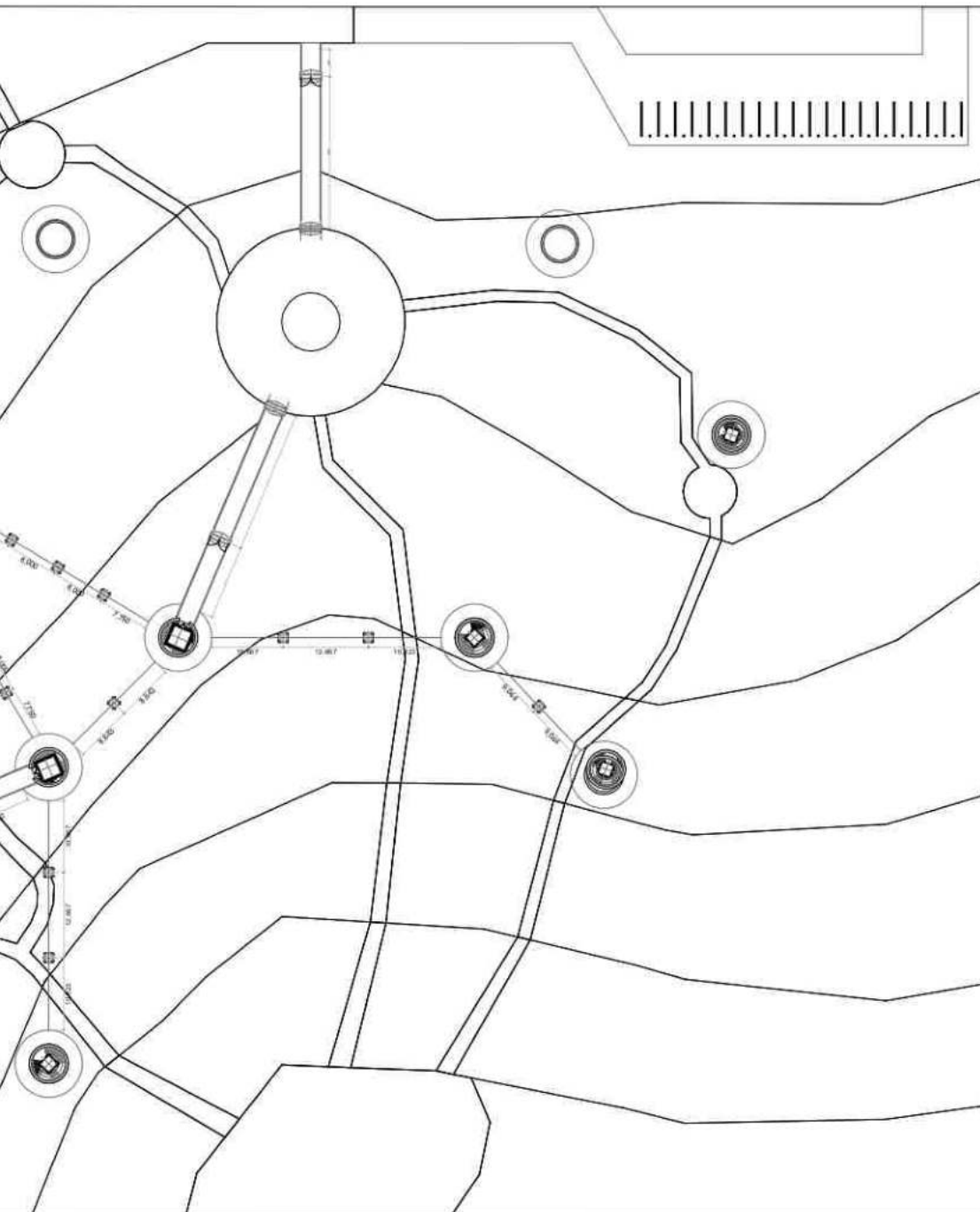
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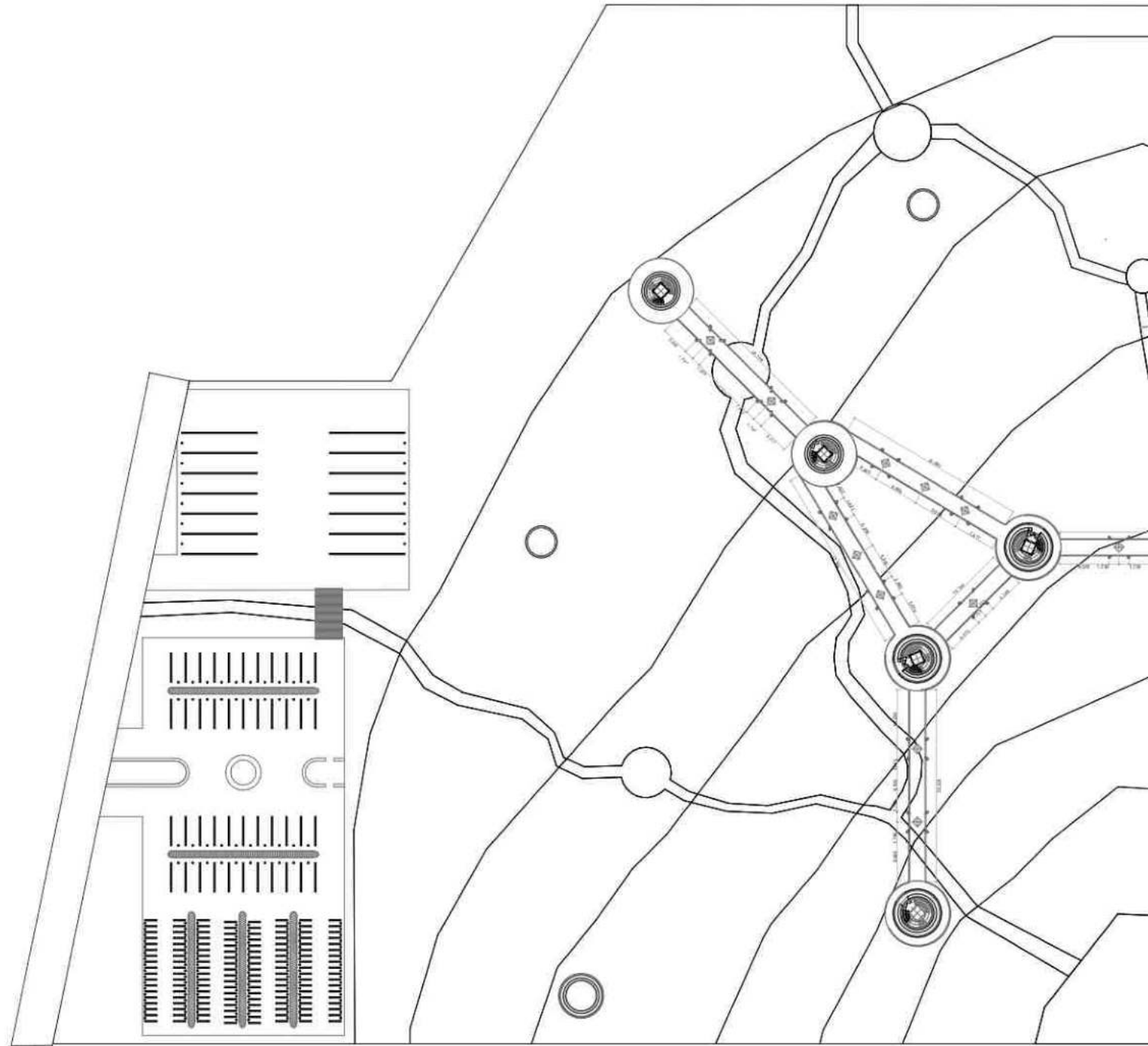
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BRIDGE 1

1:1000



PLAN

SKY BRIDGE 2



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DRAWING TITLE

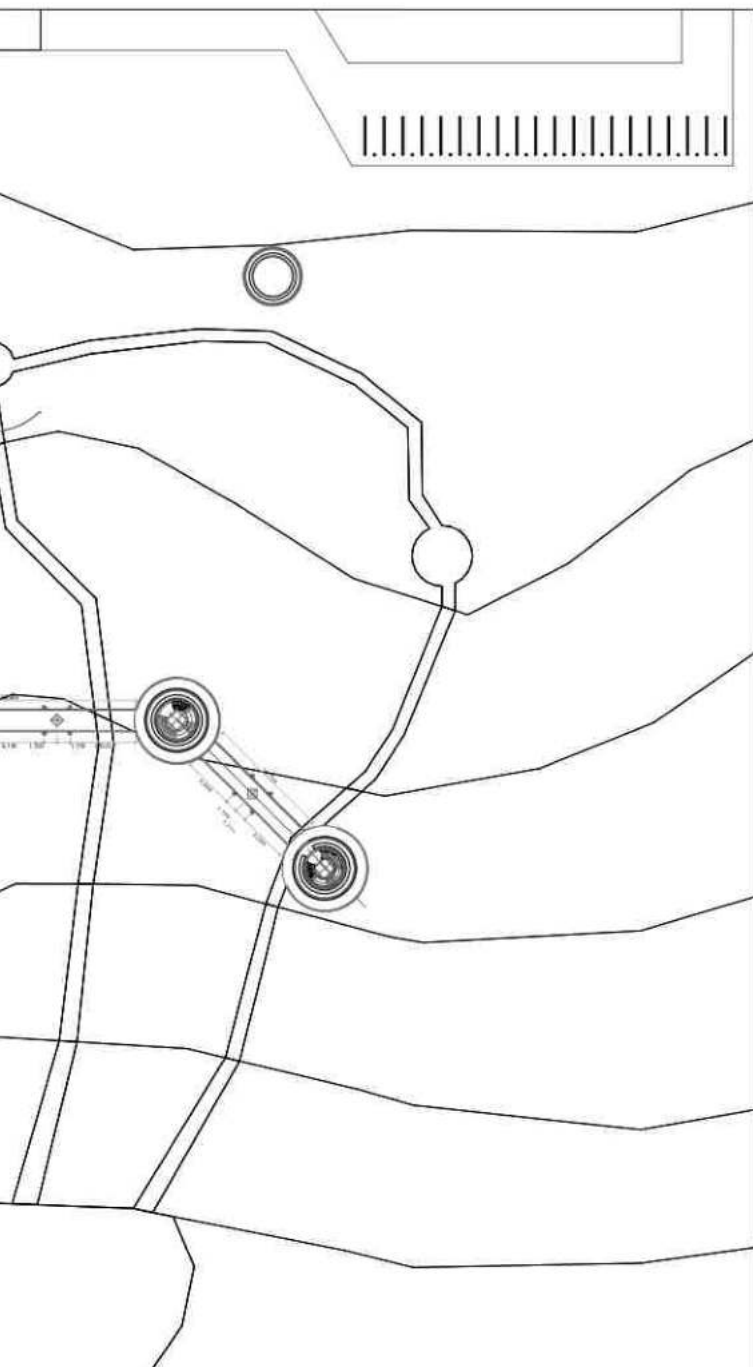


PLAN
SKY BRIDGE 3

SCALE

1:1000

DESCRIPTION



1:1000

APROVAL

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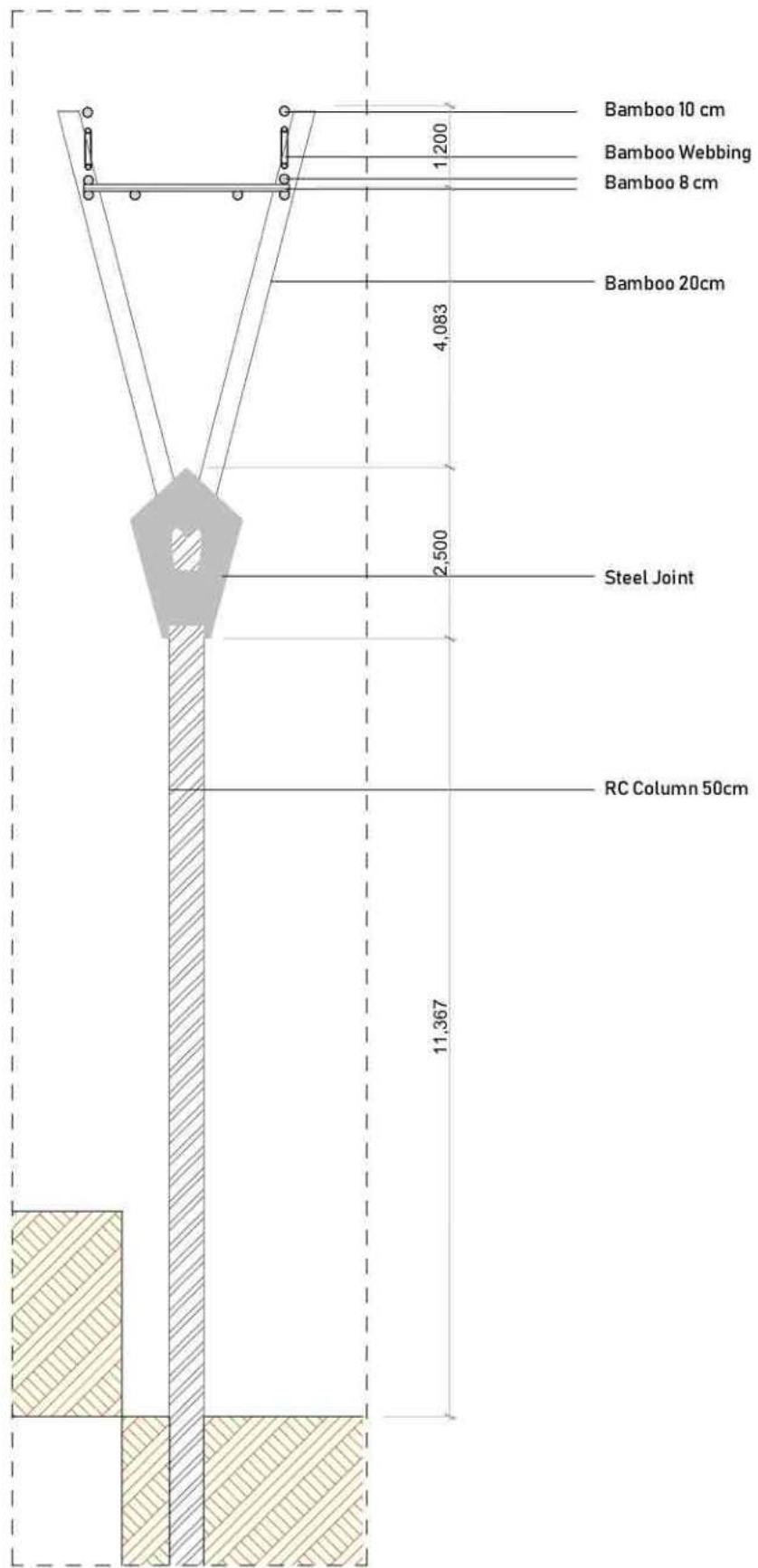
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45





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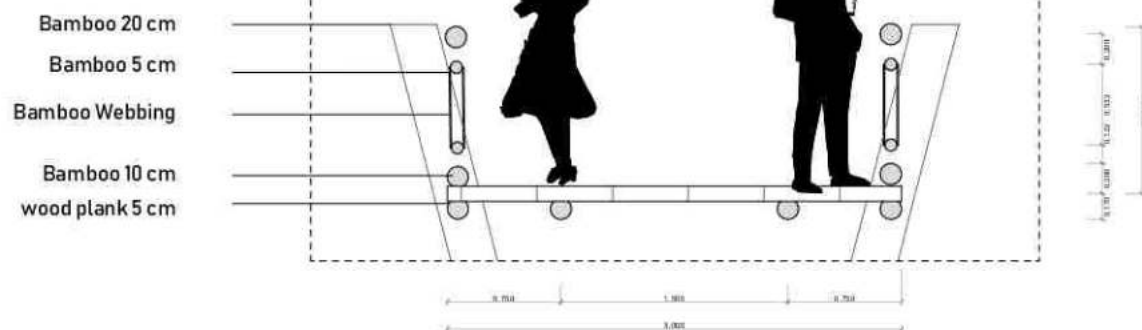
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SKY BRIDGE

SCALE 1:100, 1:50

DESCRIPTION



section

SKY BRIDGE DETAIL

1:50

APPROVAL

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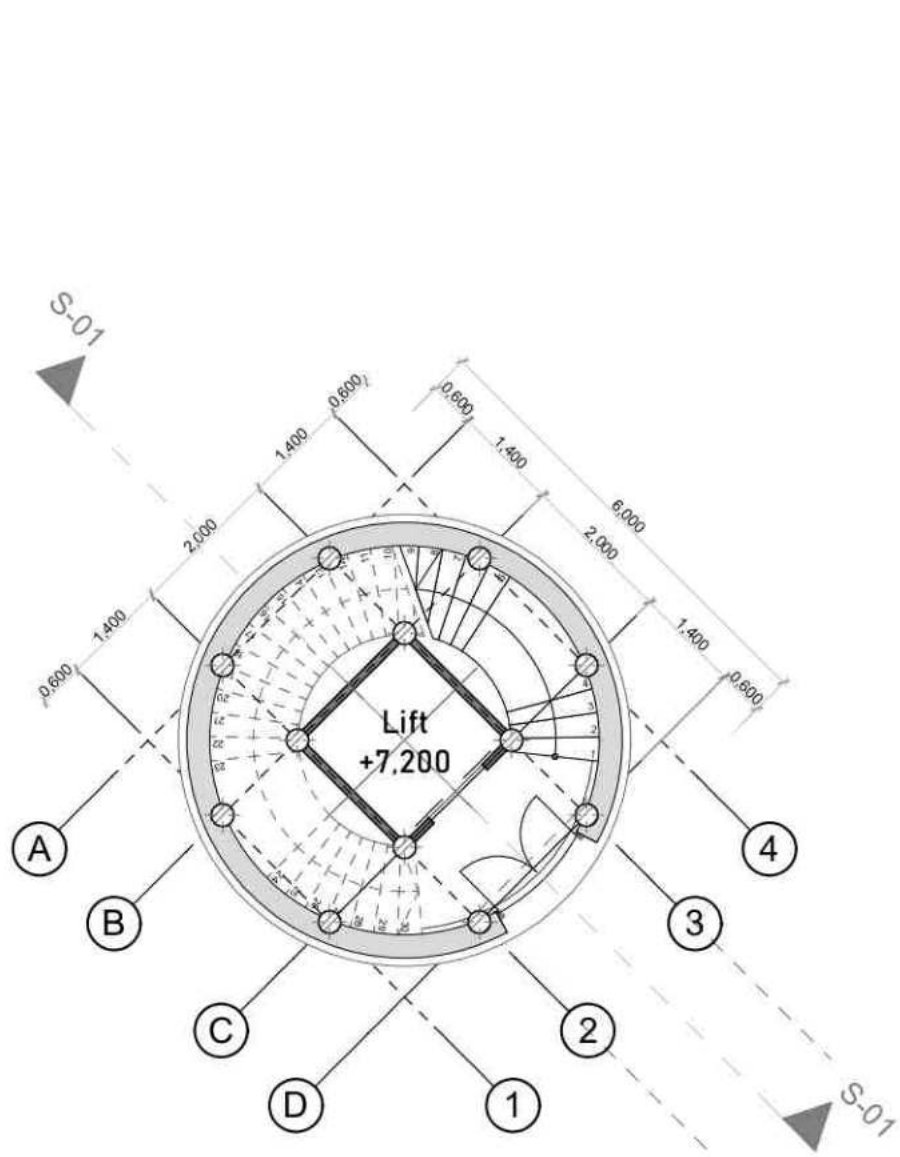
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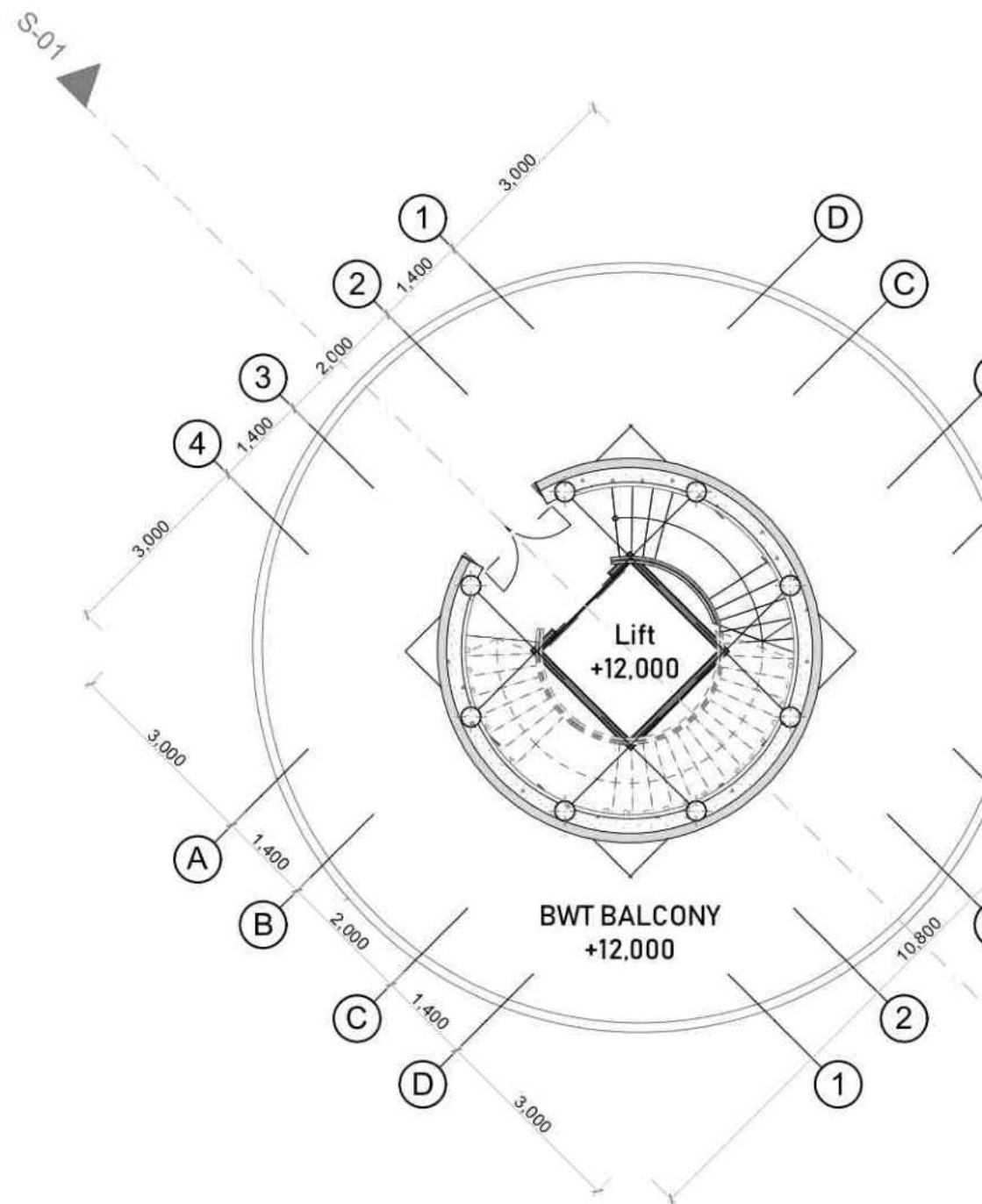
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Total

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PLAN BIRD WATCHING TOWER (1) 1:100



PLAN BWT SKY



PROJECT

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DRAWING TITLE



PLAN
BIRD WATCHING TOWER

SCALE

1:100

DESCRIPTION

APPROVAL

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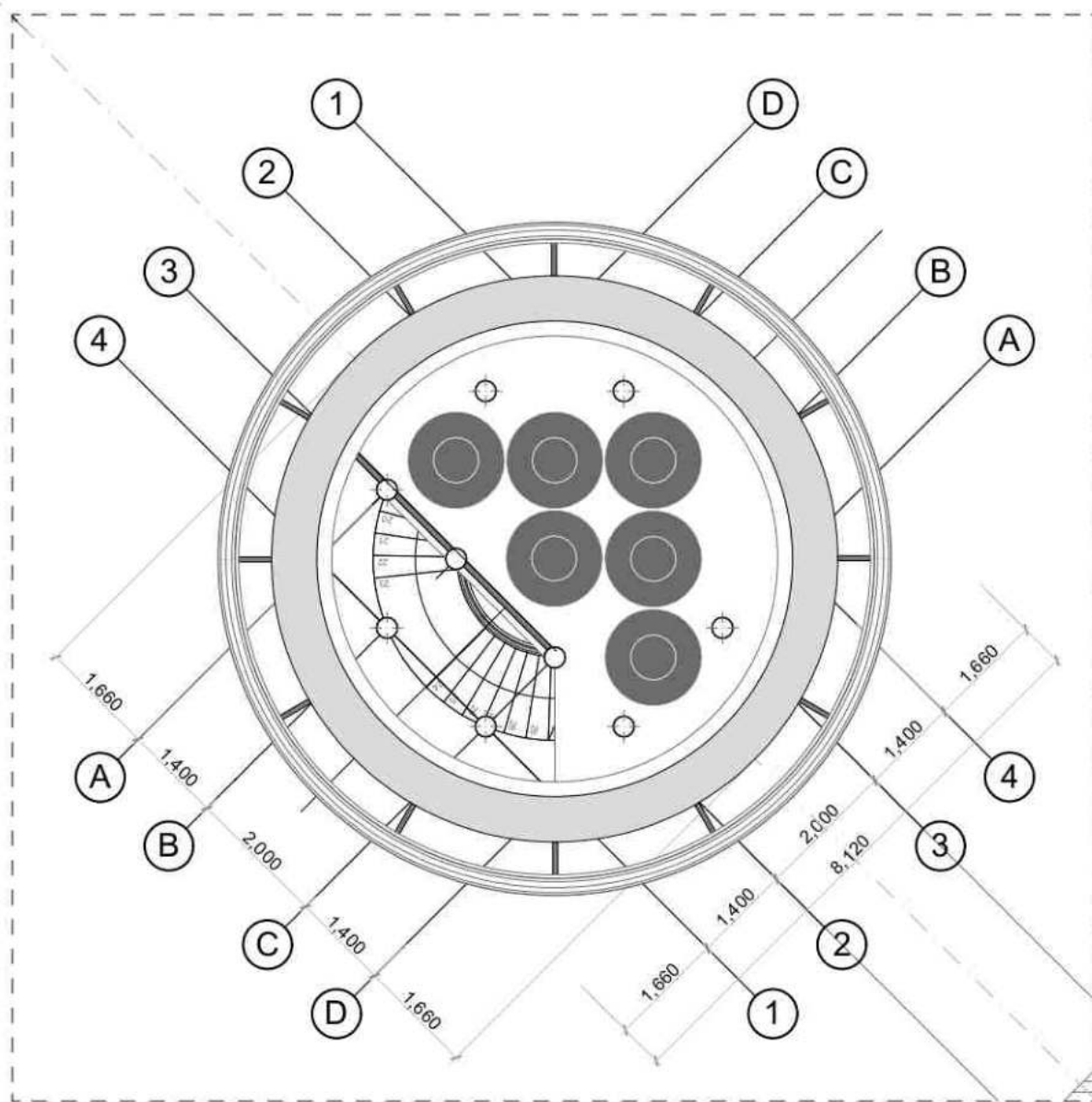
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S-01

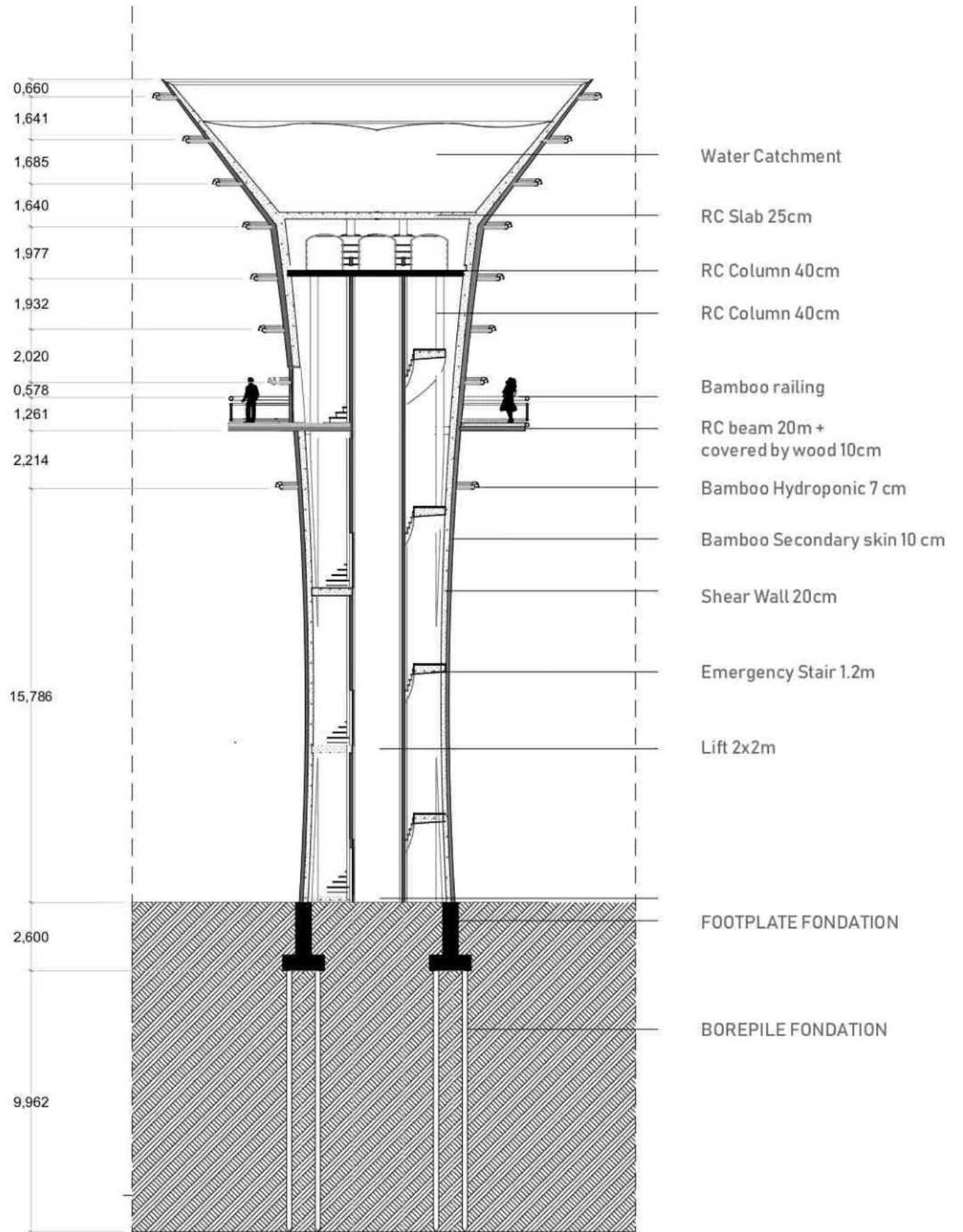


1:100

PLAN

BWT TOP

1:100



BIRD WATCHING TOWER



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DRAWING TITLE



SECTION
BIRD WATCHING TOWER

SCALE

1:200

DESCRIPTION

APROVAL

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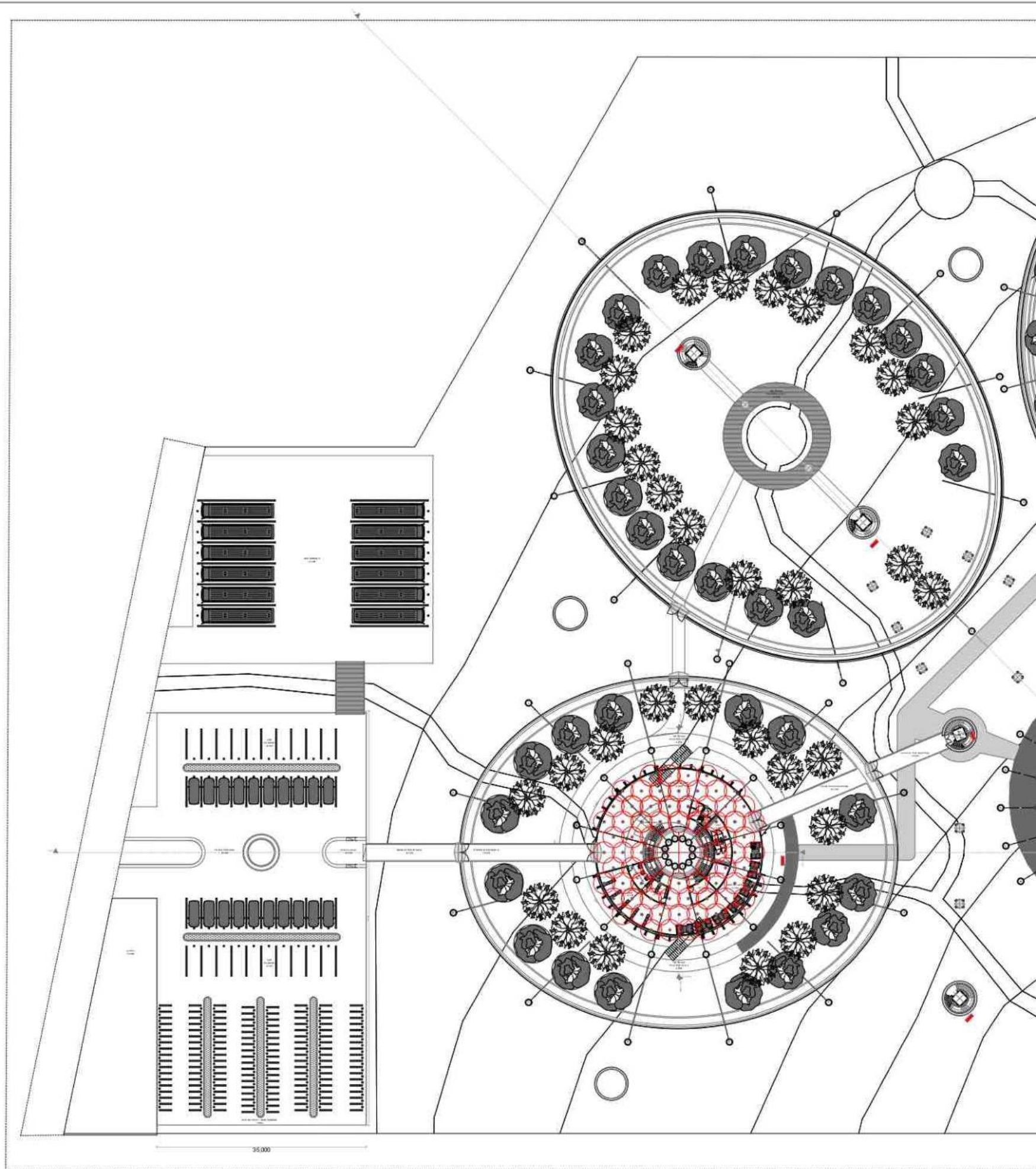
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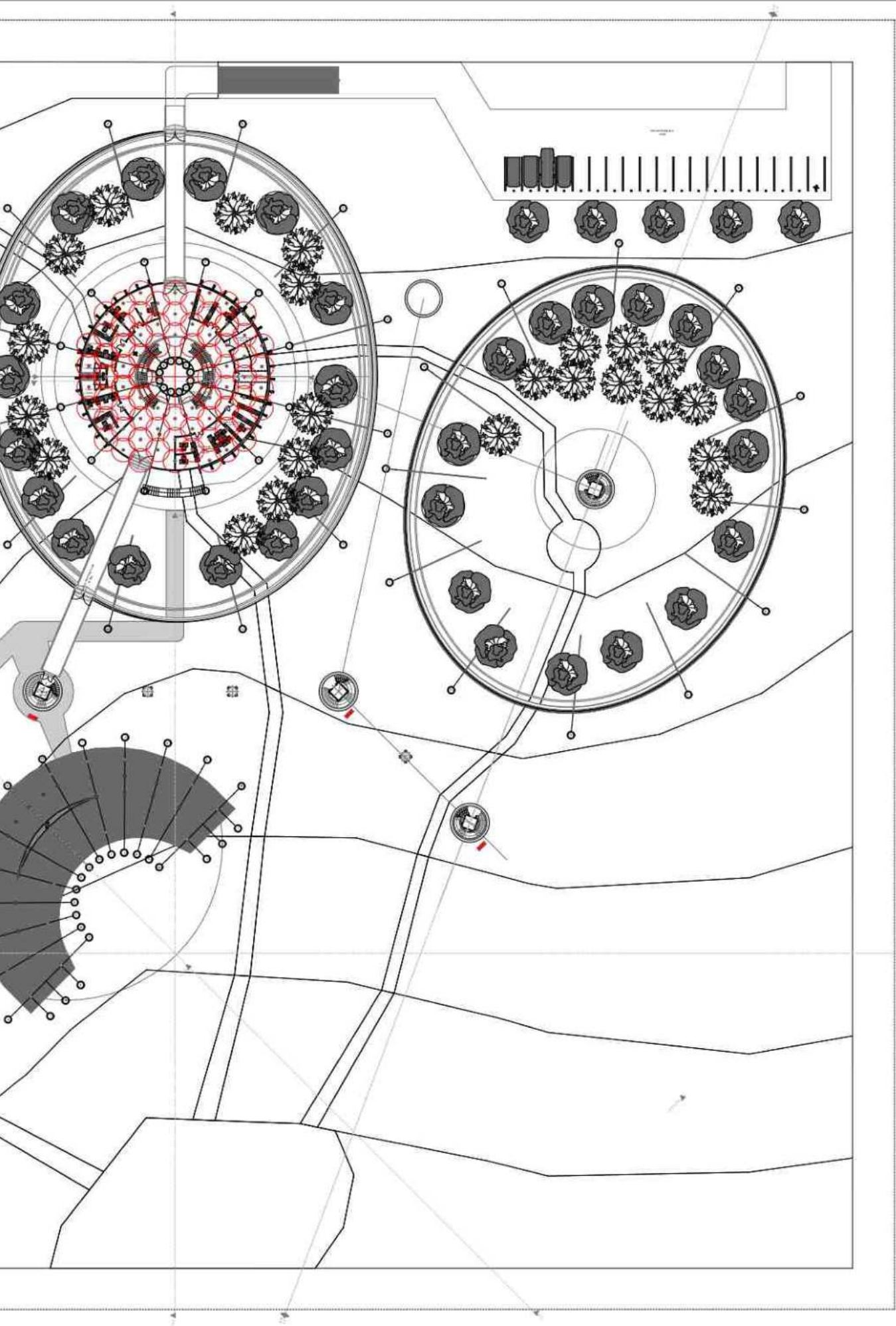
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DRAWING TITLE



FIRE PROTECTION PLAN

SCALE

1:750

DESCRIPTION



**SPRINKLE
RAD. 2M**



HYDRANT

APPROVAL

Rev	

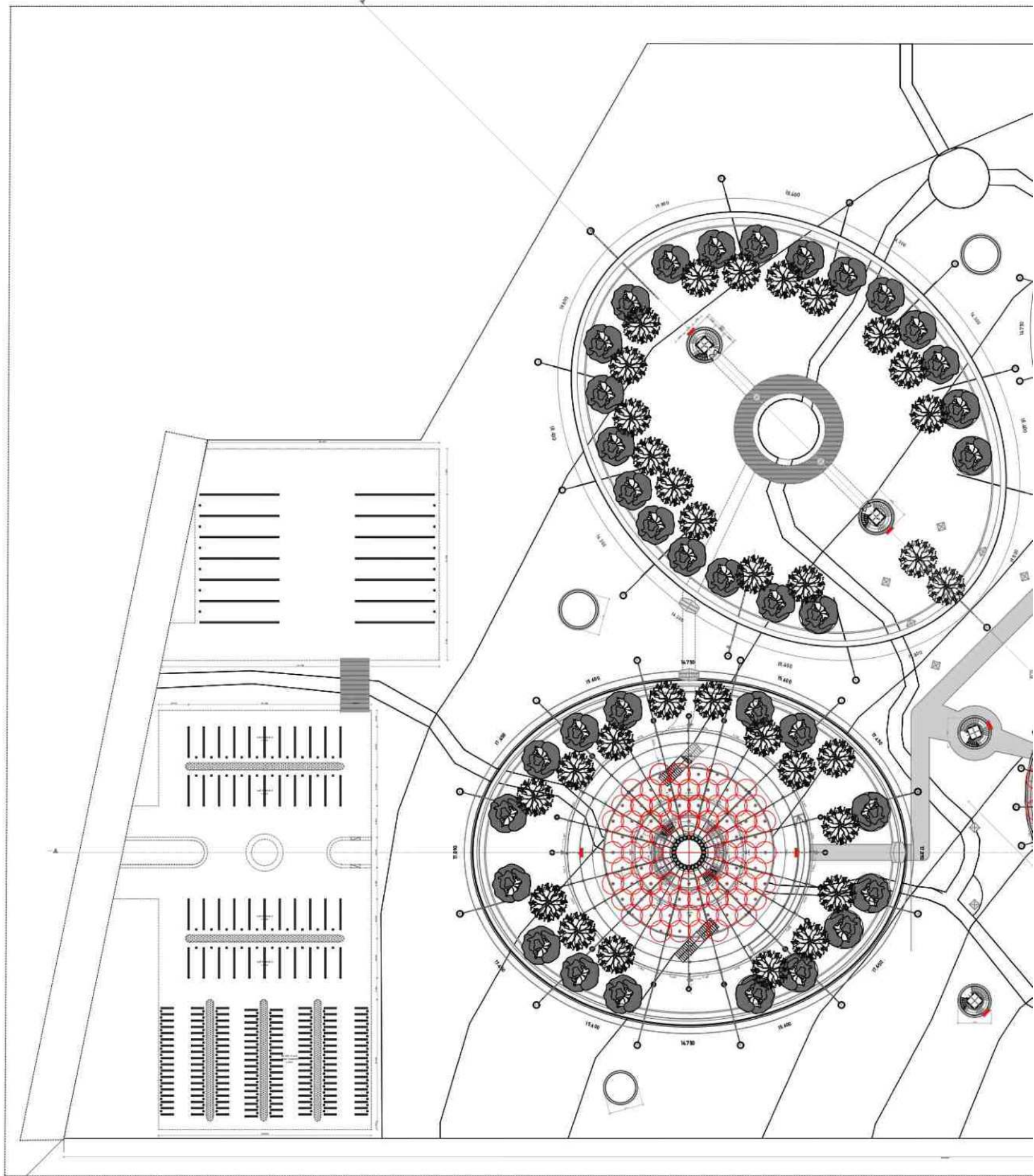
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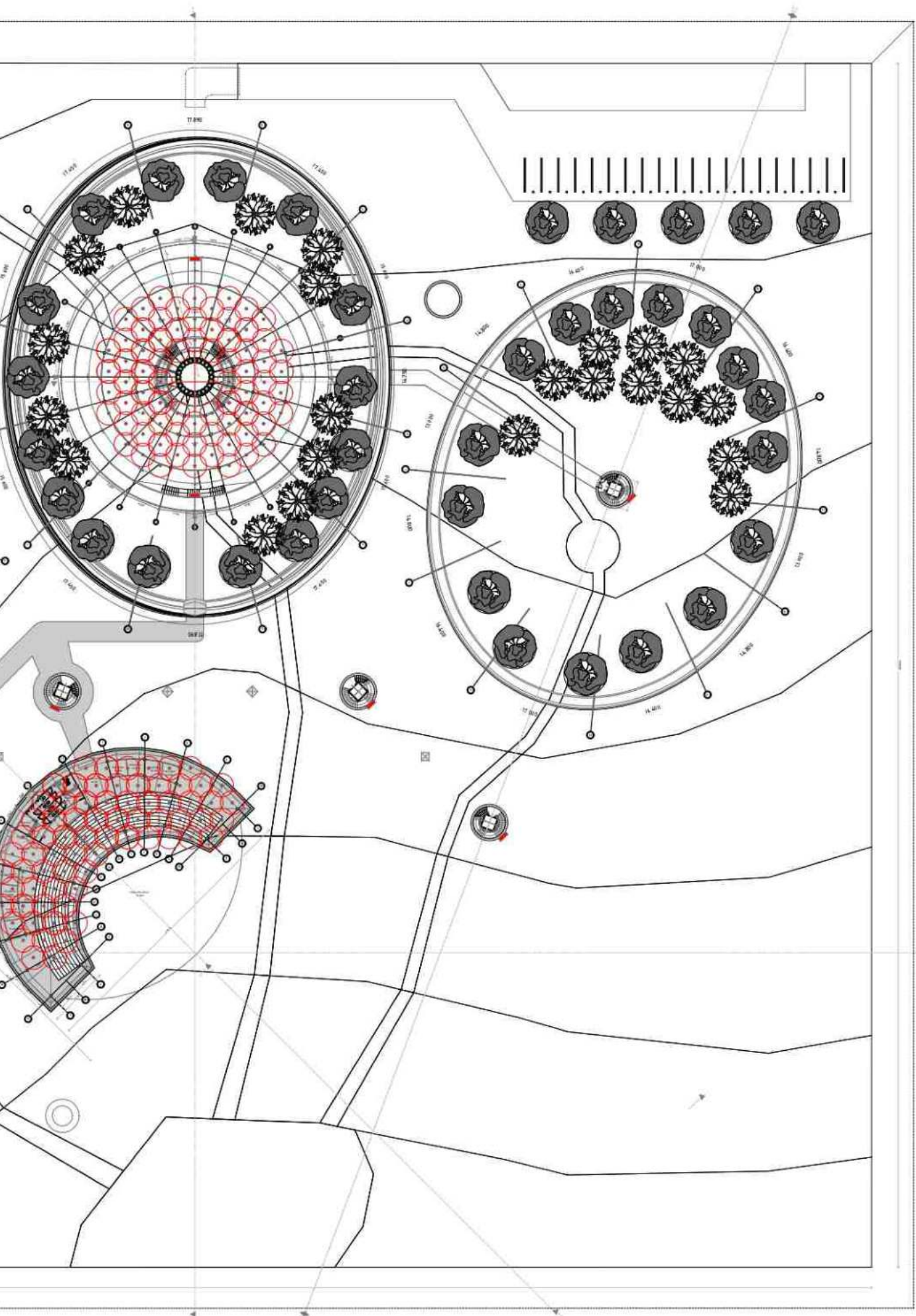
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1:750





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DRAWING TITLE


 FIRE PROTECTION PLAN 2

SCALE 1:750

DESCRIPTION

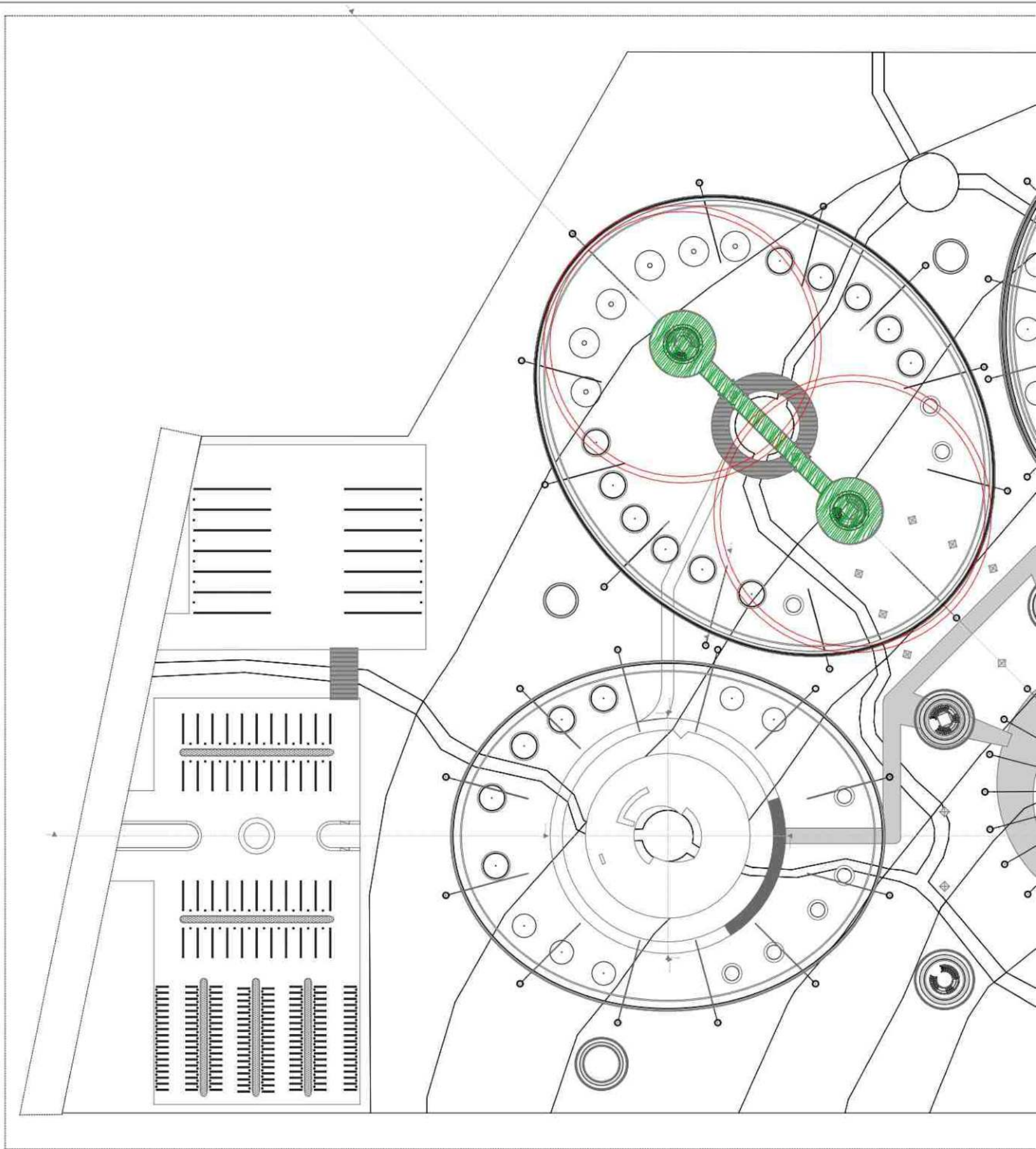
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-  **HYDRANT**

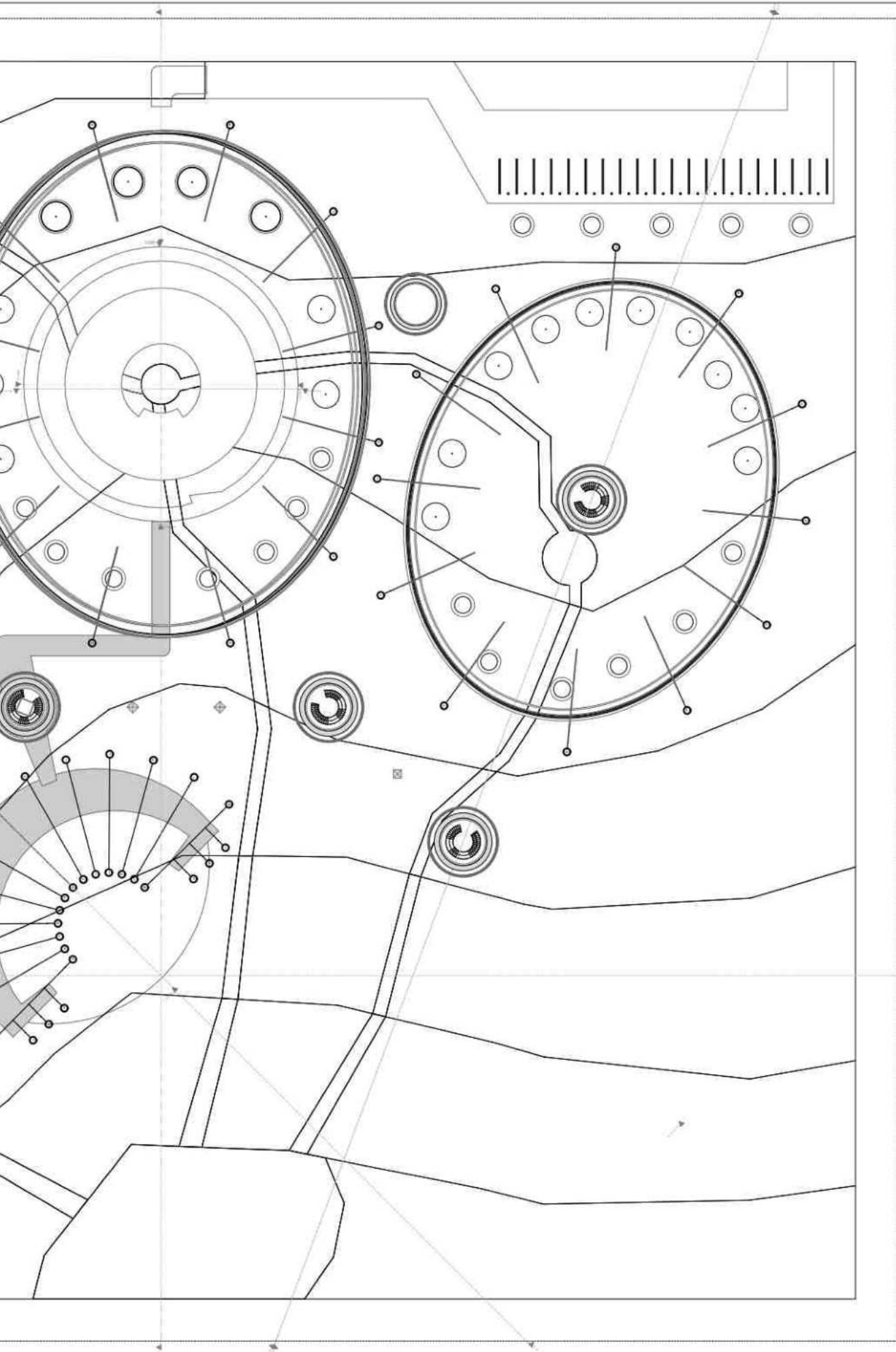
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DRAWING TITLE



SP3
EVACUATION ROUTE

SCALE 1:750

DESCRIPTION



EMERGENCY STAIR
RAD. 25M



EVACUATION ROUTE



ASSEMBLY PONT

ROUTE



APPROVAL

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△			
△			

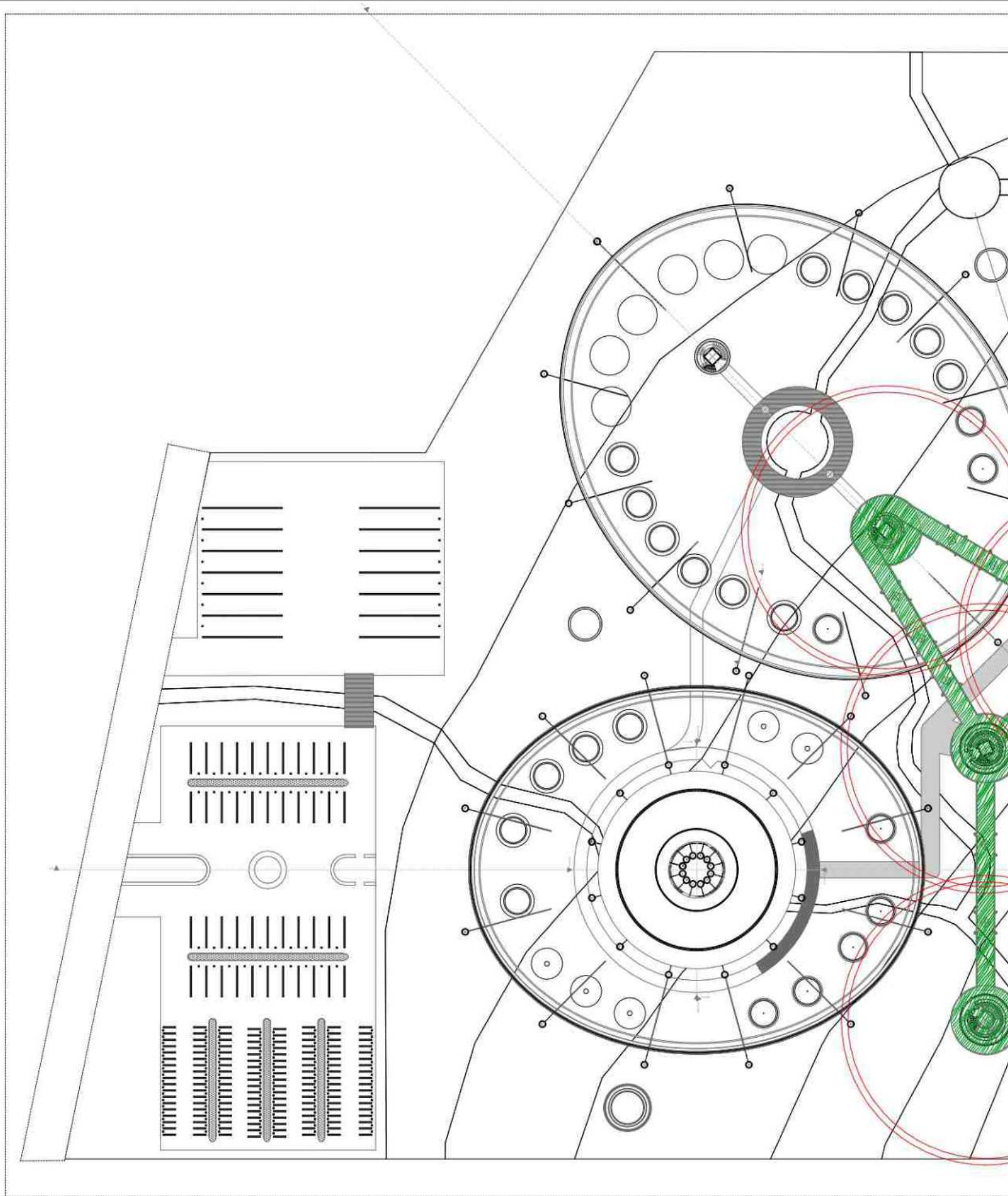
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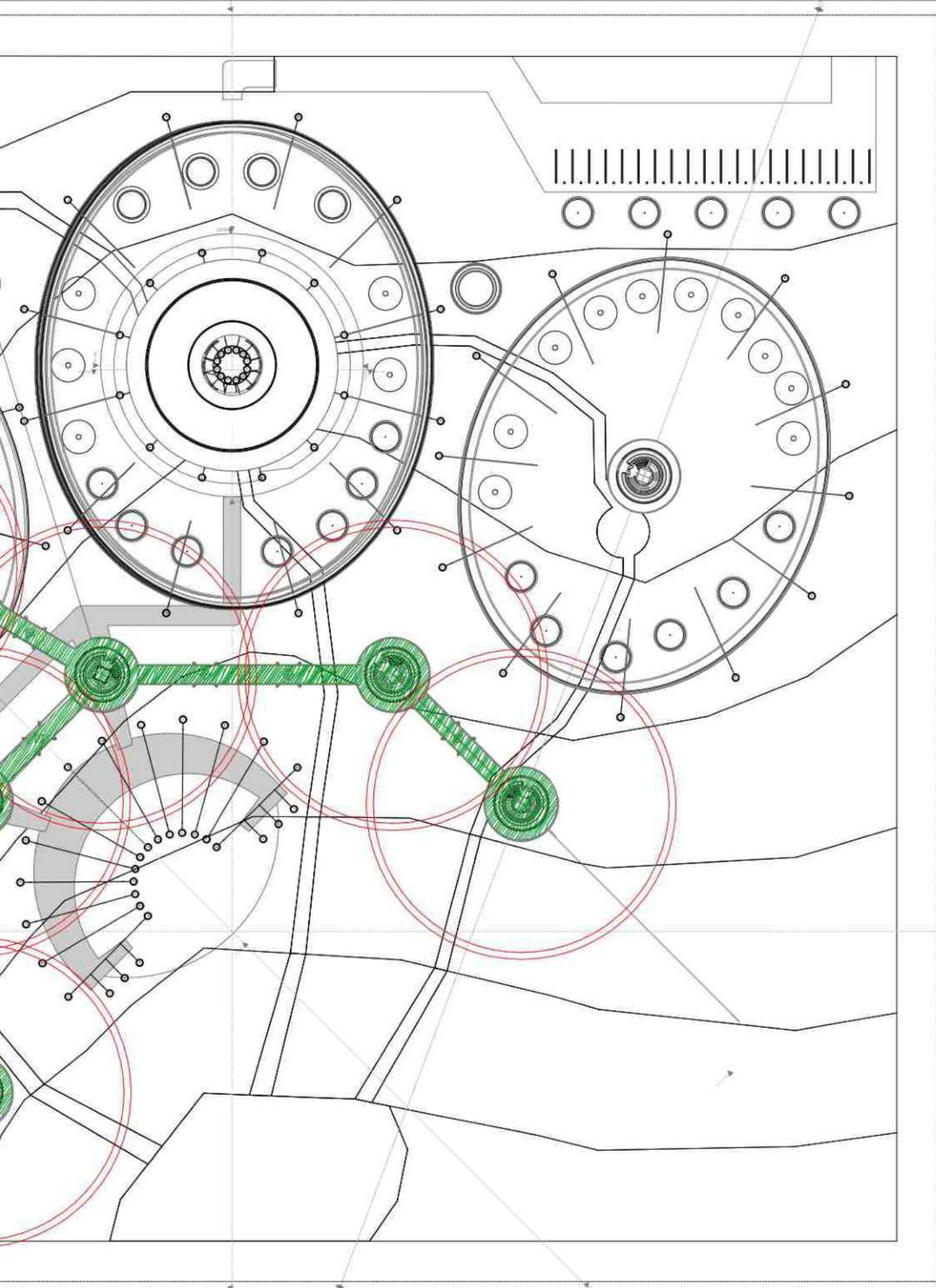
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1:750



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SP2
EVACUATION ROUTE

SCALE 1:750

DESCRIPTION



EMERGENCY STAIR
RAD. 25M

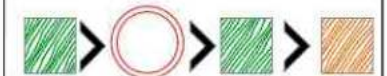


EVACUATION ROUTE



ASSEMBLY PONT

ROUTE



APPROVAL

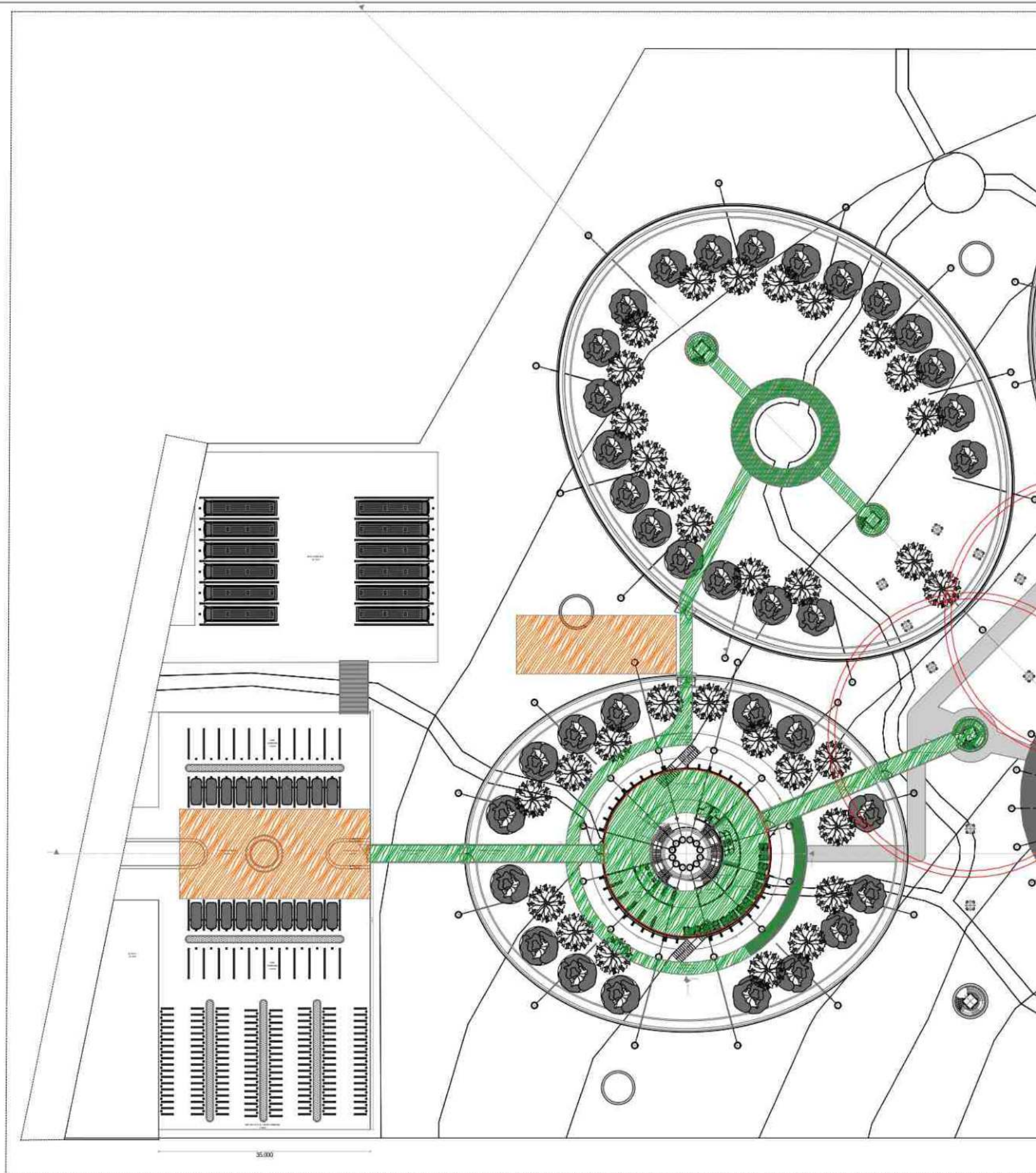
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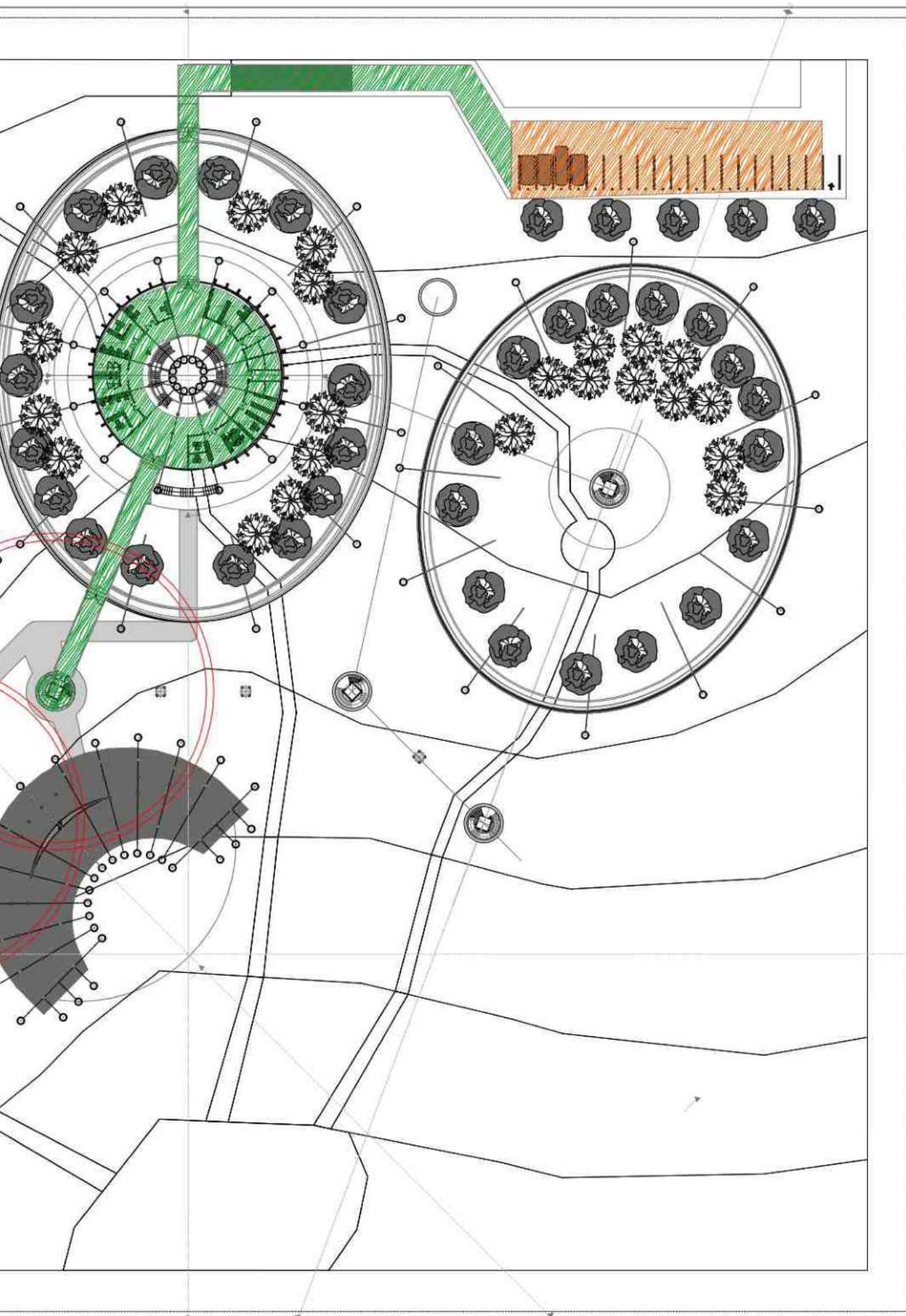
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1:750

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DRAWING TITLE



SP1
EVACUATION ROUTE

SCALE

1:750

DESCRIPTION



EMERGENCY STAIR
RAD. 25M

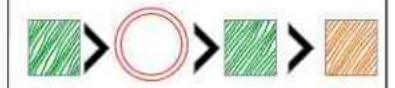


EVACUATION ROUTE



ASSEMBLY PONT

ROUTE



APPROVAL

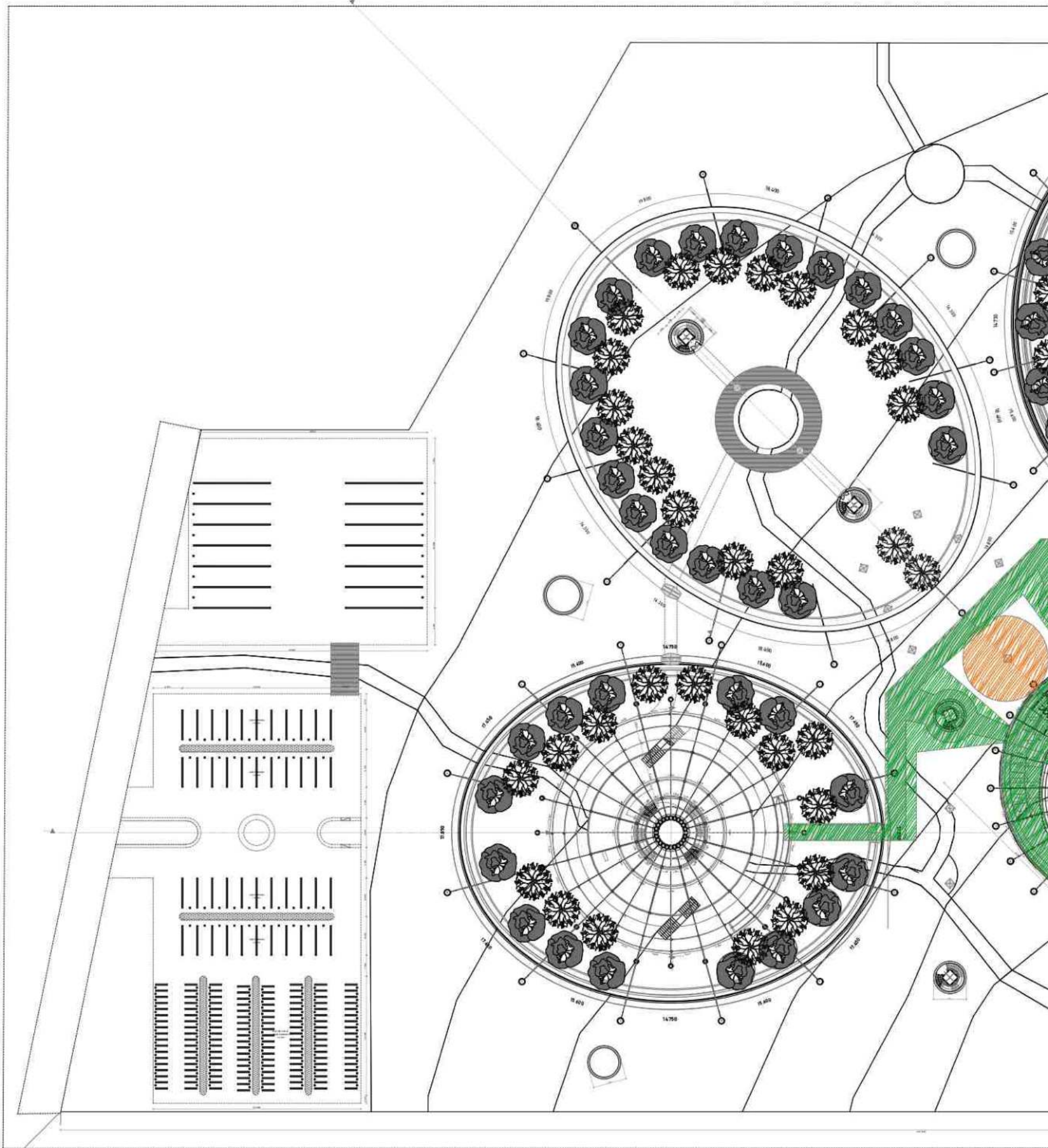
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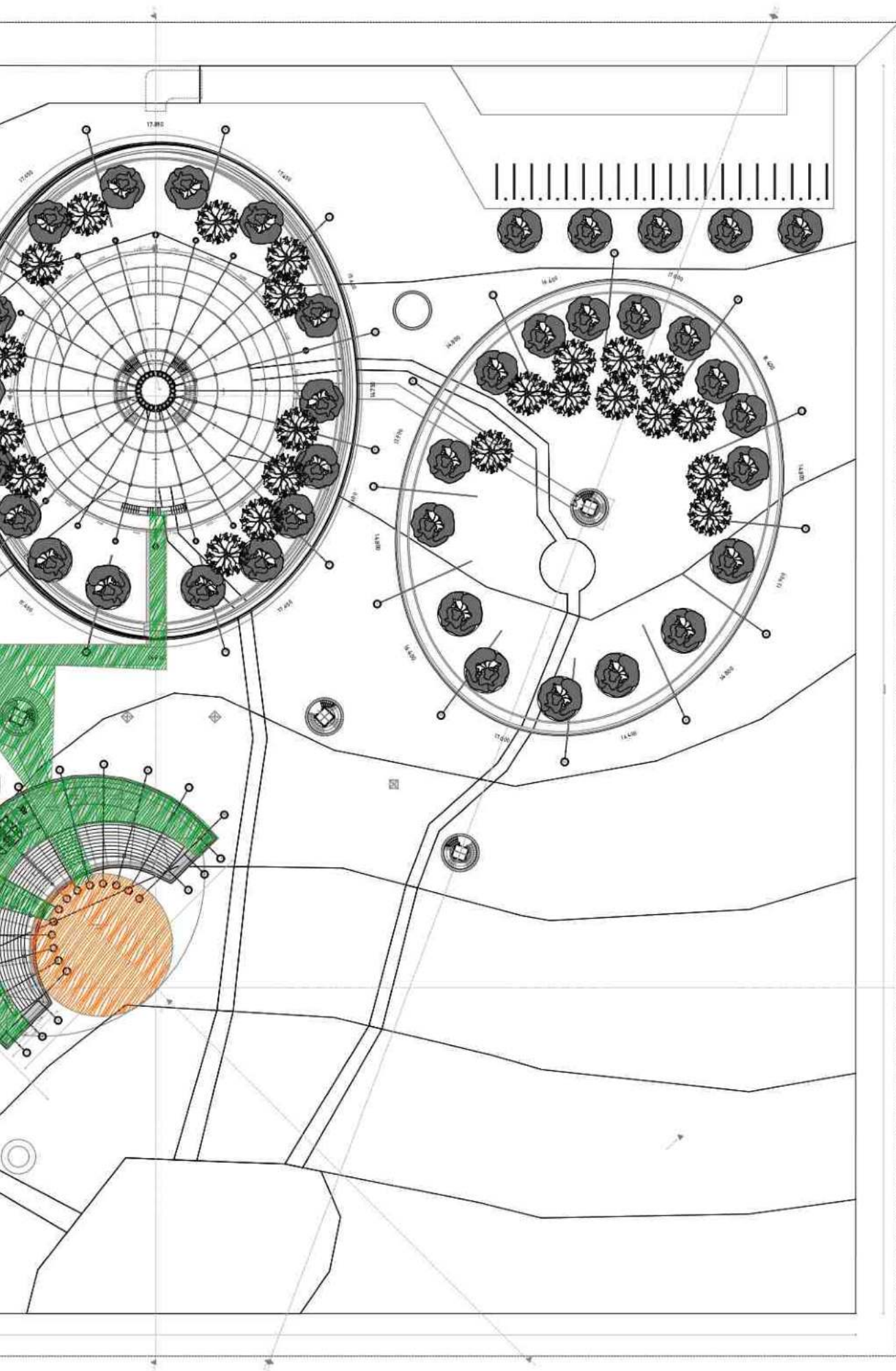
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17512169

DRAWING TITLE

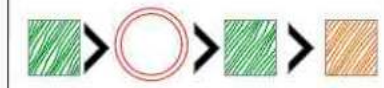

 SP
 EVACUATION ROUTE

SCALE 1:750

DESCRIPTION

- 
 EMERGENCY STAIR
 RAD. 25M
- 
 EVACUATION ROUTE
- 
 ASSEMBLY PONT

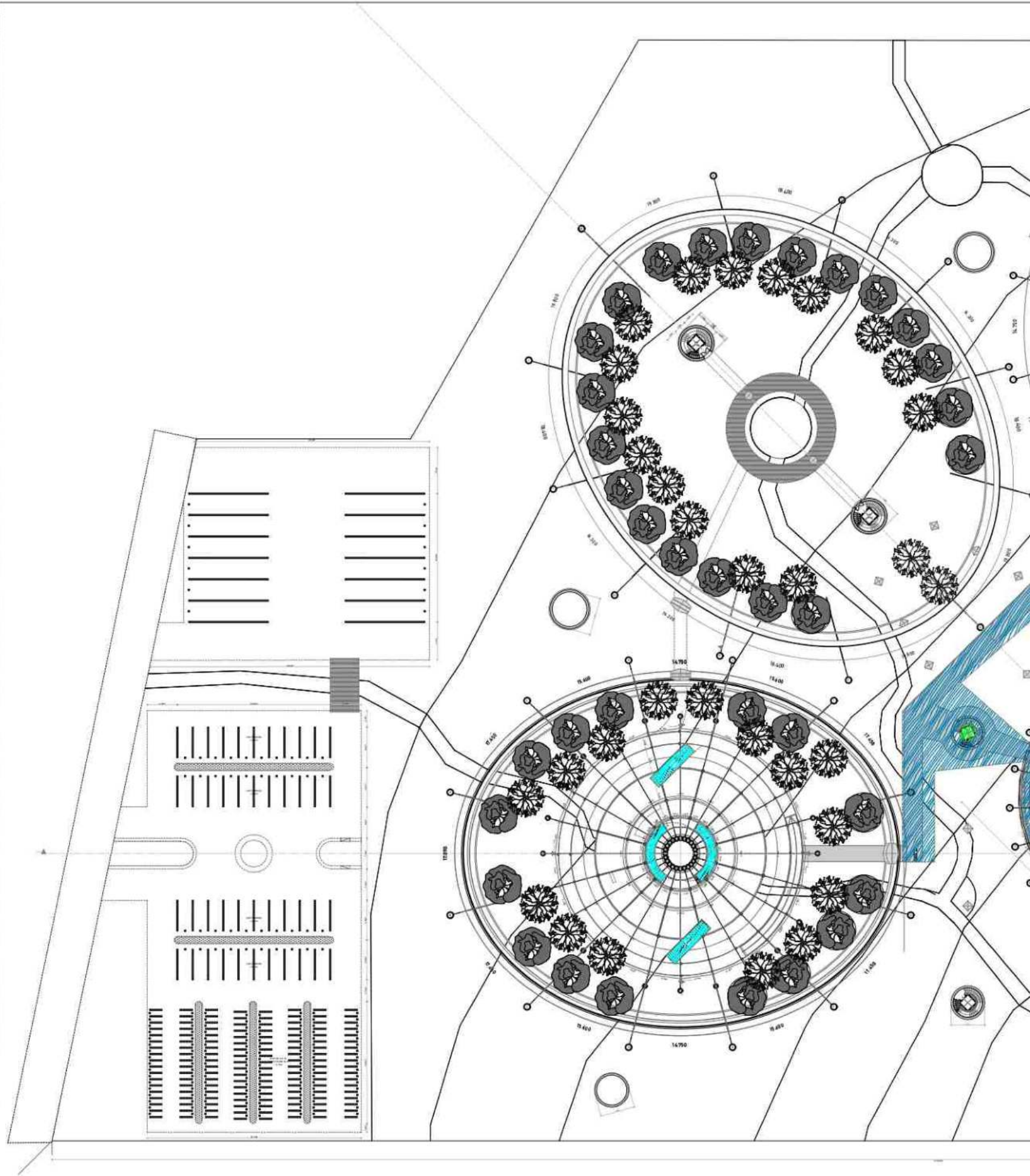
ROUTE



APPROVAL

Rev

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PLAN

SITEPLAN (1)



PROJECT

Jatimulyo Bird Conservation

in Kulonprogo with Environmental Behaviour Design Approach

SUPERVISOR

Dr. Yulianto P. Prihatmaji, IPM. IAI.

EXAMINER

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TRANSPORTATION PLAN

SCALE

1:750

DESCRIPTION



DIFABLE ROUTE



RAMP



STAIR



LIFT

APPROVAL

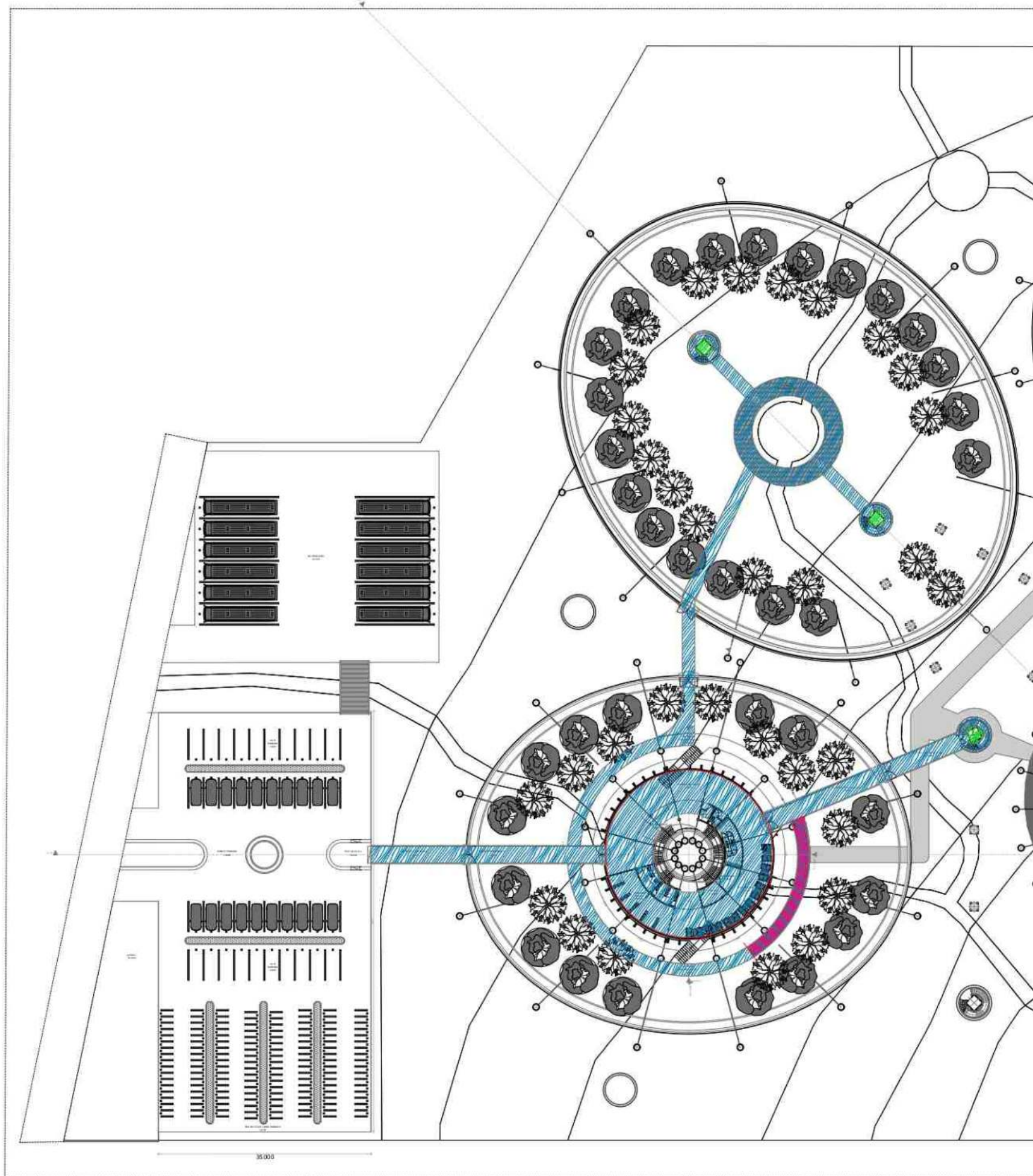
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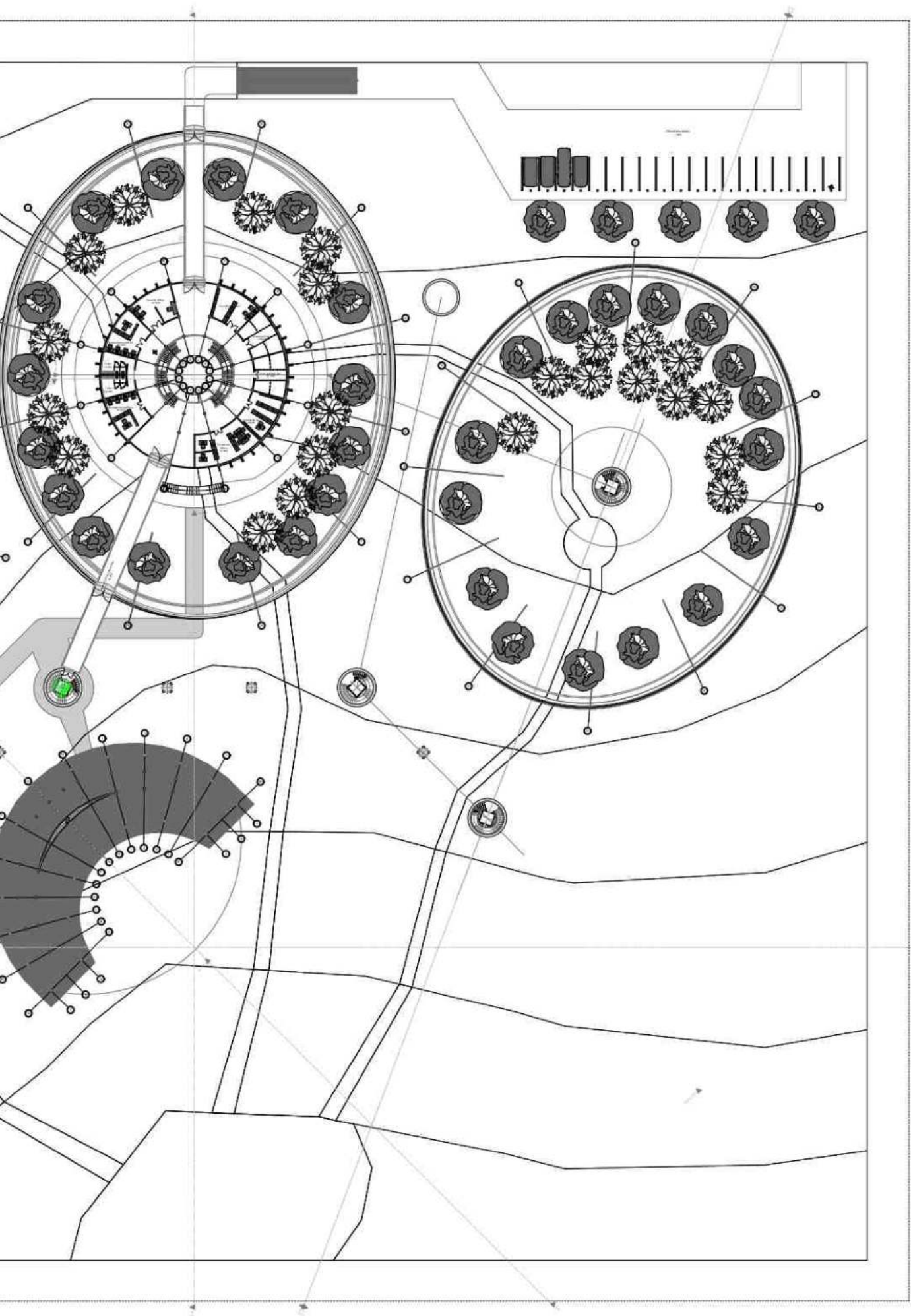
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 TRANSPORTATION PLAN 1

SCALE 1:750

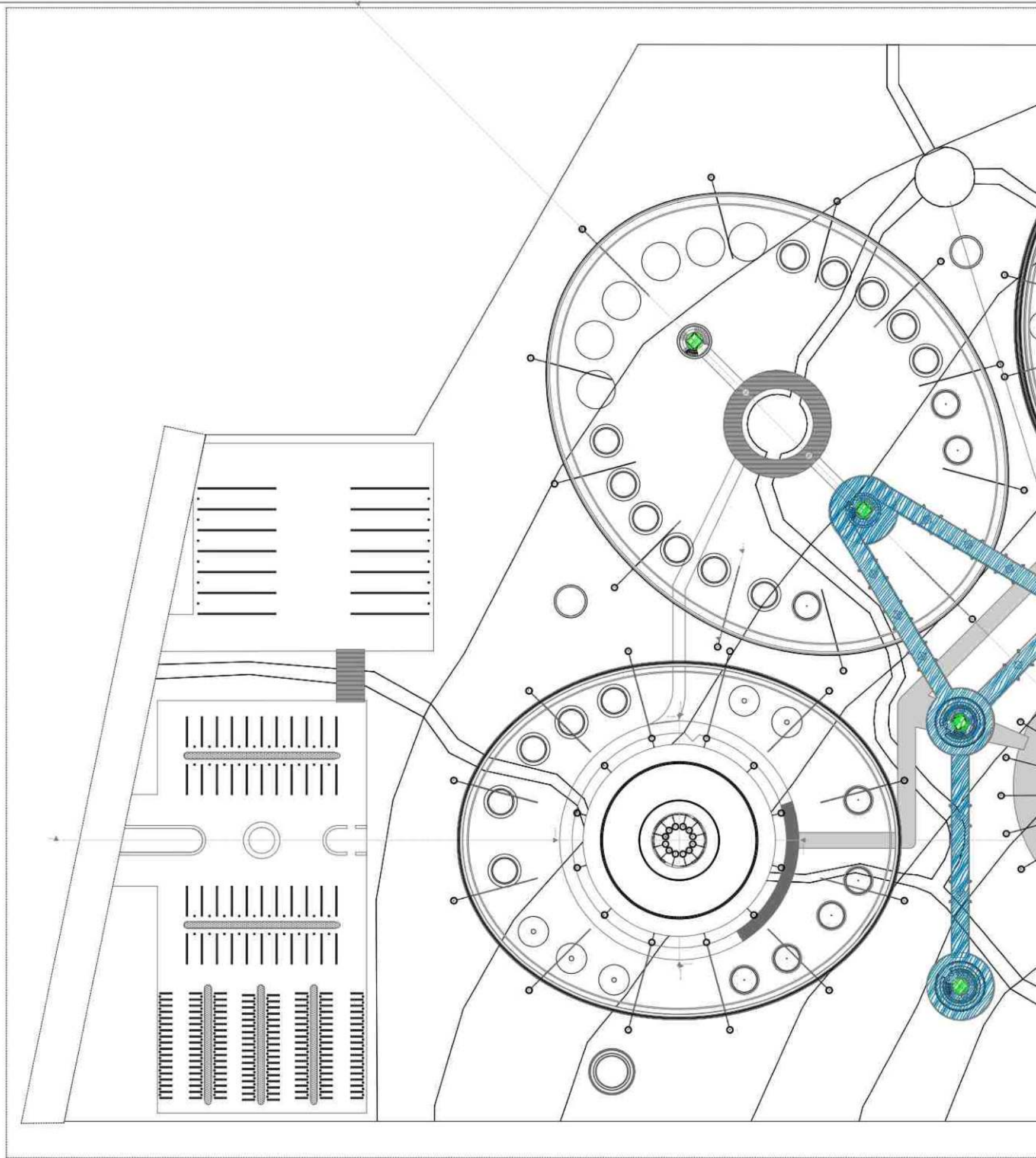
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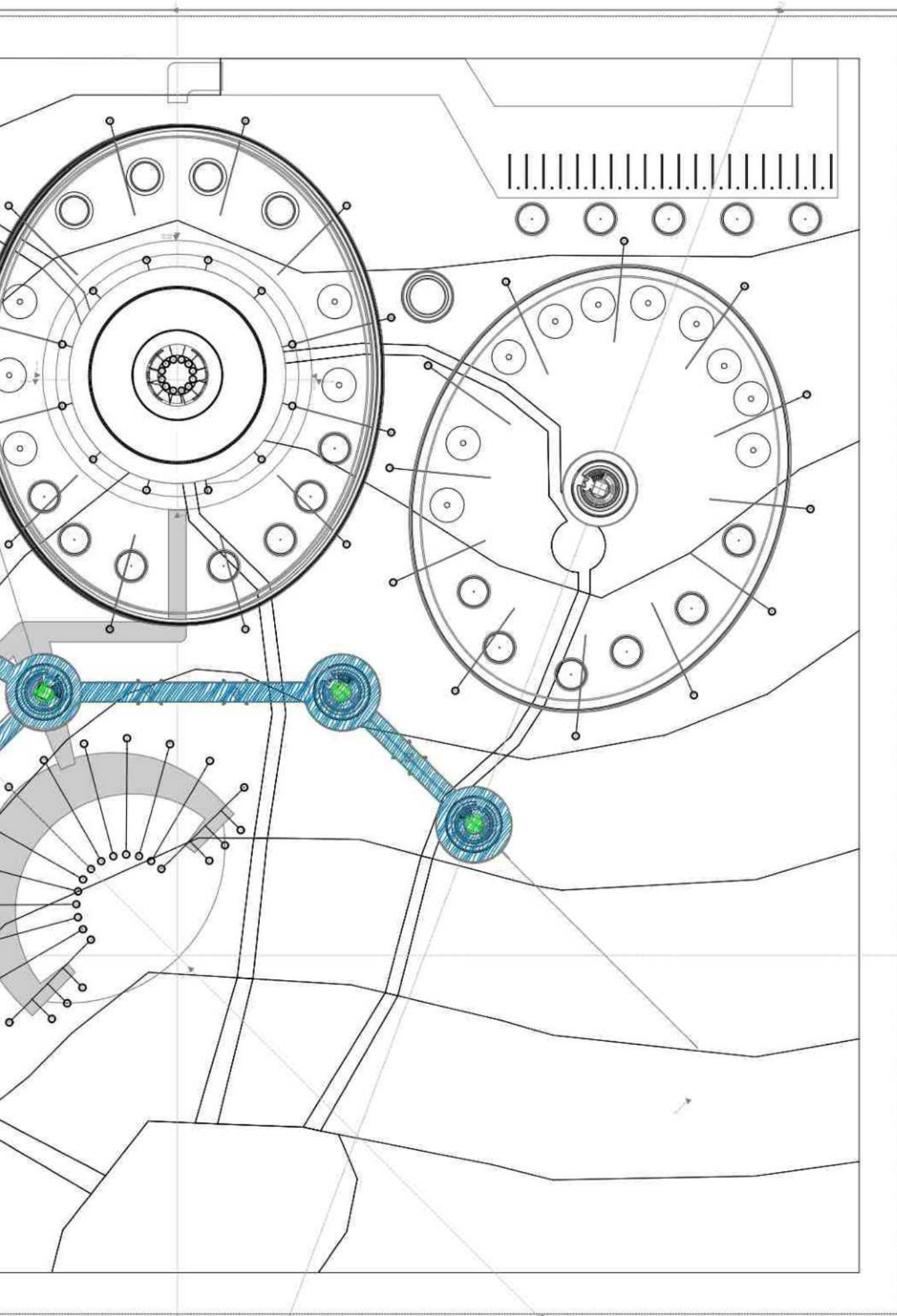
-  DIFABLE ROUTE
-  RAMP
-  STAIR
-  LIFT

APPROVAL

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1:750



DEPARTMENT of ARCHITECTURE
Universitas Islam Indonesia

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DRAWING TITLE



TRANSPORTATION
PLAN 2

SCALE 1:750

DESCRIPTION

-  DIFABLE ROUTE
-  RAMP
-  STAIR
-  LIFT

APPROVAL

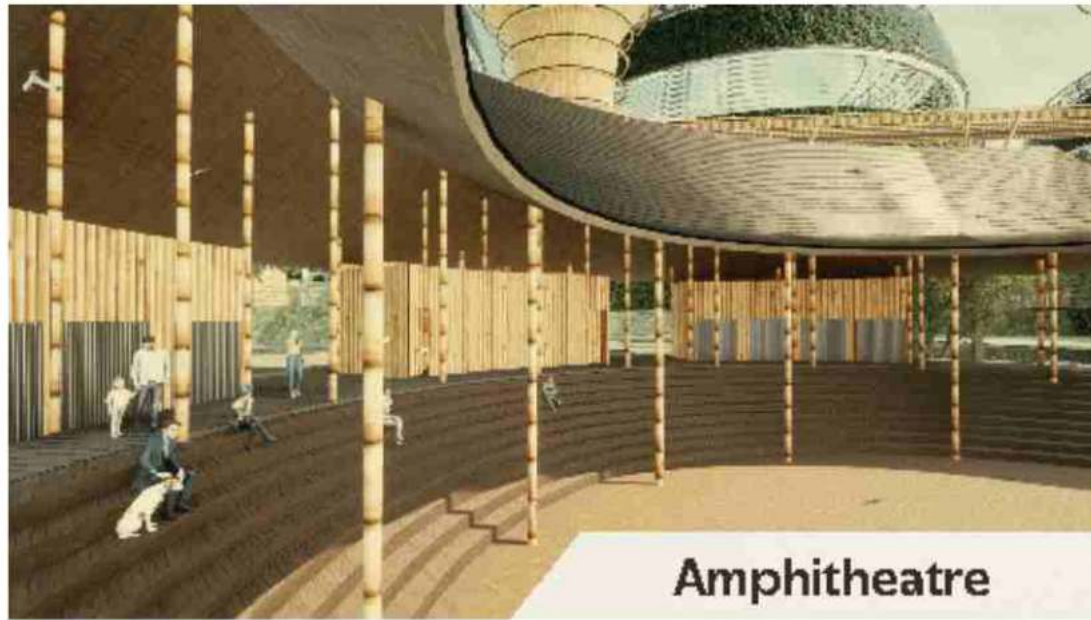
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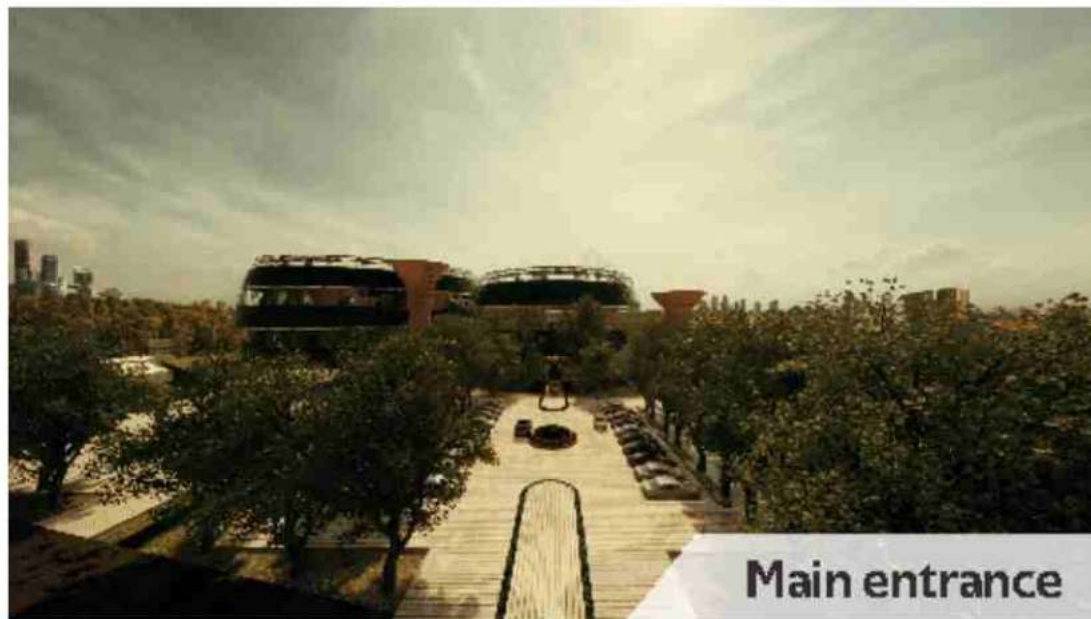
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Amphitheatre



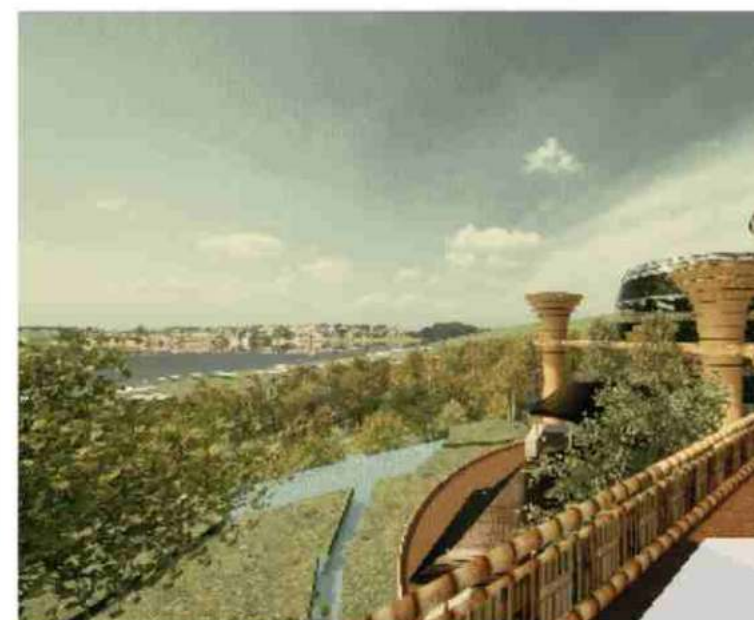
A



Main entrance



Bird View





Amphitheatre



Motorcycle Parking



Sky Bridge



bus parking



Sky Bridge



bus parking



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in Kutonprogo with Environmental
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RENDER
EXTERIOR

SCALE

DESCRIPTION

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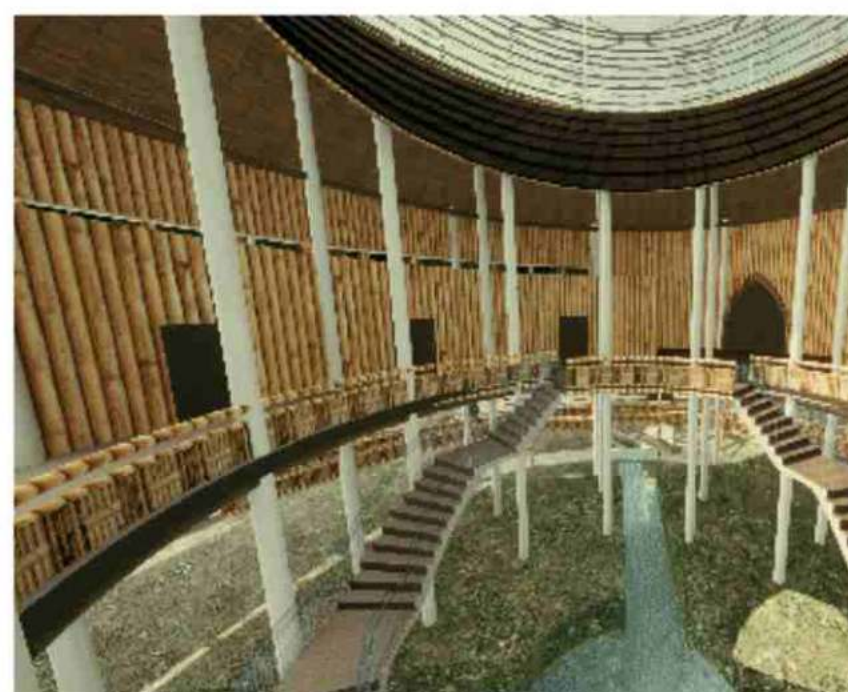
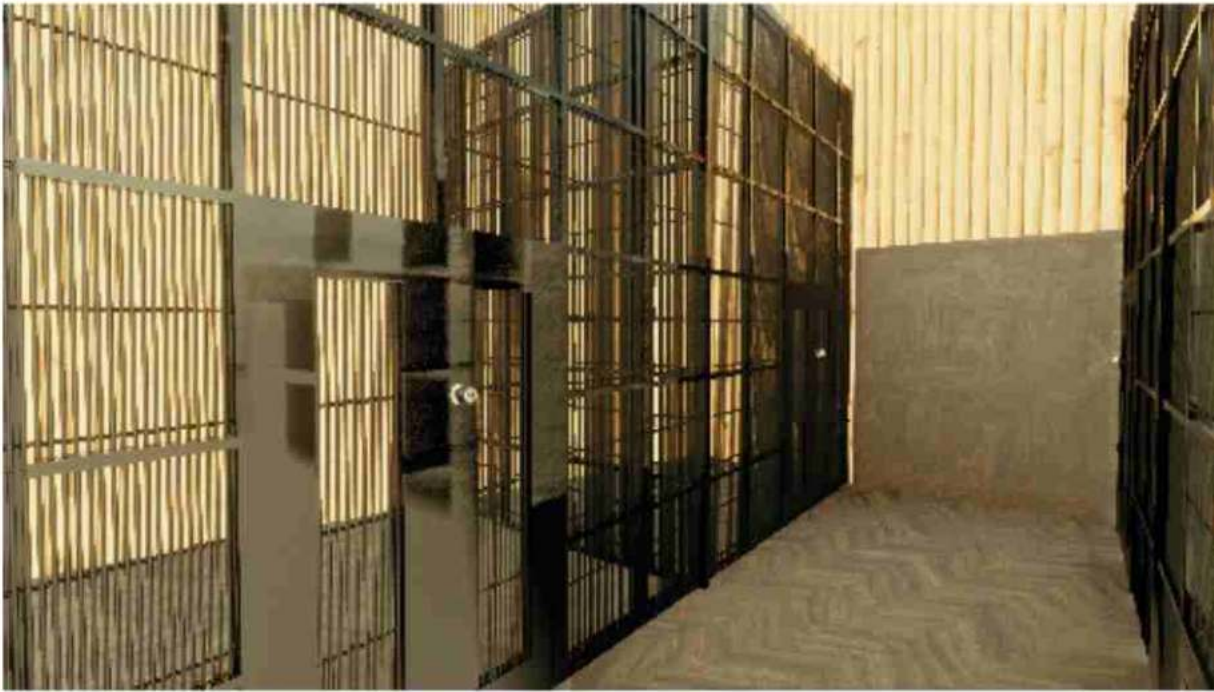
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Breeding Aviary





Rehabilitation Aviary



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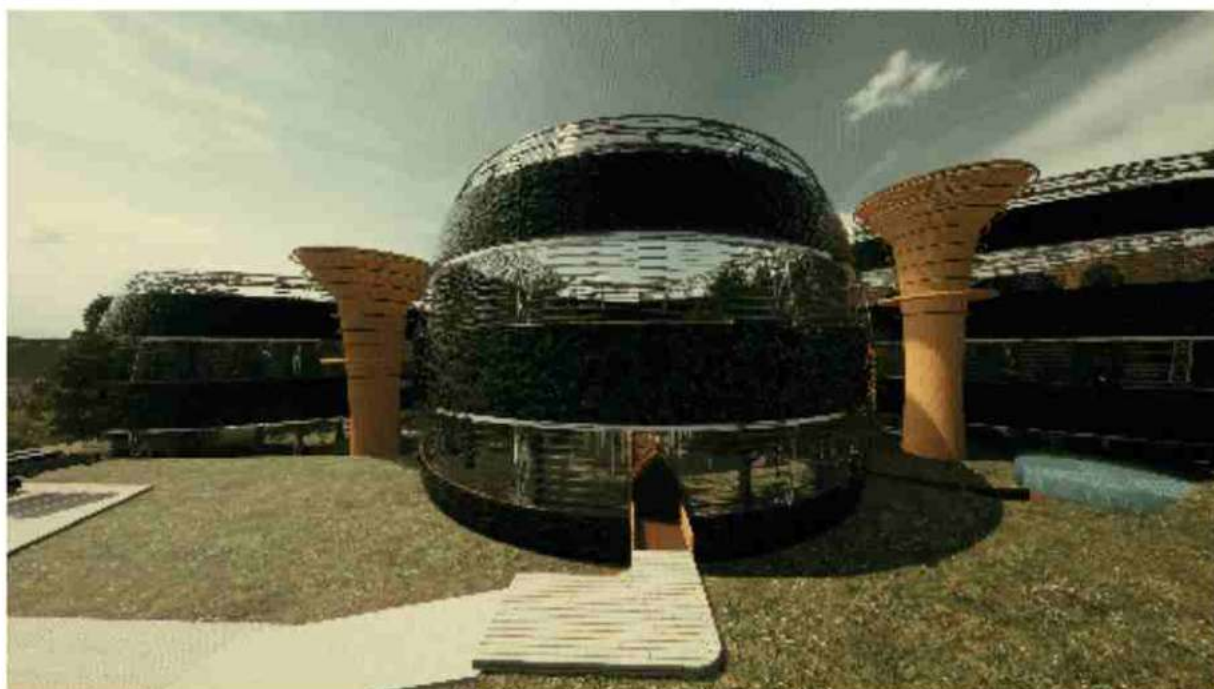
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RENDER
REHABILITATION AVIARY

SCALE

DESCRIPTION



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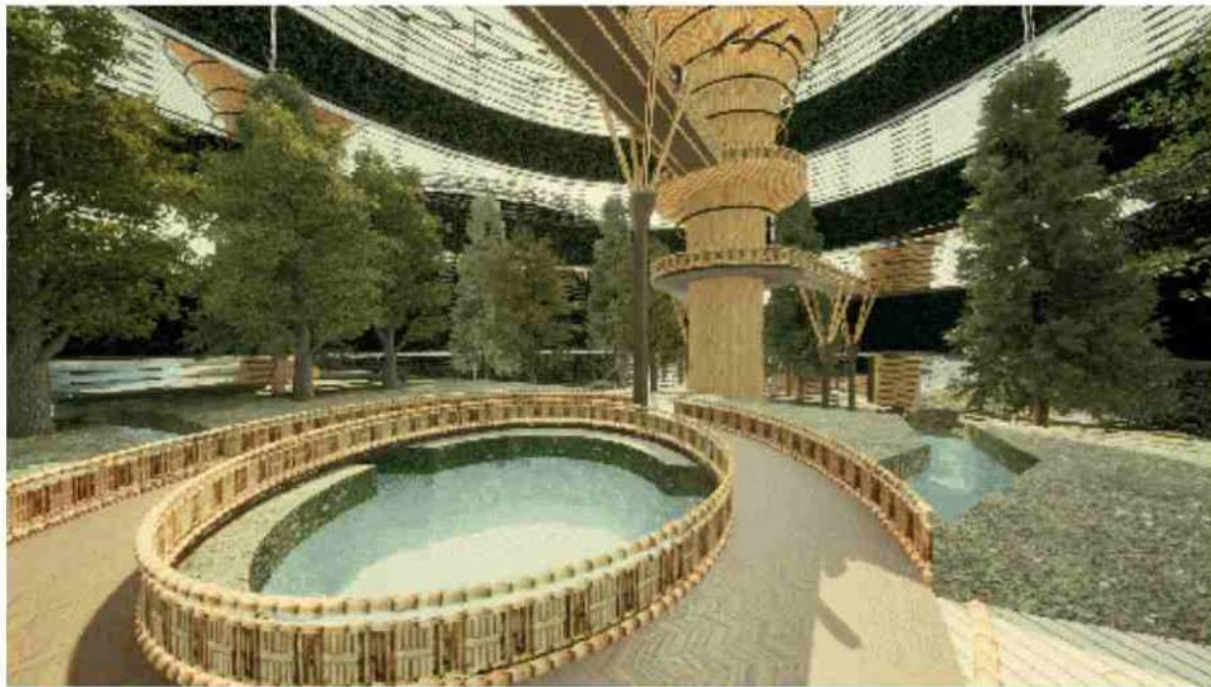
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Raptor Bird Aviary



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RENDER
RAPTOR BIRD AVIARY

SCALE

DESCRIPTION



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Jatimulyo Bird Conservation

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RENDER
SMALL BIRD AVIARY

SCALE

DESCRIPTION

Small Bird Aviary



APPROVAL

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BUILDING
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