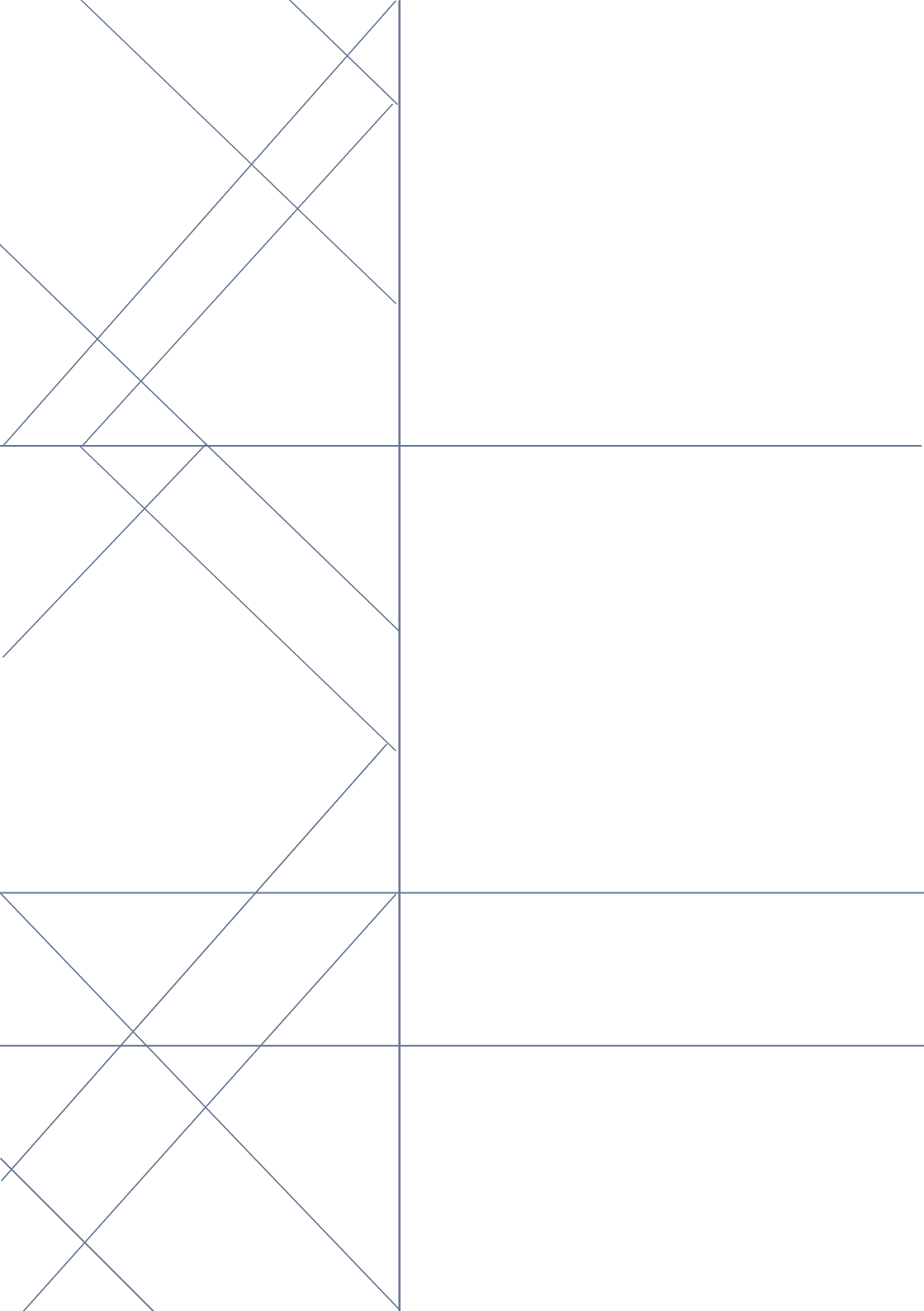
OFF CAMPUS INDEPENDENT STUDY 2023-24

THE SOUL OF SEOUL

서울의 영혼



SCHOOL OF ART & ARCHITECTURE,
SUSHANT UNIVERSITY



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EDITORS' NOTE

Nimrat Dhanoa
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South Korea's dynamic architecture reveals its arduous journey from a war torn country to a comprehensive and collective state that is assertive towards changing its skyline expeditiously. South Korea has always planned their cities for people; and of the cities for people, Seoul, has given some prodigious developments to attract tourism and put the city on the global map. Just in three decades the tourism has increased by 45%, thus making it as one of the most visited cities in the world. This development is a collection of marvellous and awe-inspiring buildings for architects, urban planners, students, and those who are interested in the evolving cityscape.

This book is an attempt to bring together the traditional and modern etiquettes that is shaping the city and the architecture that is trying to conquer innovation.

In our exploration of Seoul's iconic modern buildings, The Dongdaemun Design Plaza is a prime example of proving the above statement. Designed as a cultural hub in the historical district of Seoul the architect integrated history, culture, urban, social, and economic aspects of Seoul deduced from Metonymic Landscape. It is indirectly hinting on Seoul's progress evolving from an arresting colonial era. It is a testament regarding engineering excellence and elegance of South Korea; where parametric design has given a new meaning to the future of any space.

This has engaged students to do a thorough analysis of parametric designs and its implications with Seoul's traditional architectural principles for shaping the city. The discussion further navigates through the use of digital tools and technologies that are elevating the skyline and overall urban experience in the city.

This book is designed to inspire architects, urban planners, scholars, and enthusiasts alike to understand and innovate from Seoul's architectural tapestry.

FOREWORD

Prarthna Mishra
Assistant Professor, 3rd Year Design Studio
School of Art and Architecture,
Sushant University

It is with great pleasure that I introduce this book documenting the recent architecture study trip undertaken by the third-year undergraduate students of Sushant School of Art and Architecture to Seoul, South Korea. This journey, which included visits to some of the most iconic and innovative structures in contemporary architecture, represents a pivotal moment in their academic and professional development.

Seoul, a city that masterfully blends tradition with cutting-edge modernity, was the perfect classroom for the students. Among the highlights of their trip were visits to the Dongdaemun Design Plaza (DDP), an architectural marvel by Zaha Hadid; the serene and spiritually enriching Saemoonan Church by Seoinn Design Group; and the sleek, sustainable design of the Amorepacific Headquarters by David Chipperfield. Each of these buildings, with their unique forms, innovative use of materials, and thoughtful integration into the urban fabric, offered invaluable lessons in architectural design and theory.
The insights gained from observing and analysing these structures were instrumental as our students returned to the design studio.

The buildings visited in Seoul have not only inspired their innovative skyscraper projects but will continue to be valuable references throughout their careers.
In particular, this experience has enriched their understanding of skyscraper design. The complexities of creating vertical cities, balancing aesthetics with functionality, and incorporating green technologies are challenges that the students are now better equipped to tackle. The blend of Seoul's architectural heritage with its futuristic skyline provides a comprehensive case study that have informed and elevated their approach to designing the skyscrapers of tomorrow. I hope that this report not only documents their experiences but also serves as a catalyst for their continued exploration and ambition in the field of architecture.

PREFACE

Himanshu Sanghani
Professor of Architecture
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Third Year Design Studio of Sushant School of Art and Architecture (SSAA) mainly focuses on habitat ecologies and architecture tectonics, which is a critical part of Responsive Ecologies Architecture Lab (R.E.A.L) run in the school. This Lab chiefly focuses on scenarios in future, where habitat may face severe environmental problems. Students explore how these problems or risks can be addressed via architecture of future. Off Campus Independent Study (OCIS) is a credited course in Bachelor of Architecture programme that takes places through First Year till Third Year. The objective of the OCIS (study tour) is to enable students in observing and appreciating the architectural marvel nationally and internationally, read and learn about different practices and cultures that have transformed the conventional architecture to modern and futuristic architecture. The study tour is also intended to expose students to the modern design principles adopted in various projects as you shall read in the book.

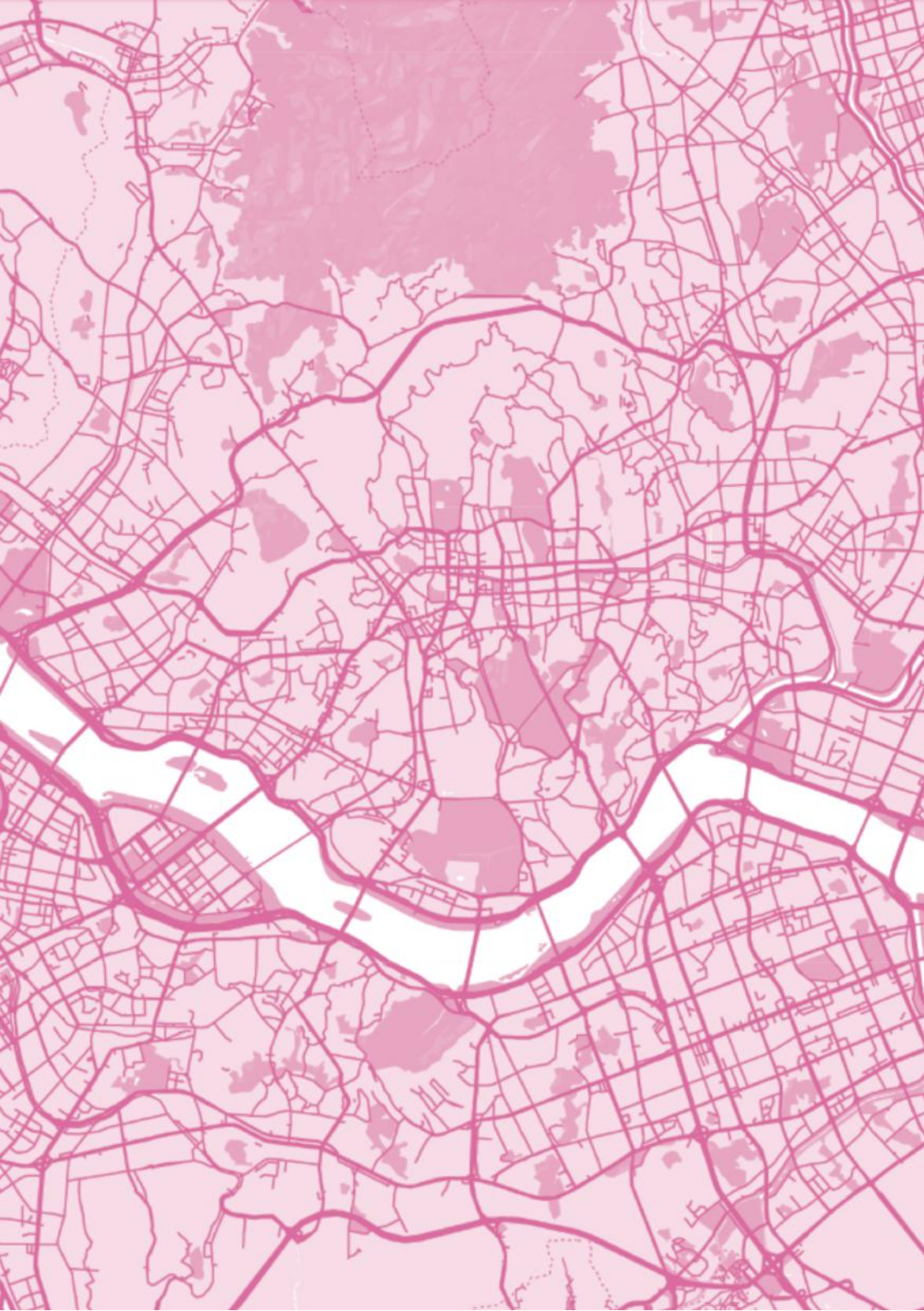
Travelling is undoubtedly an inevitable part of learning architecture that transforms an individual's personality and makes her/him ponder on the inclinations towards culture and society as a whole after experiencing it. The exposure from architecture study tours define the transition in students' lifestyles and allows them to gain richer experiences to form their perspectives. In this virtual age where access to data is immense the very basic form of collecting information i.e. visual, touch, smell and feel may get badgered. Architecture study tours safe-guards that; and this journey for both the knowledge providers and seekers taps into the power and potential of peer-to-peer learning. I firmly believe that Architecture is mother of all arts (rather all other programmes), which teaches one to be compassionate, create for the betterment of others and above all be comprehensive. And architecture study tours assist in strengthening this de-facto.

For 2024 OCIS the School decided to explore the architecture of Seoul, South Korea on the note of similar cultural traditions but understanding the role of architecture in future. The tour was organised for 10-days studying traditional villages such as Hangkok to futuristic buildings like Lotte World Tower and Kolon One&Only. The students were given exercises to analyse the projects in terms of the elements and principles of design, types of spatial organizations and construction techniques, services, mass and volume, layout and overall scheme, facade treatment, structural systems and any other areas of study that would enhance their learning. These exercises were being analysed to accurately highlight the two major outcomes viz; aligning above mentioned exercises with the R.E.A.L so that the learning strengthens the studio work and publishing the OCIS book to capture the understanding of worldly architecture by Indian architecture students. Sharing the documentation work with some of the top internationally renowned Universities for future collaborations and join ventures were the avenues sought by the School.

I hope the content of the book does justice to the purpose, existence and architecture of the projects studied and an enhanced learning is captured for the readers.







INTRODUCTION

Seoul, a captivating tapestry of ancient and modern, leaves visitors breathless with its vibrant energy. From the grandeur of historic palaces to the audacious forms of contemporary skyscrapers, the city offers an endless source of inspiration. The journey within Seoul was a deep dive into a rich architectural landscape, uncovering stories embedded within every structure.

Students were immersed in a dynamic environment, engaging in insightful discussions with local architects and scholars. This firsthand experience unveiled Seoul's innovative spirit, from sustainable design strategies to cutting-edge technological advancements.

This architectural odyssey through Seoul commenced with a visit to the National Aviation Museum, where the marriage of engineering and design took flight. Day two immersed the students in Seoul's diverse cultural tapestry, exploring the serene spirituality of Saemoonan Church, the historical narratives of Seosomun Shrine History Museum, and the dynamic energy of Ewha University.

Day three unveiled Seoul's multifaceted identity. The National War Memorial stood as a solemn tribute, while the innovative Amorepacific Headquarters embodied sustainable design principles. The National Museum of Contemporary Art showcased Korea's artistic evolution, culminating in the iconic Dongdaemun Design Plaza, a testament to parametric architecture's potential.

The exploration continued on day four with the serene ambiance of the Songpa Book Museum, followed by the breathtaking heights of Lotte World Tower and the futuristic Starfield Library. Day five introduced the students to the world-class art collections of Leeum Samsung Museum of Art, the urban dynamism of Garak Tower, and the retail haven of Hyundai Mall. Our journey concluded with the eco-conscious design of Kolon One&Only Tower, the verdant oasis of Seoul Botanical Garden Greenhouse, and the innovative Floating Island, a symbol of Seoul's forward-thinking approach to urban development.

This immersive experience has broadened the architectural horizons of the students, inspiring them to create designs that are not only aesthetically pleasing but also socially and environmentally responsible.



NATIONAL AVIATION MUSEUM

Coordinates	:	37°33’23”N 126°48’29”E
Architecture Firm	:	Haeahn Architects
Total Area	:	18593 m²
Completion Year	:	2020

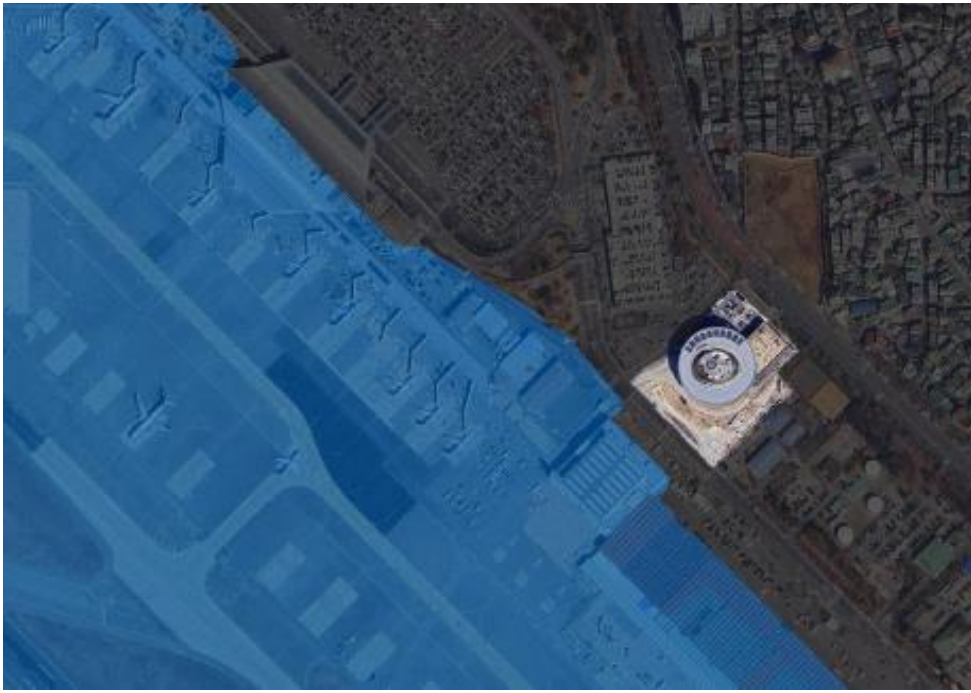


NATIONAL AVIATION MUSEUM

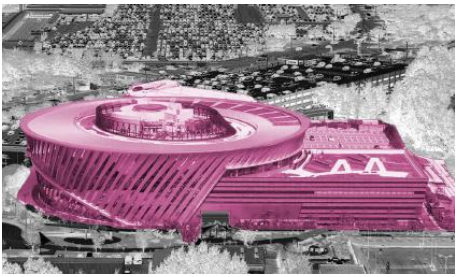
Where History Takes Flight

Nestled within the transforming Gimpo Airport, which is slated to become a full-fledged airport city, the National Aviation Museum takes flight as a landmark cultural facility. Designed by the Haeahn Architecture firm and completed in 2020, the museum embodies the Ministry of Land, Infrastructure, and Transport's vision to elevate the Korean aviation industry's status.

The building's unique form and strategic placement within the airport city development create a powerful architectural statement, beautifully translating its three core principles: science, freedom, and the spirit of adventure. It positions itself as a central hub for education, exhibitions, and immersive experiences – a true pioneer in showcasing the wonders of aviation.



The form of the National Aviation Museum is a dynamic blend of circular and rectangular geometries, reflecting its thematic connection to aviation and movement. Envisioned as a multifaceted circular volume, the museum showcases a striking architectural form that is instantly recognisable.



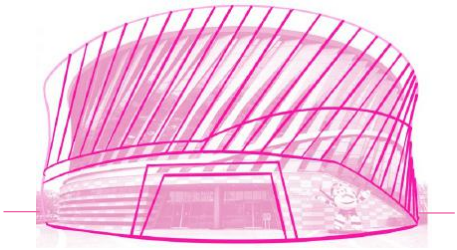


Fig 1.1: Curved Design
Aerial and Diagrammatic views of the building's form



Location and Accessibility:
It is strategically located at 177 Haneul-gil, in the Gangseo-gu District of Seoul, South Korea. This prime location places the museum adjacent to the domestic runways of Gimpo International Airport, creating a direct link to the country's aviation heritage. The museum is easily accessible via public transport, with Gimpo Airport Station serving as a major transit hub nearby, offering both subway and bus connections.

Orientation:
The circular layout of the exhibition hall ensures 360-degree visibility, making the structure prominent from all angles, including views from the support complex, the main entrance road (Haneul-gil), and the southern beltway. This thoughtful orientation not only emphasises the museum's architectural form but also optimises natural light penetration and the use of outdoor spaces for exhibitions, enhancing the overall visitor experience.

Structural System:
A distinctive feature of the museum's structure is the use of exposed inclined steel columns, which not only provide structural support but also enhance the building's visual identity. The diagonal columns, arranged in a consistent pattern or rhythm, elevate the museum's exterior facade and interior atrium with a sense of drama and sophistication, while delineating different zones within the museum. These inclined columns work in harmony with large-scale steel beams to create a vast, uninterrupted interior space, enabling the display of large aircrafts and other exhibits without the obstruction of intermediate columns.

The museum also incorporates a flat circular truss system, which is essential for distributing structural loads across the building. This truss system is further reinforced by rod bracing between the columns, adding lateral support and improving the overall rigidity of the structure.

Steel framing was used to create the void between spaces designed as the air walk. The transparent facade, which gives the museum its distinctive appearance, is also structurally supported by steel fins attached to a circular truss at the top of the building. This facade not only allows natural light to flood the interior but also plays a key role in the building's structural integrity.

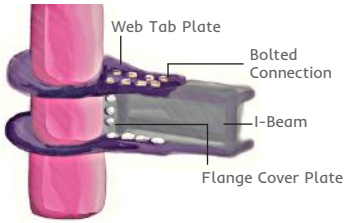
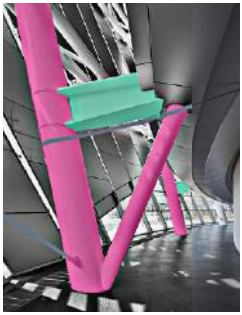
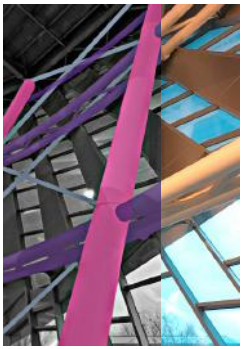


Fig 1.2: Column-Beam joinery details



Fig 1.3: Circular Truss





Inclined Steel Column
Square-frame Circular Truss
Steel Cable
Steel I-Beam

Fig 1.4: Structural components used in the building

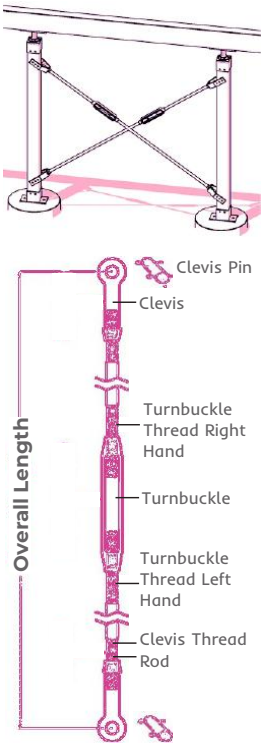


Fig 1.5: Eye and eye turnbuckle for tensioning the cable.

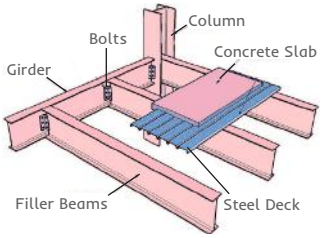


Fig 1.6: Roofing system details



Angled Aluminium Fins

Steel Transoms

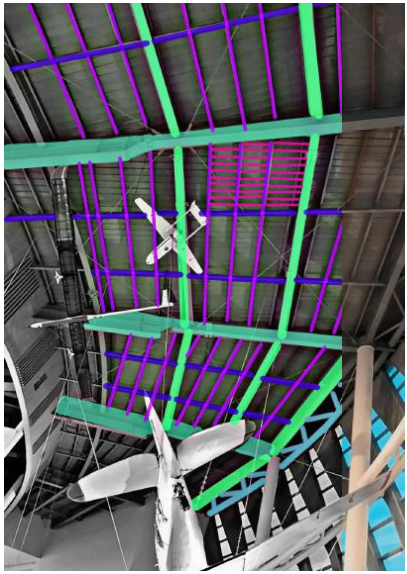
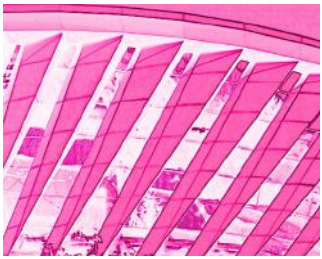


Fig 1.7: Roof framework showing steel beams, girders and trusses

Facade System:
By utilizing large, transparent façades, the museum harnesses natural light, reducing reliance on artificial lighting while potentially enabling natural ventilation, thus minimising energy consumption. The elevation incorporates elements inspired by aerodynamic forms, which include curved surfaces, streamlined shapes, and dynamic angles that evoke the feeling of flight and movement. Clean lines and geometric shapes dominate the facade.

Layout Scheme:
Upon entry, visitors are welcomed at the reception area and ticket counters. Inside, well-planned circulation paths guide visitors through themed exhibition halls, such as the Historical Aviation Hall and the Military Aviation Hall. The exit area includes facilities such as rest rooms and a gift shop, completing the journey. The circular hall surrounds visitors with a continuous flow of aviation history, making them feel engulfed in an endless journey through time. The core of the museum, filled with interactive zones, instils a sense of wonder and engagement, inviting a personal connection with the advancements in aviation.

ANGLED FINS



GLASS PANELS



Fig 1.12: The facade system is mainly composed of the above.

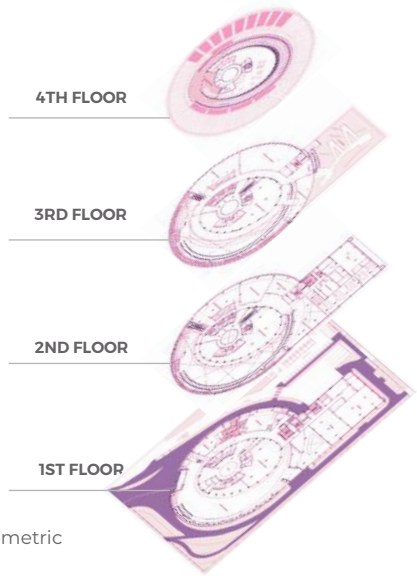


Fig 1.13: Plans in Axionometric view

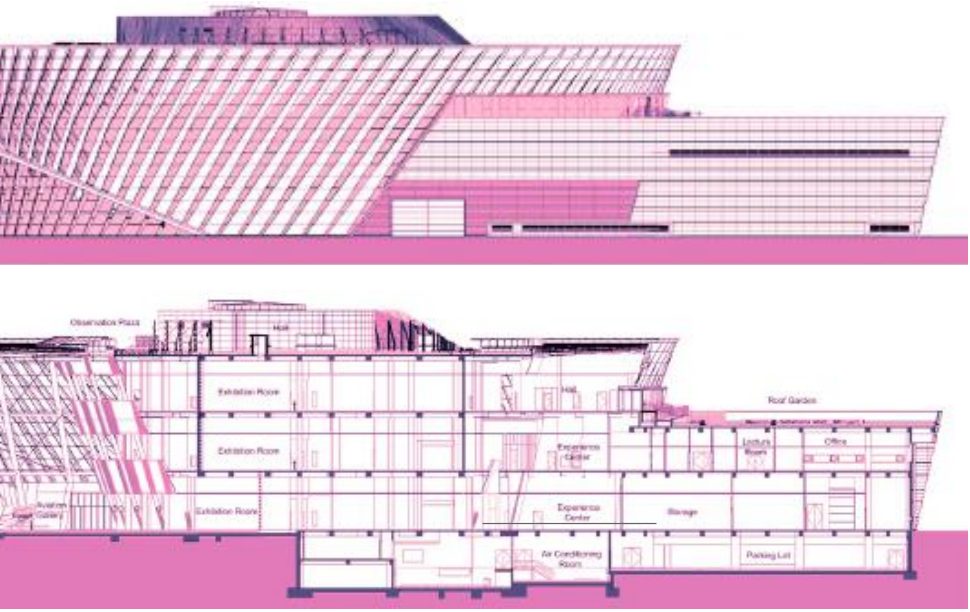


Fig 1.14: Elevation (top) and Section (below) depicting the facade elements and programs

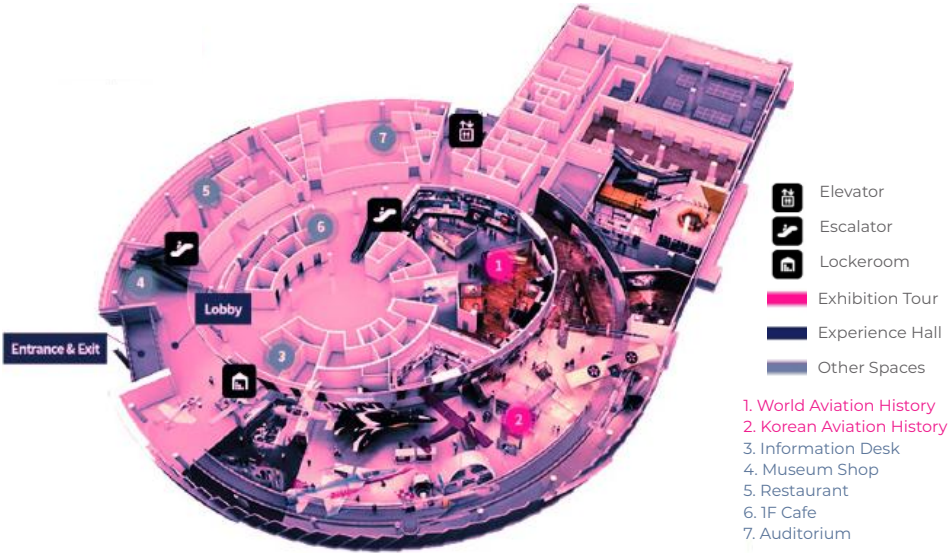


Fig 1.15: 3D floor layout: Spaces and Services

Design Concept and Circulation:
The museum's design revolves around three core concepts: Air Turbine, Air Show, and Air Walk. Air Turbine, a dynamic landmark, symbolizes the power and science of aviation. The museum resembles a turbine engine, which makes it easily recognizable from the outside. The Air Show gallery unfolds the history of Korean aviation in a panoramic fashion, while the Air Walk, a three-dimensional exhibition pathway, offers an immersive experience among various aircraft.

Layout of museum has a circular movement flow, with the circulation encompassing a core in the middle, which has interactive zones within. The outer zones features various artifacts and show-pieces, which area arranged in a manner promoting linear movement. The absence of sharp corners create a more fluid and spacious interior.

The circular layout, with its central atrium, creates a natural flow through the museum, allowing visitors to explore different exhibits at their own pace. A large skylight is installed in the atrium ceiling to provide ample natural light and create an open, airy atmosphere. The skylight is designed to mimic the shape of an aircraft engine wing or fuselage, adding visual interest and reinforcing the aviation theme

The structural system used is a sophisticated blend of steel and reinforced concrete, designed to support its expansive and dynamic architectural form. The center-piece of the structure, the circular exhibition hall, is primarily supported by a robust steel frame system, which allows for the building's vast size and open, column-free interior spaces. This steel frame is anchored to a reinforced concrete foundation, ensuring the stability and durability of the building.



Fig 1.8: Circular layout with huge walls creates a panoramic which immerses the user

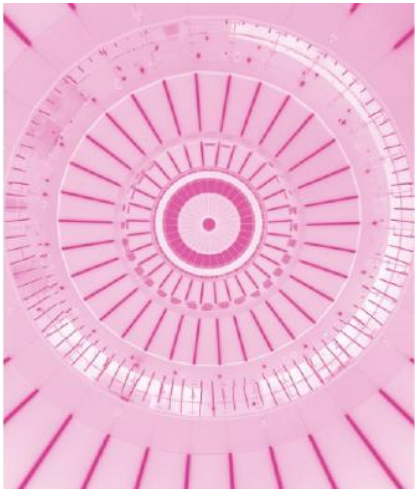


Fig 1.9: Skylight atrium on the ceiling.



Fig 1.10: Sectional Representation of the atrium void.

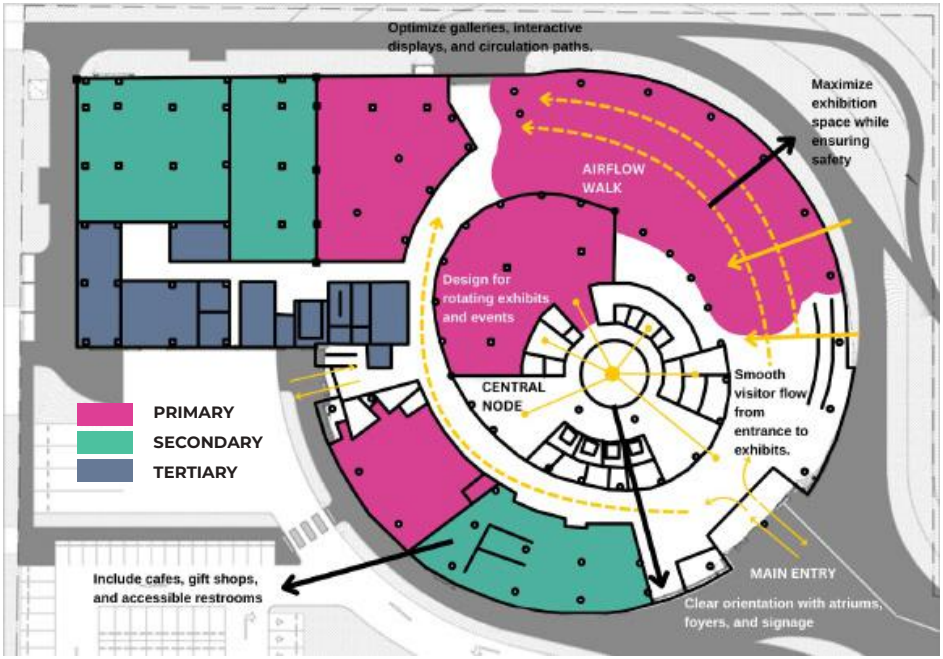


Fig 1.11: Floor plan showing different zones and circulation paths



SAEMOONAN CHURCH

Coordinates	:	37°34’14”N 126°58’24”E
Architecture Firm	:	Seoinn Design Group + Eunseok Lee
Total Area	:	46000 m²
Completion Year	:	2019



SAEMOONAN CHURCH

First and Oldest Protestant Church

Saemoonan Church, also known as the "Mother Church" of Korean Protestantism, is a significant religious landmark located at 77 Saemunan-ro in the Jongno-gu district of Seoul, South Korea. This modern architectural marvel was completed in 2019 to commemorate the 132nd anniversary of the church's founding. The church was designed by a team led by Dongkyu Choi, Lee Eunseok and Seoinn Design Group, who aimed to blend historical significance with contemporary design elements.

The primary purpose of Saemoonan Church is to serve as a central place of worship and community for its congregation, while also symbolizing the church's historical role in the spread of Protestant Christianity in Korea.

Saemoonan Church is not just a place of worship; it also serves as a cultural hub with spaces like a museum, bookstore, café, and a courtyard that hosts events. This multi-functional approach makes the church a vibrant part of the community, blending spiritual, cultural, and social activities under one roof.



Unlike conventional churches with towering spires and Gothic designs, Saemoonan Church features a modern, curved facade that symbolizes a mother's open arms, inviting all who approach. This fluid design contrasts sharply with the rigid forms typically associated with religious buildings, emphasizing openness and inclusivity.

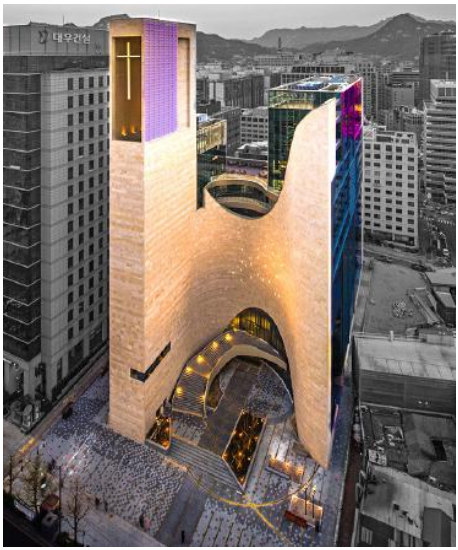


Fig 2.1: Aerial view of the surrounding highlighting the building and its facade.



Location and Accessibility:
The church is conveniently positioned near several important landmarks, including the Korean Museum of History, which is within walking distance, and the Gyongheuigung Palace, just a five-minute walk from the museum. This central location makes the church easily accessible to both locals and tourists, fostering its role as a prominent community hub.

Orientation:
The orientation of Saemoonan Church is deliberately aligned to enhance spiritual connectivity and symbolism. The church faces east, a direction traditionally associated with resurrection and new beginnings in Christian theology. This orientation allows the building to capture the morning sunlight, which floods the interior with natural light, symbolizing the presence of Christ as light.

Structural System:
The primary structural framework of Saemoonan Church is based on a steel frame, providing the necessary strength and flexibility to accommodate the building's distinctive curved forms and large open spaces. The steel framework allows for the creation of wide, column-free interiors, which are crucial for the church's fan-shaped layout.
The stone facade is supported by a series of brackets and anchors attached to the steel frame. The curvature of the facade is achieved through precision-engineered steel supports that accommodate the building's design.

Facade System:
The façade is characterised by its modern and symbolic design, which sets it apart from traditional church architecture. Key aspects of the façade design include:

Curved Stone Facade:
A gently curved granite stone cladding extends outward from the central entrance, creating a sense of movement and fluidity, distinguishing the church from more conventional, vertical church façades. It also helps reduce direct sunlight, contributing to the building's climate response by keeping the interior cooler in summer and providing thermal insulation during winter. The stone's texture contrasts with the smooth curves of the façade, adding depth and richness to the building's appearance.

Central Void and Towers:
The central part of the façade is punctuated by a circular void, which recedes inward and creates a focal point around the main entrance. On either side of this central void, two towers rise: a broader tower housing the church's offices and a slimmer, more modern spire that serves as a contemporary representation of traditional church spires, symbolising openness and ascent.

Cantilevered elements supports overhanging sections, such as the observatory and suspended cross, extending beyond the main structure without additional external supports. Integrated into the steel framework, these cantilevered elements are designed to manage the additional loads and stresses associated with projecting structures.



Fig 2.2: Structural Framework



Fig 2.3: Integrated glass panels in the facade enhance transparency and light flow, The interplay of light and shadow, along with the sculptural forms of the architecture, develops within visitors; a sense of protection and enclosure.



Fig 2.4: View of the Right Facade

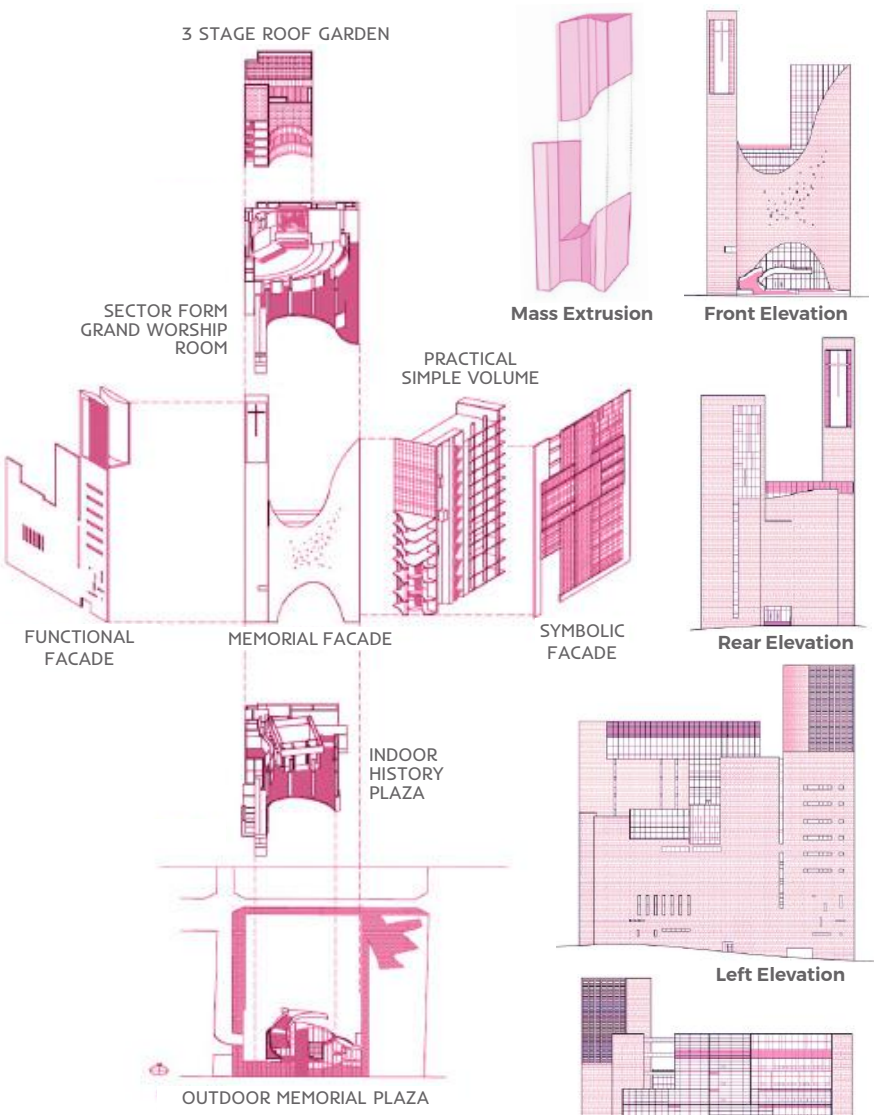


Fig 2.5: (left) Exploded View of the structure depicting different exterior and interior elements and their symbolism. **(right)** Elevations

Circulation:
The ground floor layout of Saemoonan Church is meticulously designed to enhance both the spiritual and practical experiences of visitors. The design prioritises accessibility, openness, and the functional separation of spaces.

Main Entrance and Courtyard:
The main entrance from the road leads into a spacious courtyard, which serves as a welcoming area for visitors and a venue for cultural events. This open space transitions visitors smoothly from the outside environment into the church's interior.

Central Worship Space:
Adjacent to the courtyard, the central worship area features a fan-shaped design. This layout facilitates unobstructed views of the altar from all seating positions and promotes an inclusive, community-focused environment. The worship space is designed to accommodate large congregations and foster a sense of unity.

Museum Area:
Located to the right of the central worship space, the museum area provides educational and historical context about the church. It is easily accessible from the main worship area, allowing visitors to engage with the church's history and artefacts

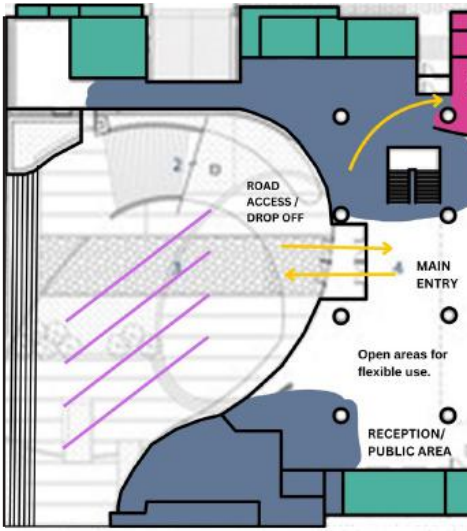
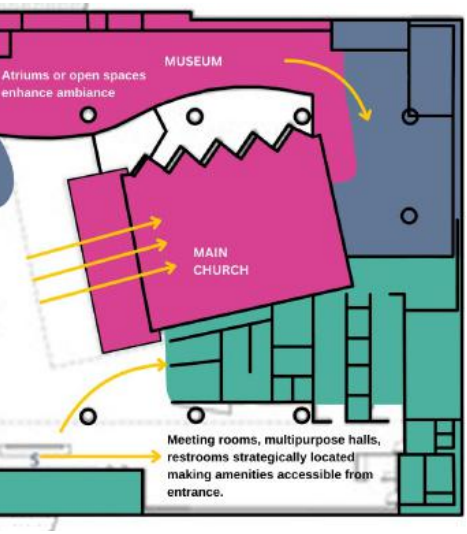
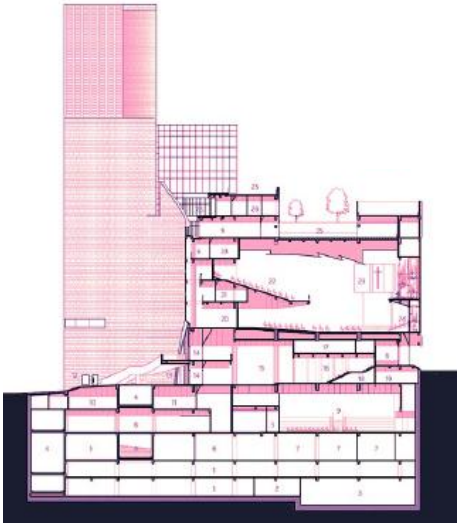


Fig 2.6: Ground Floor Circulation



Fig 2.7: Axionometric Plans





PRIMARY
SECONDARY
TERTIARY

Fig 2.8: Section

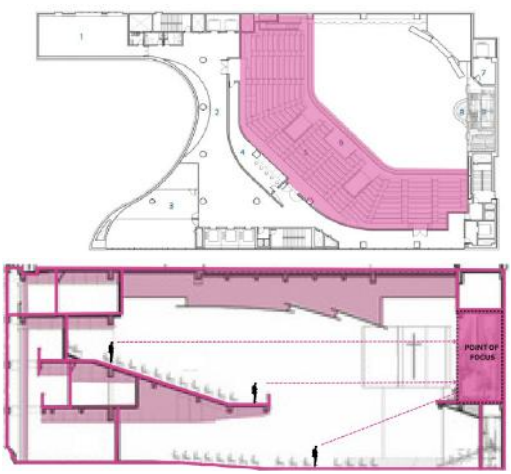




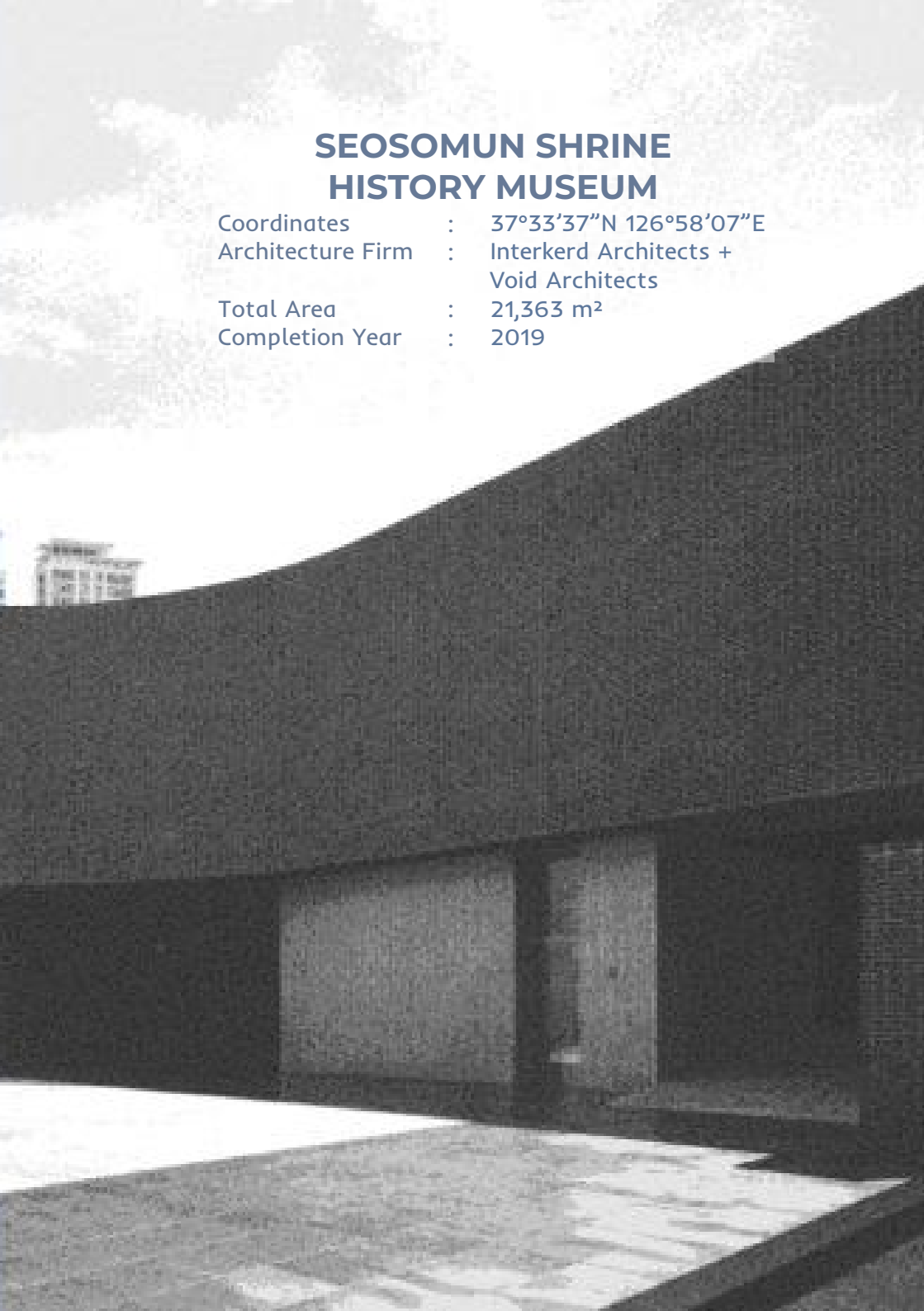
Fig 2.9: Auditorium Plan, Section and Interior view (not to scale)

The curvaceous wall facade in the auditorium directs attention to the stage, enhancing worship activities. The main conference room's fleece-covered walls foster a sense of contemplation and enclosure. The peaceful, contemplative atmosphere encourages inner calm and spiritual reflection, achieved through the open and flowing spatial design.



SEOSOMUN SHRINE HISTORY MUSEUM

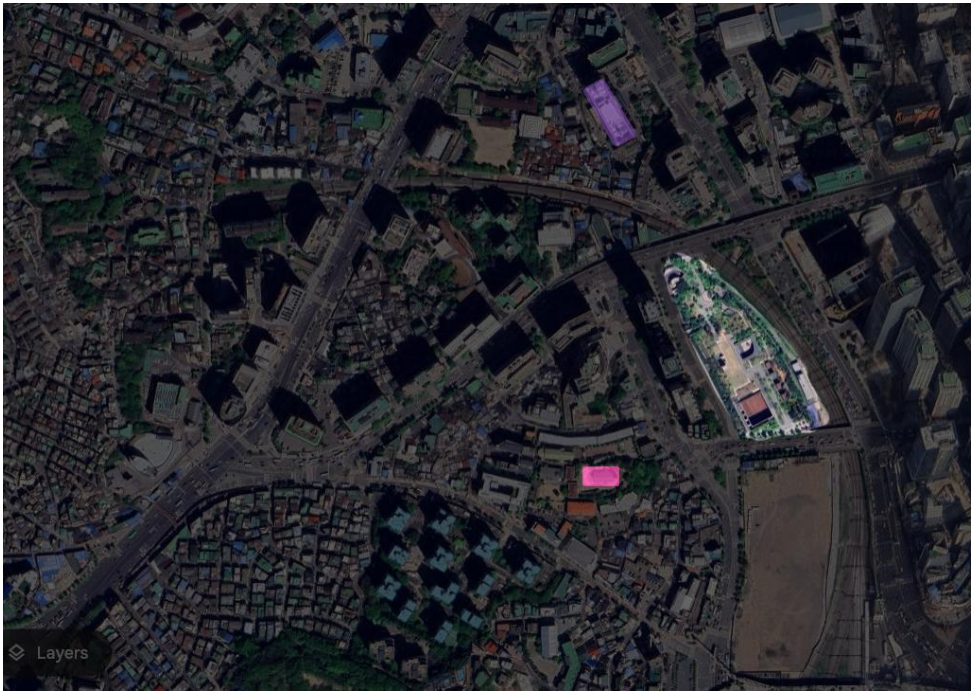
Coordinates	:	37°33’37”N 126°58’07”E
Architecture Firm	:	Interkerd Architects + Void Architects
Total Area	:	21,363 m²
Completion Year	:	2019



SEOSOMUN SHRINE HISTORY MUSEUM

The Seosomun Shrine History Museum, located beneath the Seosomun Historical Park in Jung-gu, Seoul, is far more than just a memorial; it is a transformative space where the narratives of those who endured the country's turbulent history are preserved and conveyed through thoughtful design and a solemn atmosphere. Completed in 2019 by architects Yoon Seunghyun, Lee Kusang, and Junseung Woo, the museum skilfully merges modern architectural elements with a deep sense of historical reverence. Its striking use of materials and innovative layout invites visitors to engage deeply with Korea's religious history while immersing themselves in a space that fosters tranquillity and introspection.

In 1996, an underground public parking space was constructed beneath the park, which later became the foundation for the Seosomun Shrine History Museum.



Seosomun Historical Park became infamous as the location where many Catholics were persecuted and martyred during various religious purges, such as the Sinyu Persecution of 1801 and the Byungin Persecution of 1866. These tragic events have imbued the park with a solemn atmosphere, making it a sacred site in Korean Catholicism.

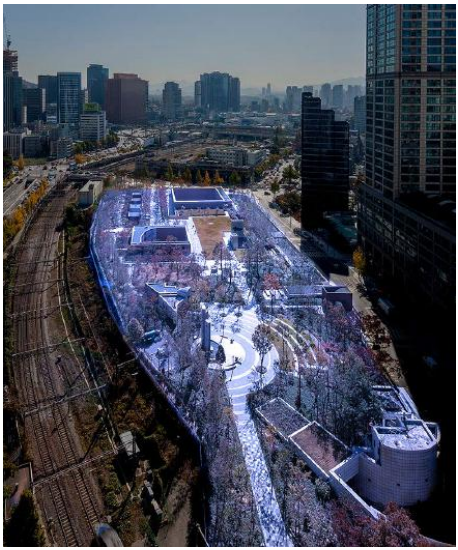
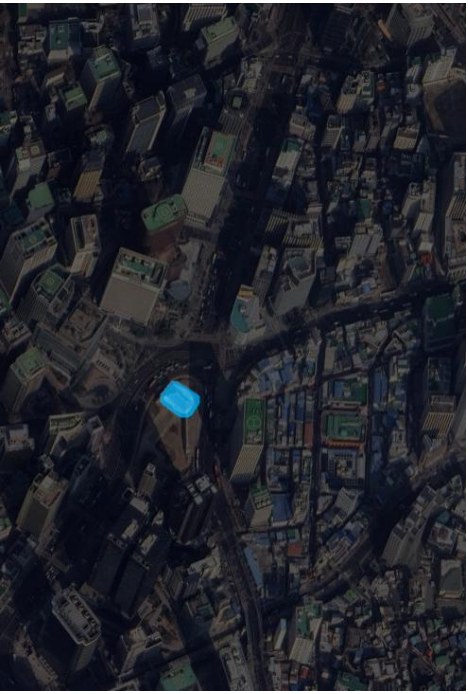


Fig 3.1: Seosomun Historical Park and the context.



Location and Accessibility:
The museum is located at 5, Chilpae-ro, Jung-gu, Seoul, Korea, within the Seosomun Historical Park. This park, steeped in history as a former execution ground during the mid-Joseon period, offers a deeply significant context for the museum's themes of remembrance and reflection. The museum is easily accessible by public transportation, with nearby subway stations and bus routes connecting visitors to the site. This location, just a short distance from the bustling city streets, provides a quiet and contemplative space for reflection.

Orientation:
The building is aligned to maximize the use of natural light, with strategically placed windows and skylights that allow sunlight to filter into the interior spaces throughout the day. This orientation also contributes to the museum's energy efficiency, reducing the need for artificial lighting and heating.

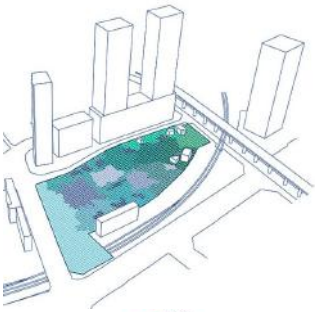
Circulation:
The circulation within the Seosomun Shrine History Museum is meticulously designed to enhance the visitor experience, guiding them through a thoughtful journey of reflection and discovery. Upon entering the museum, visitors are directed along designated paths that lead through various exhibits, each section carefully curated to highlight different aspects of Korea's religious history, particularly the persecution and martyrdom of Catholics.

Main Entrance Transition: Visitors enter the museum a few floors below ground level, where the entrance is designed to gradually separate them from the noise and chaos of the outside world. This transition space sets the tone for the rest of the museum, preparing visitors emotionally and mentally for the stories they are about to encounter.

Spatial Hierarchy: The layout creates a hierarchy of spaces, from the more public and communal areas near the entrance to the more private and contemplative spaces deeper within the museum. This progression mirrors the visitor's journey from the outside world into the depths of history and memory, enhancing the emotional impact of the museum experience.

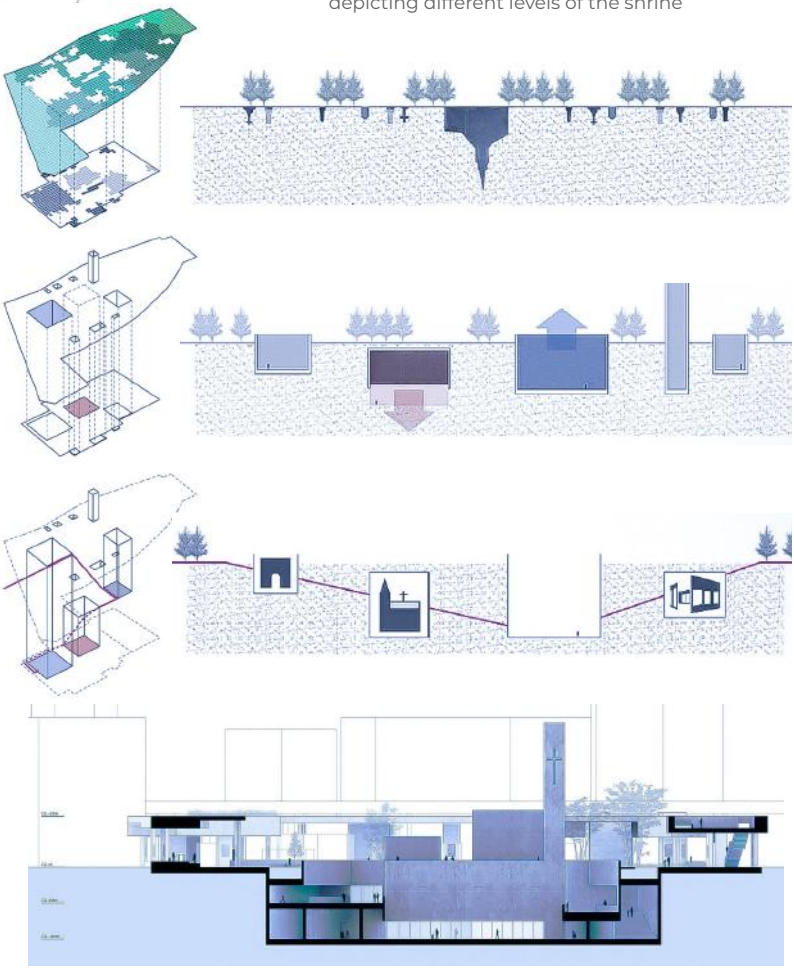


Fig 3.2: Floor Plans



The section shows the two large recreational voids carved out of the museum's mass. These voids serve as multipurpose spaces and are strategically placed to break up the solid mass of the underground structure, allowing natural light to penetrate deep into the building and providing open areas for public gatherings, exhibitions, and events.

Fig 3.3: Axonometric View and Sections depicting different levels of the shrine



Material and Texture:
The most prominent feature of the facade is its use of red brick, a material chosen for its historical connotations and its ability to evoke a sense of timelessness.

Complementing the brickwork is the use of exposed concrete, which adds a modern, industrial edge to the facade. The concrete surfaces are smooth and unadorned, creating a stark contrast with the warm, tactile quality of the brick. This juxtaposition of materials reflects the dual nature of the museum as both a historical site and a contemporary cultural space.

Light and Shadow Play:
The facade is designed to interact with natural light throughout the day, with the brick and concrete surfaces casting shifting shadows as the sun moves. This dynamic interplay of light and shadow adds a layer of visual interest and reflects the changing nature of memory—constantly evolving, yet rooted in the past.

The red brick facade stands out against the blue sky, creating a striking visual contrast that draws attention to the building while still maintaining its solemnity. This contrast between the earth-toned bricks and the vibrant sky serves as a visual reminder of the museum's purpose—to remember the past while looking towards the future.







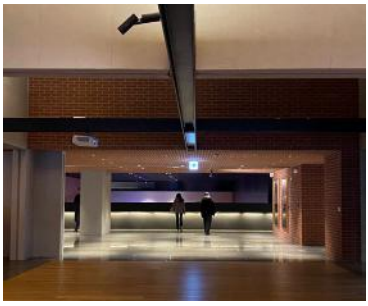
Fig 3.4: Different Zones



Fig 3.5: Stairs connecting the underground levels



Fig 3.6: Two large chunks extruded out, creating voids used as a multipurpose space.



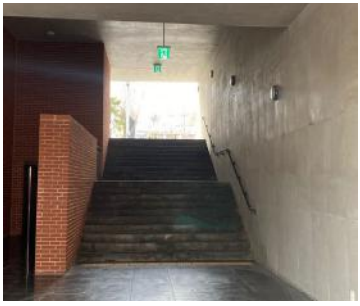


Fig 3.7: The use of red brick in some spaces evokes a sense of timelessness.



Fig 3.8: Light entering the passage through the open to sky roof

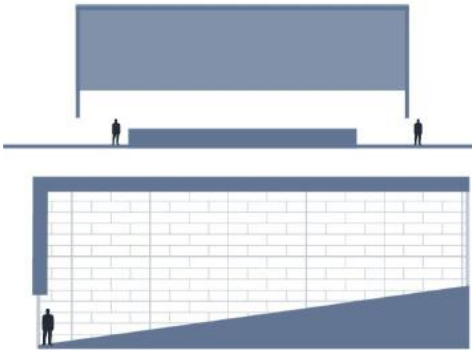
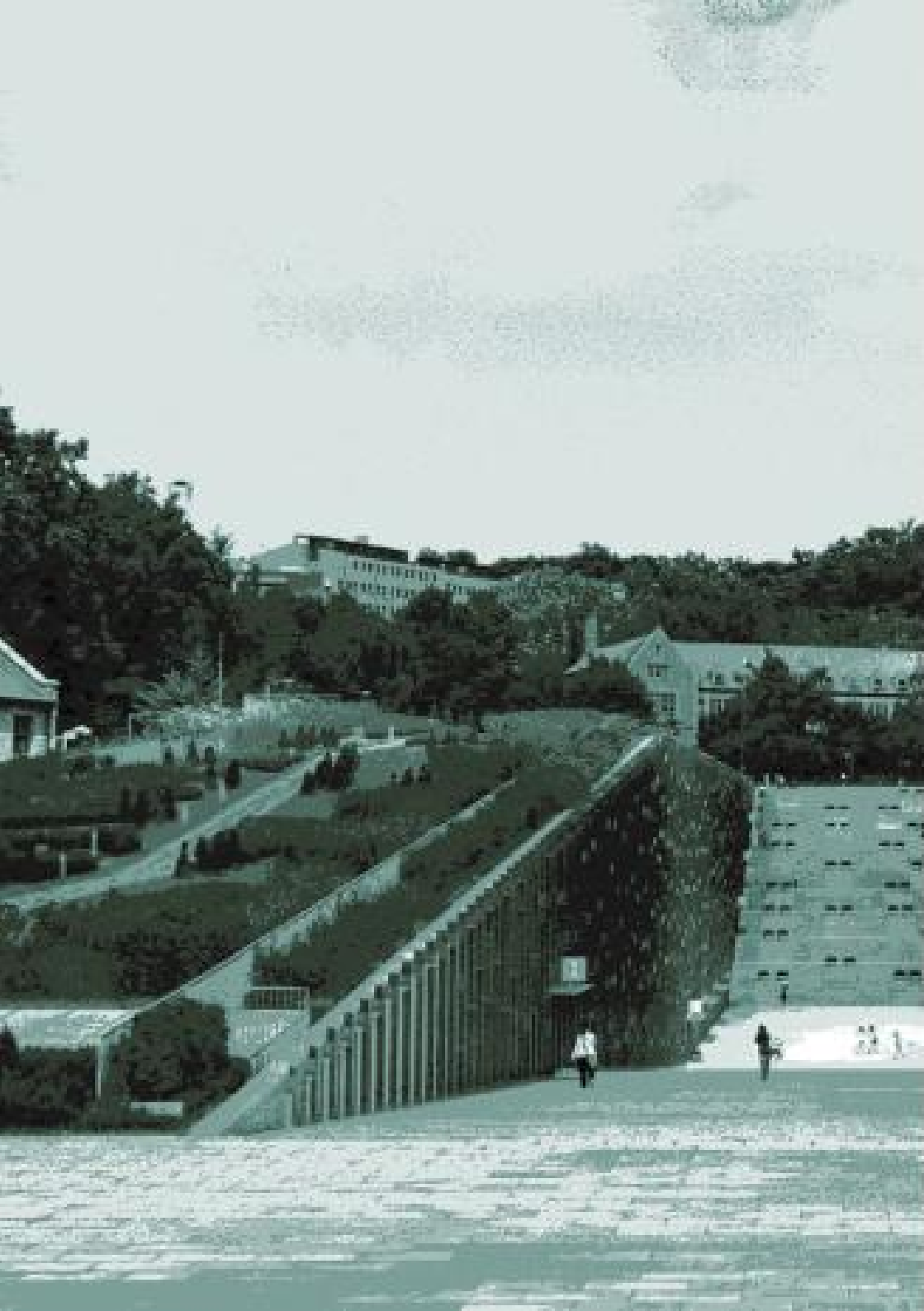


Fig 3.9: The ceiling of the Consolation Hall is recessed to give a sense of introspection



EWHA WOMENS' UNIVERSITY

Coordinates	:	37°33'35"N 126°57'10"E
Architecture Firm	:	Dominique Perrault Architects
Site Area	:	70000 m²
Completion Year	:	2008



EWHA WOMENS' UNIVERSITY

A Distinctive Landscape of Learning and Architecture

Ewha Women's University, situated in the Seodaemun-gu district of Seoul, near the Sinchon area in South Korea, is renowned for its striking architecture that blends traditional Korean elements with modern design concepts. Founded in 1886 by American missionary Mary F. Scranton, Ewha is one of the world's largest female educational institutions, covering an area of 70000 square metres.
The centerpiece of the university is the Ewha Campus Complex (ECC), designed by renowned architect Dominique Perrault.





Fig 4.1: An aerial view of Ewha Womans University in Seoul, showcasing the underground campus center by Dominique Perrault Architecture. The design smoothly integrates with the surrounding landscape, creating a harmonious blend of nature and modern architecture.

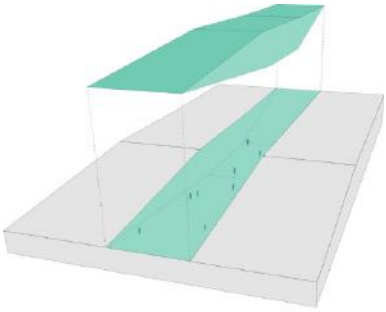


Location and Accessibility:
Located at 52 Ewhayeodae-gil in Seodaemun-gu, Seoul, Ewha Womans University is a pivotal part of a vibrant academic area, enriched with nearby cafés and bookshops. The area is buzzing with the youthful energy of Sinchon-dong and cultural events, complemented by the nearby Severance Hospital which adds a medical educational presence.

Orientation:
This architectural gem delves below the surface, quite literally, with its innovative underground design that naturally keeps the interiors comfortable, significantly cutting down on energy usage. Light pours into this subterranean marvel through a striking, valley-like corridor and strategic skylights, illuminating the vast spaces below without constant reliance on artificial light. Air flows freely through the complex, thanks to a design that encourages natural ventilation, ensuring a fresh and vibrant learning environment. Completing the green canvas are landscaped terraces and gardens, offering pockets of tranquillity and coolness.

Concept:
The architecture layout consists of the “campus valley”, in combination with the “sports strip”, creating a new topography which impacts the surrounding landscape. The valley was designed as an extension to the existing university in order to weave the old university with the city.

Structural & Facade System:
The structural design of Ewha Women’s University campus is anchored by a sophisticated insulated glazed wall system, supported by an aluminium framing structure clad in polished stainless steel. This system is distinguished by its perpendicular vertical fins, which not only provide stability but also allow natural light to penetrate the lowest interior levels. The curtain wall, with its continuous expanse, is subtly punctuated by intermittent doorways marked by bold graphic numerals, introducing minimal yet effective alterations to the otherwise seamless facade. Above the binary structure, a green roof partially conceals the expansive building footprints, blending the architecture with its natural surroundings.



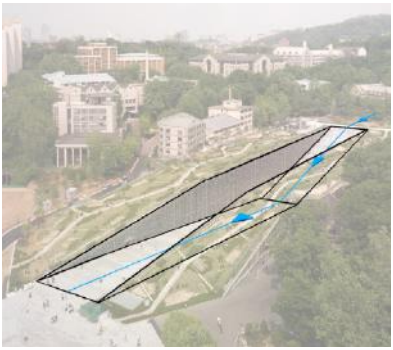


Fig 4.2: A long asphalted strip, delineated at one end, and completely surrounded by nature (creates a void leading to ideal space for communal engagement).



Fig 4.4: The design of the plaza is such that creates an alley inducing focal point and a linear mobility.



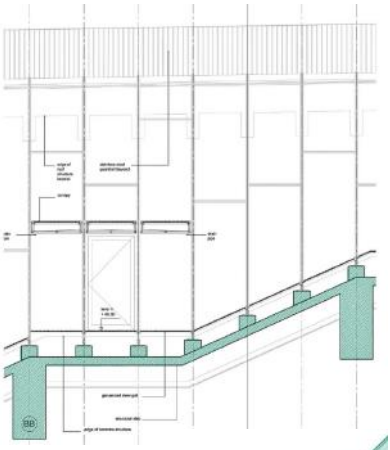


Fig 4.4: (top) Section/ Elevation of Valley Facade **(right)** Detail of the glass facade.

1. aluminum profile
2. polished stainless steel flat
3. polished stainless steel fin
4. insulated glass unit
5. spliced aluminum profile bolted to interior steel reinforcement-splice in fin
6. splice in fin align with closest bolt in flat
7. polished stainless steel plate
8. slotted hole for vertical differential movement between aluminum and stainless steel
9. flush threaded stainless steel bolt
10. polished stainless steel fin
11. flush threaded stainless steel bolt fin/bracket connection
12. blocking inside horizontal profile
13. loose dovetail connection
14. polished stainless steel horizontal bracket
15. flush threaded stainless steel bolt fin/bracket connection
16. galvanized steel grill
17. aluminum profile

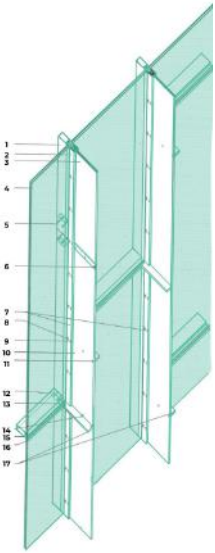
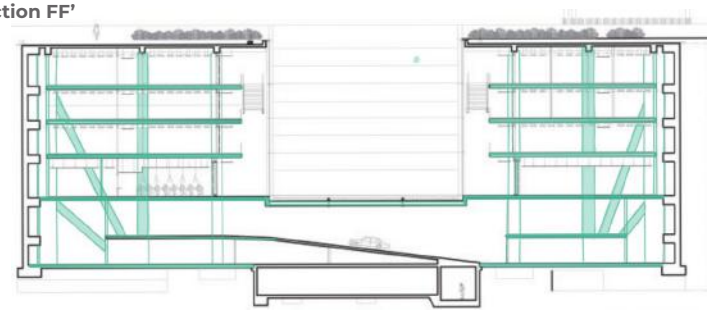


Fig 4.5: (below)
Large atrium space that runs vertically through the building, connecting its various levels and fostering visual and spatial continuity.

Section FF'



Energy Efficiency:
Ewha Women's University's building services emphasize sustainability and energy efficiency. The green roof enhances thermal insulation, promotes biodiversity, and aids storm water management. Passive heating is optimized by sunlight during winter, while the building's thermal insulation and thermal labyrinth system ensure stable indoor temperatures and efficient energy use.

Rainwater collection from the roof and valley is used for toilets and irrigation, reducing water consumption. The compact form of the building minimizes heat loss, and natural lighting from the valley reduces the need for artificial lighting. Natural ventilation is facilitated through operable windows, and a combined heat and power plant (CHP) efficiently provides electricity and heat. Overall, these systems highlight the university's commitment to sustainable design.

Circulation & Layout :
The layout of the Ewha Women's University campus centre is designed to accommodate both active and quiet spaces. As one ascends within the building, the atmosphere becomes progressively quieter, reflecting the centre's dual function as both an academic and social hub. The upper levels are predominantly study areas, offering formal, monitored library spaces with reserved carrels and desks, as well as informal zones with couches where students can gather in small groups. A large open staircase connects the upper and lower levels, running parallel to the glazed curtain wall. This staircase is a focal point for student movement, especially during cold weather when the outdoor "valley" may seem less inviting. The building's plan is further enhanced by gravity-based drainage systems that manage heavy monsoon rains, with snowfall requiring manual clearance from the exterior passageways.

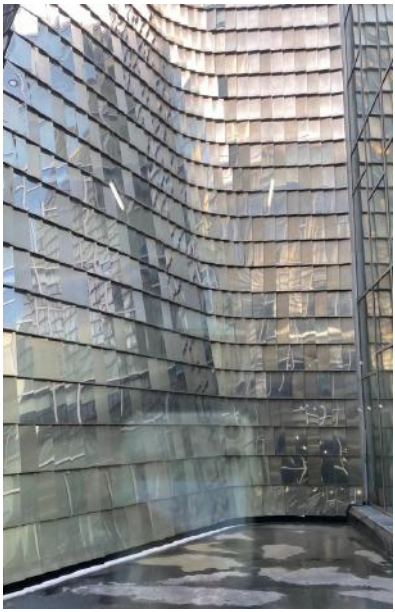


Fig 4.6: A retaining wall with mirrored stainless steel fins, it acts like a reflective surface and provides the interior with natural light throughout the day.



Fig 4.7: The space provides visual connection through all the floors.

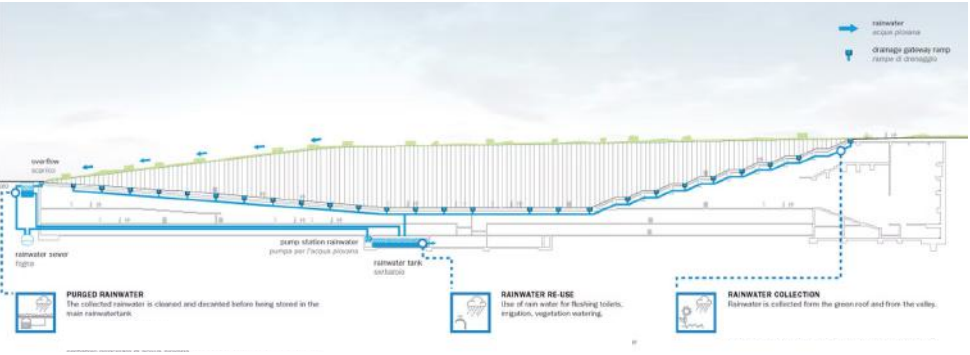


Fig 4.7: Diagram showing the Rainwater collection system.

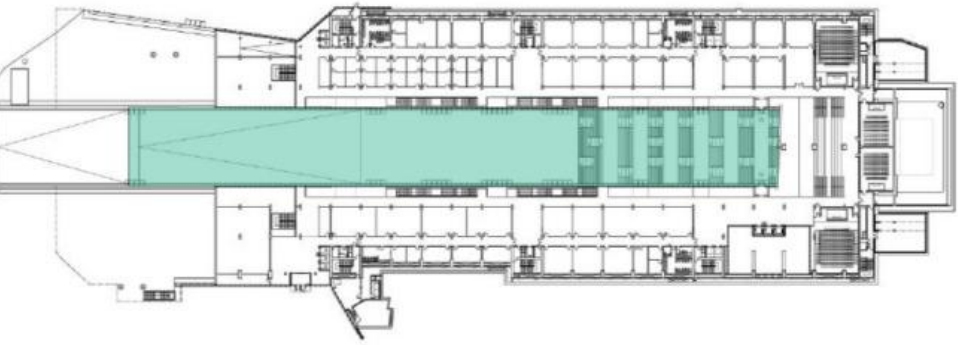


Fig 4.8: PAR (Plan Aspect Ratio) Plan highlighting the large chunk of the corridor analysed.

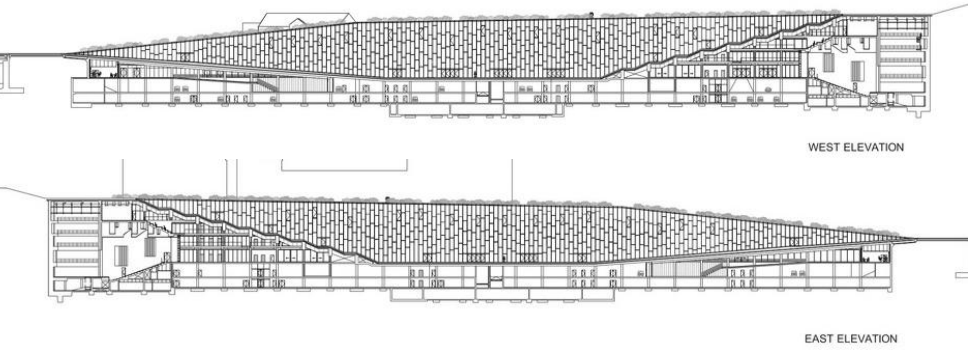


Fig 4.9: West and East elevation of the Valley.



WAR MEMORIAL OF KOREA

Coordinates	:	37°32’11”N 126°58’37”E
Architect	:	Lee Sung-gwan
Total Floor Area	:	63,000 m²
Completion Year	:	1995



WAR MEMORIAL OF KOREA

Echoes of the Past, Lessons for the Future

The War Memorial of Korea is located in the former Army Headquarters in Yongsan, which was a strategic military location, and opened on June 10, 1995. The 20,000 square metres space of the War Memorial was designed by architect Lee Sung-gwan under the two concepts of a memorial hall for paying tribute and displaying exhibits, as well as an urban park. Peace Plaza is a circular central square and symbolises the sanctity of the heavens. The flags on the left and right of the inner part of Peace Plaza represent the 21 countries that participated in the Korean War. The War Memorial of Korea in Seoul is both a memorial and a modern museum about Korea's history of War.

The War Memorial stands as a monumental complex with multiple exhibition halls each dedicated to remembering the Korean War and showcasing the country's military history.



The Korean War Monument features two towering columns mirroring the Sehyung Bronze Dagger, symbolizing both the enduring martial spirit of the Korean people and their resilience to thrive despite adversity.

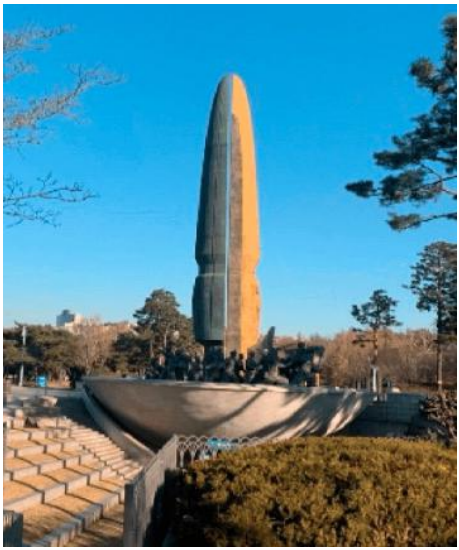


Fig 5.1: The Korean War Monument



Location and Accessibility:
The War Memorial of Korea is located in Yongsan - gu, Seoul. It is situated near the base of Mount Namsan and is one of the largest war memorials in the world. This memorial is located in one of the most administrative dominant districts in Seoul, with the Office of President of Korea, US Embassy and UN Command Honour Guard within a km away.

History:
The concept for the War Memorial of Korea originated in the 1960s, with the need to create a space to honour those who sacrificed their lives for the country. However, it wasn't until after the Seoul Olympics in 1988, under President Roh Tae-Woo's leadership, that the plan gained momentum. The War Memorial of Korea Association Act was enacted in 1989 to oversee the construction and operation of the memorial. The site was carefully chosen at the intersection of the Yongsan business district and a former US military base, reflecting Korea's complex history. The Memorial was completed in 1994, embodying the dual goals of commemoration and education, covering the entire history of war in Korea from prehistoric times to the modern era.

Structural System:
The main entrance is marked by a curved pathway differentiating from the straight lines of the columns.
The roof is made using glass and steel. Trusses have been used as the structural system of the roof so that it is lighter in weight and can create large span to form the linear atrium. Rectangular concrete columns support the Central Atrium, whereas cylindrical columns support the cantilevered roof at the entrance.

Architectural Elements:
Unlike traditional staircases enclosed within walls or covered by ceilings,a separate fire exit staircase is exposed and integrated into the interior design of the building. Its open construction allows for unobstructed views of the surroundings and creates a sense of connection between different levels of the memorial.
Throughout the day, the interplay of light through the atrium roof creates dynamic patterns and shadows, these ever-changing light patterns animate the space, infusing it with a sense of vitality and movement. The presence of dome serves as a powerful visual and symbolic element within the memorial, enriching the visitor experience with the oculus of the dome which lets in light.



Fig 5.2: Rectangular columns in the atrium.

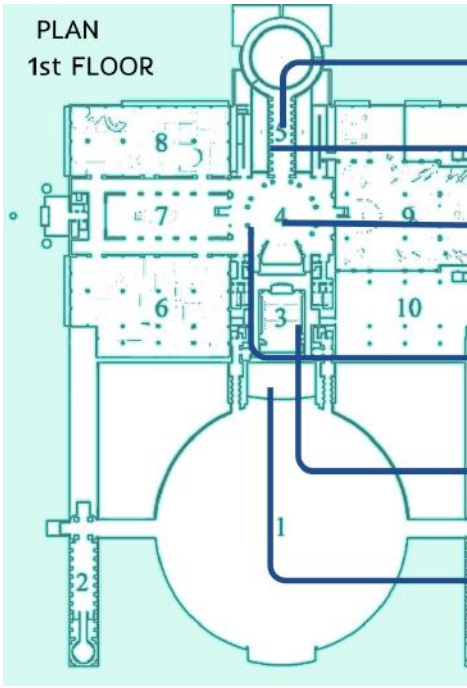


Fig 5.3: Plan depicts the structural elements present.



Fig 5.4: Cylindrical columns at entrance.

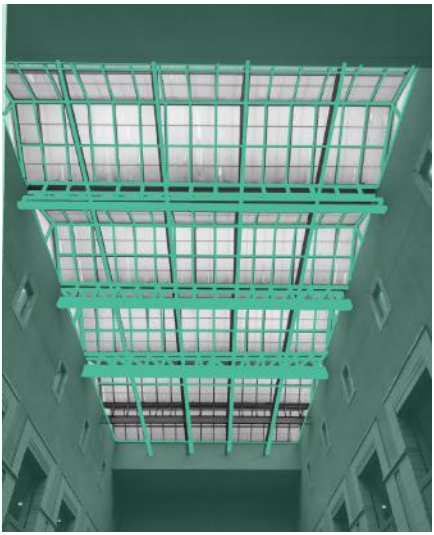
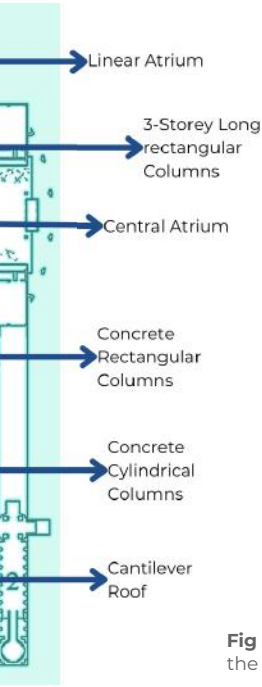


Fig 5.5: Steel roof with glass covering.



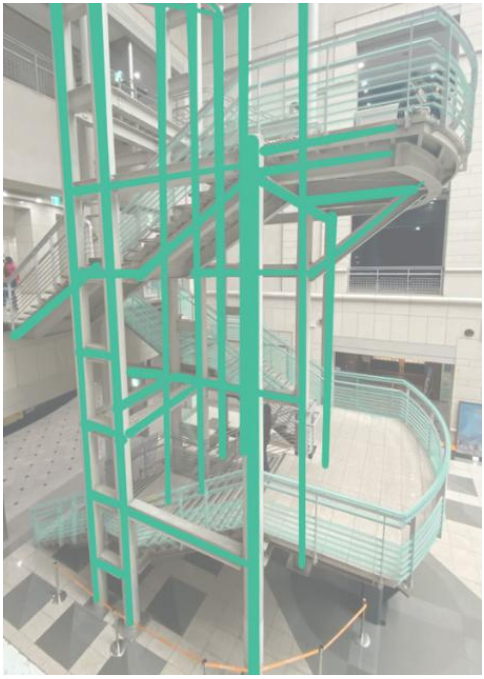


Fig 5.6: Steel staircase in the second atrium.

Emotion of Spaces :
The War Memorial of Korea is designed to evoke deep emotional responses through its spatial arrangement and sensory experiences. The use of granite in the façade gives a sense of stability and massiveness to the building, reinforcing its monumental character. Visitors are guided through spaces that gradually increase in depth and significance, culminating in the Memorial Hall, where the highest level of commemoration occurs. The design's four-way frontality ensures that the building responds to its urban and natural surroundings, creating a strong visual and emotional connection with the history it represents. Each path within the memorial offers a different sensory experience, whether it is the sombre reflection in the Memorial Hall or the awe-inspiring displays of large military equipment. The layout and materiality of the space are designed to amplify these emotions, making the War Memorial a powerful place of remembrance.

Circulation:
The site is divided into two primary areas: one adjacent to the former US military base for outdoor exhibitions and rest, and another near the Yongsan business district for parking and other facilities. Visitors enter through the main gate on the southern side, where a memorial monument immediately sets the tone for the visit. The main axis directs movement from the entry square through the memorial plaza and inner plaza, ultimately leading to the Memorial Hall on the second floor. This central path is significant as it represents the commemorative journey, while two additional paths on either side bifurcate to offer disciplinary experiences—one focusing on the history of wars and the other on military equipment.

The exterior design and facade are characterized by firmness, stability, and massiveness that result from the use of granite as construction material, geometric composition, and symmetric shape.



Fig 5.7: The main entrance is marked by an imposing staircase and expansive plaza.



Fig 5.7: To the left and right of the War Memorial is the Monument of KIA (Killed in Action) in an open-square shape.



Fig 5.8: The Peace Plaza is a circular central square and symbolizes the sanctity of the heavens.

1. Memorial Plaza
2. The Roll of Honor
3. Auditorium
4. Lower Central Hall
5. Transitional Space
6. War History Room I
7. Inner-Plaza
8. War History Room II
9. Exhibition of Large Military Equipment
10. Temporary Exhibition I
11. Main Hall & Info.
12. Memorial Hall I
13. Memorial Hall II
14. Memorial Hall III
15. Korean War Room I
16. Korean War Room II
17. Temporary Exhibition II
18. Academy for Education Programs
19. Korean War Archive Center
20. Korean War Archive Lab
21. Korean War Room III
22. Exhibition Hall for Donated Artifacts
23. Cinema
24. Expeditionary Forces Room
25. ROK Armed Forces Room

ENTRY POINT
MEMORIAL AREA
ANCILLARY FACILITIES
PRIVATE AREA

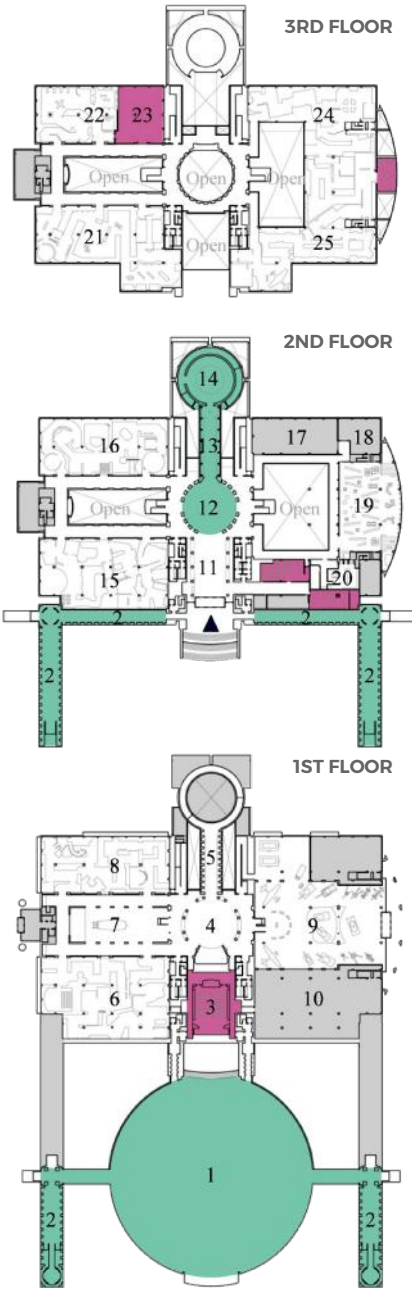


Fig 5.9: Floor Plans



AMOREPACIFIC HEADQUARTERS

Coordinates	:	37°31’43”N 126°58’07”E
Architecture Firm	:	David Chipperfield Architects
Total Area	:	216000 m²
Completion Year	:	2017



AMOREPACIFIC HEADQUARTERS

Cuboidal Form with Sculpted Spaces

Founded in 1945, Amorepacific is South Korea's largest beauty and cosmetics company and a major player in the Asian market. In late 2017, the company relocated to its new headquarters in central Seoul, a site they have occupied for over 60 years. The new 110m tall building is an elegant cube with a courtyard at its core, partially glazed to illuminate the atrium below.

Drawing inspiration from traditional Korean courtyard architecture, the design emphasizes energy efficiency and well-being. The building is punctuated by three large openings on the 5th, 11th, and 17th floors, landscaped with gardens and terraces. These openings connect to the inner courtyard, which includes a reflecting pool, allowing natural light and ventilation to permeate the building and offering dramatic views across Seoul.

The building's facade, with its horizontal louvers and vertical fins, contributes to its LEED Gold certification by enhancing energy efficiency and reducing heat load.





Fig 6.1: The building features a cuboid form with sculpted spaces, creating a dynamic and visually striking profile.



Location:
The AmorePacific headquarters is located at 100 Hangang-daero, Yongsan-gu, Seoul. It is situated approximately 400 meters from the Yoongsan History Museum and about 1200 meters from the banks of the Han River. This central location places the building in proximity to significant cultural and natural landmarks in Seoul.

Orientation:
The building's orientation takes full advantage of its surroundings. The prominent facade features horizontal louvres strategically placed to filter sunlight and reduce glare. The central courtyard and urban openings are oriented to maximise natural light and ventilation while offering panoramic views of the city and nearby mountains. This design approach enhances the building's connection to its environment and promotes a sense of openness and integration with the urban landscape.

Structural System:
Reinforced concrete cores that house vertical circulation elements such as elevators, staircases, and service shafts are used. These cores are crucial for the building's lateral stability, providing resistance to wind and seismic forces. Mega columns are strategically placed to support the building's structural integrity. Their sheer size and presence emphasize the building's strength and stability, making them a key visual element in the overall design. Their placement allows for large open spaces, such as the central atrium and large floor plates, by minimizing the number of interior columns required.

Facade System:
The building's 52° north-south orientation exposes all sides to direct sunlight, with the south-east and south-west façades receiving the most solar exposure. To reduce energy consumption and manage solar heat gain, the design team implemented vertical fins forming a brise-soleil, connected to the building by accessible walkways that wrap around all elevations. These fins, about 1,150 in total, vary in depth (450mm to 200mm) and are strategically arranged based on the building's orientation and sun exposure.

Arup optimised the fins through daylighting and structural testing, tailoring their size and pattern to each facade. Shallow fins were placed on the less-exposed north-east and north-west façades to maximize natural light, while deeper fins on the south-east and south-west façades provided more shading. Wind tunnel tests further refined the fin design, resulting in an aerofoil shape with 3mm protrusions to reduce wind deflection and vibration, enhancing structural robustness.

Coffer slab is used for large spans of floor space without the need for numerous support columns, which is essential for the open-plan layouts. By reducing the volume of concrete required, coffer slabs are not only lighter but also more material-efficient, contributing to the sustainability of the building. The grid pattern of the coffer slab is often left exposed contributing to the building's industrial aesthetic.



Fig 6.2: Mega Columns



Fig 6.3: Use of coffer slab and ambient lights

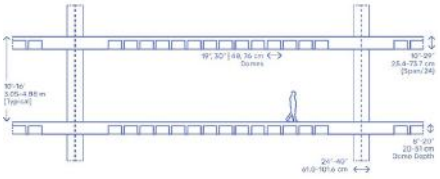
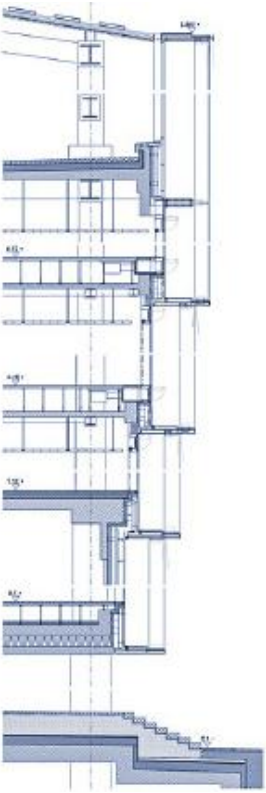


Fig 6.4: Coffer Slab Detail





Fig 6.5: The design of the facade **(left)** is inspired by the traditional korean hanji doors **(right)**.



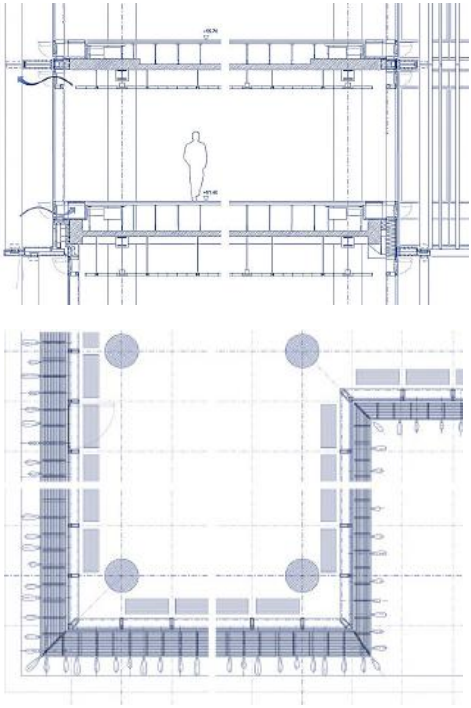


Fig 6.6: Facade details and sections

The facade features two layers working in unison—a diaphanous brise-soleil cladding that provides shading and reduces heat load, and an inner glass layer that allows natural light to penetrate the interior spaces.

Layout Scheme:
The building adopts a straightforward square layout, with primary functions positioned along the perimeter. This design maximises the use of space and allows for flexible interior configurations, accommodating various needs such as open-plan offices or partitioned workspaces.

Centralised Services:
The floor plan strategically places service cores (housing elevators, staircases, and mechanical systems) on either side of the main entrance. These cores are essential for the building's functionality, providing easy access to utilities and vertical circulation.

Energy-Efficient Artificial Lighting:
AmorePacific's diverse brand portfolio required a flexible lighting solution for its multi-brand facility. DCA and Arup responded with an innovative, sustainable luminaire system that prioritises adaptability and minimal waste. The system features a single luminaire body with interchangeable optical lenses, offering 12 different light distributions in up to 30 combinations. This approach contrasts with conventional methods, which rely on multiple products from various manufacturers.

The optical lenses use micro-lenses to produce wide, medium, oval, or narrow light distributions through a combination of reflection and refraction. Available in recessed, surface-mounted, adjustable, and pendant versions, the system adapts to diverse lighting needs while complementing the architecture.

Designed for longevity, every component is replaceable, allowing future modifications without compromising the ceiling's appearance. The system is patented by the design team and manufactured by Viabizzuno.

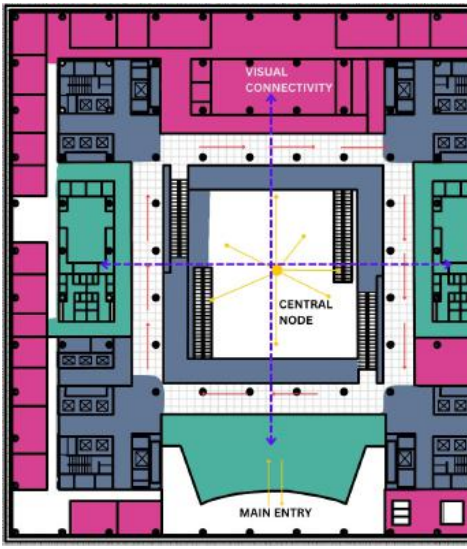


Fig 6.7: Ground Floor Circulation Plan

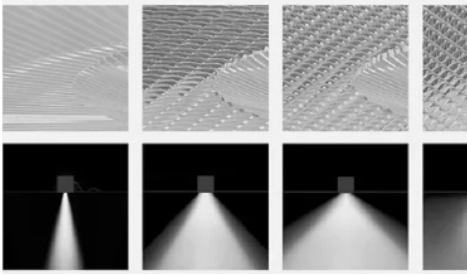
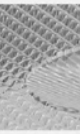


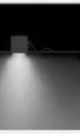


Fig 6.8: Modular LED System offers various light distribution performances for different spaces, ensuring optimal lighting conditions and energy efficiency.

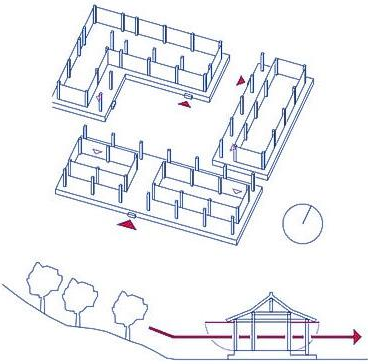


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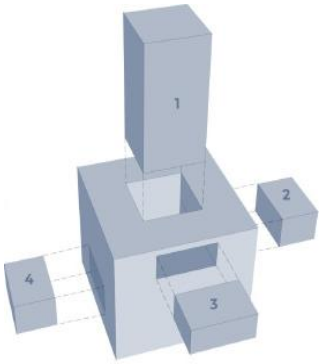


Fig 6.9: Inspired by traditional Korean architecture, the building connects interior and exterior spaces while enhancing ventilation with large openings on the 5th, 11th, and 17th floors.

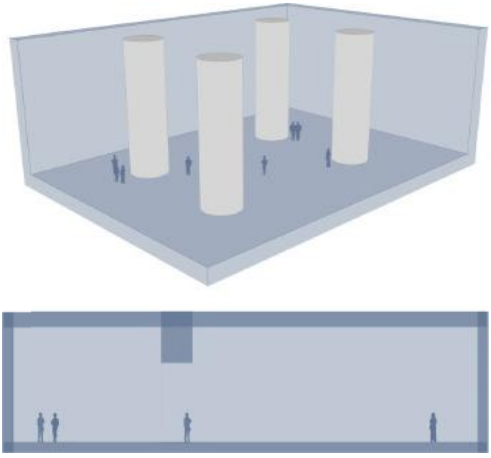


Fig 6.10: Diagrammatic views of the museum space in the basement



17th Floor



11th Floor



5th Floor

The gallery's design uses the interplay of walls and columns to direct focus towards the artwork. Large columns contrasted with small circulation spaces create an intriguing environment, encouraging visitors to explore the exhibition more deeply. This architectural arrangement subtly guides movement and frames views, enhancing the art viewing experience.

Space and Zones:
Public and Private Spaces: The lower levels are primarily public, housing amenities such as galleries, restaurants, and retail spaces. The upper levels are reserved for office spaces, providing privacy and a focused work environment for employees.

Central Atrium: The central atrium serves as the heart of the building, providing a focal point around which the entire layout is organized. This space enhances visual connectivity between different levels and creates a sense of openness and grandeur.

Integration of Nature: The building incorporates verdant terraces and roof gardens, which are visible from various floors. These green spaces are not just aesthetic features; they are integral to the building's environmental strategy, providing natural cooling and creating peaceful retreats within the urban environment.

The roof gardens are a symbol of Amore Pacific's commitment to innovation and sustainability. The gardens offer panoramic views of the surrounding cityscape and the distant mountains. These views provide a sense of orientation and connection to the broader environment, reinforcing the building's role as a central and iconic structure in Seoul.

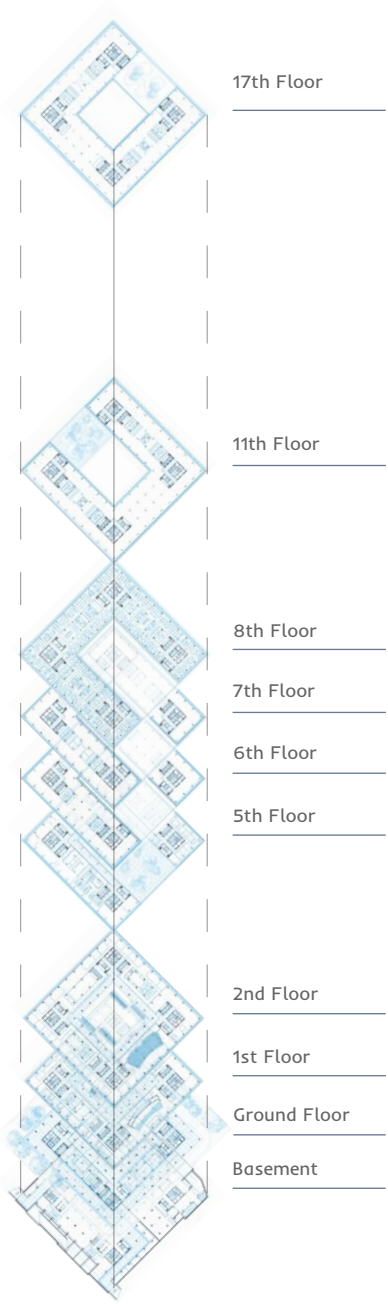


Fig 6.11: Axonometric View



Fig 6.12: Isometric Section showing zoning.





Fig 6.13: Views of the central courtyard.



NATIONAL MUSEUM OF KOREA

Coordinates	:	37°52’39”N 126°98’05”E
Architecture Firm	:	JUNGLIM
Area	:	49,117.38 m²
Completion Year	:	2004



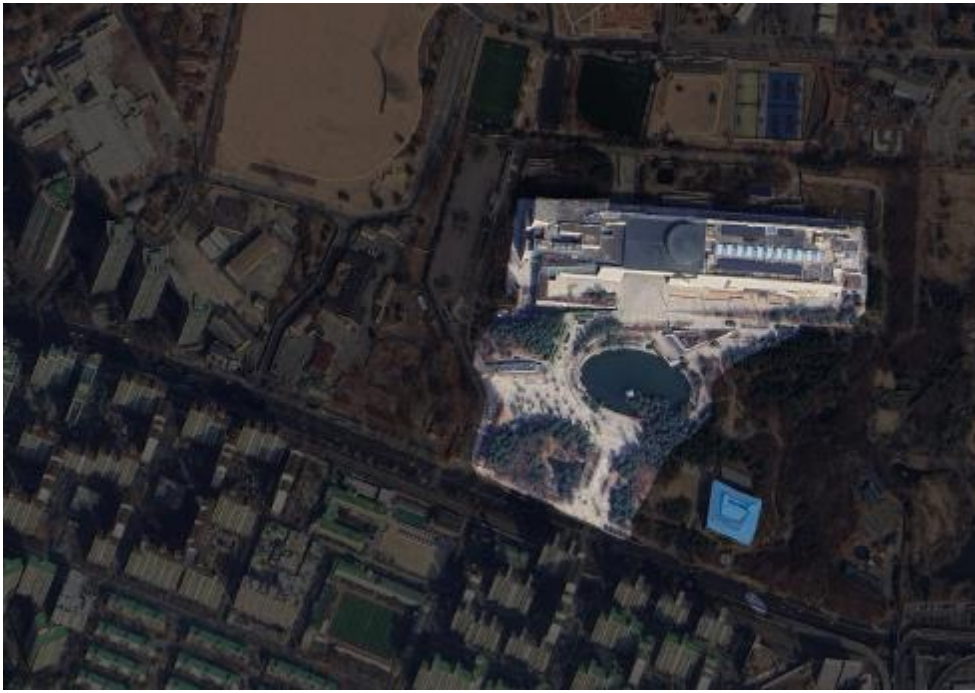
NATIONAL MUSEUM OF KOREA

A Journey through Timeless Art, History and Culture.

The National Museum of Korea's building, which adheres to traditional Korean architecture, is tucked away far from the lot's edge. With mountains in back and water in front, the museum faces south. Built in a plot area of 295,550.69 square meters with the building area of 48,644.47 square meters, the museum is a Steel frame structure along with reinforced concrete construction and has a height of 43.08 meters.

The building plan for the museum starts with the idea of Namsan Mountain and Mirror Pond as a secure and tranquil stronghold situated between mountains and water. The sturdy fortress represents the feeling of safety and tranquilly that keeps us protected while generating the anxiety of being cut off from the outer world.

The surrounding green spaces provide a peaceful escape but also contribute to cooling the area, making the museum a green oasis in the city.



This design choice conveys a sense of majesty and importance, reflecting the museum's role as a custodian of Korea's cultural heritage.



Fig 7.1: Circular glass entrance.



Location and Accessibility:
This museum is located in Yongsan - gu, Seoul. 1km to south is Han river flowing, while 1km to North is the War Memorial of Korea. The Hangeul Museum is hardly 20m from the entrance of the Museum. The Office of President of Korea is at distance of 600m from our site. Thus, this site is located in the administrative centre of Seoul.

Orientation:
Its smart design ensures natural light across its spaces, reducing the need for artificial lighting, while protective overhangs safeguard invaluable artifacts from the sun's intensity. The museum's walls, a blend of thermal materials, keep its climate steady, essential for preserving a rich historical legacy. Possibly dotted with green roofs, the museum not only insulates itself naturally but also manages rainwater efficiently, creating lush, tranquil spots amidst the urban landscape. Advanced ventilation systems circulate fresh air, enhancing comfort and energy efficiency, alongside water conservation practices that reflect a deep commitment to sustainability.

Emotion of Spaces :
The majestic exterior of the museum invites visitors into a world where history is both preserved and revered. Inside, the museum's expansive, well-lit galleries adorned with natural materials, like wood and stone, create a warm and contemplative atmosphere. Each room, grand in scale with high ceilings, offers a continuous learning journey through different eras, enhancing the visitor's experience with a sense of discovery and awe. Positioned strategically, the museum also offers breathtaking views of Seoul, adding a modern context to the historical exploration.

Sensory Perceptions:
The humongous white stone facade ensures great political dominance over the visitors. The high walls are placed well directing you to a specific rooms. Many interactive activity rooms are present for a better learning experience. The entire museum is moderately silent with pleasant music played over the speakers.



Fig 7.2: Spatial Hierarchy
Transitions in volume creating a spatial hierarchy within the building. a sense of progression and expansion is felt.

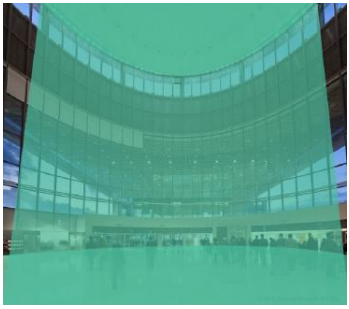




Fig 7.3: Atrium, courtyards, and open spaces, offer moments of transparency, and connection.

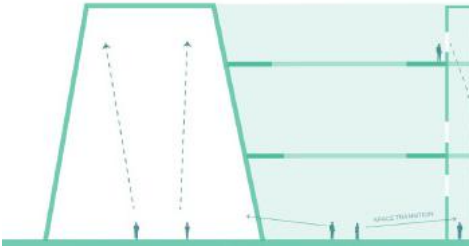


Fig 7.4: Cross-sectional representation
Triple-heighted atria (atrium) : invokes a sense of grandeur due to it's sheer size and volume. High spatial connectivity noticed due to three levels being visually linked, suggests interaction between occupants on different floors.



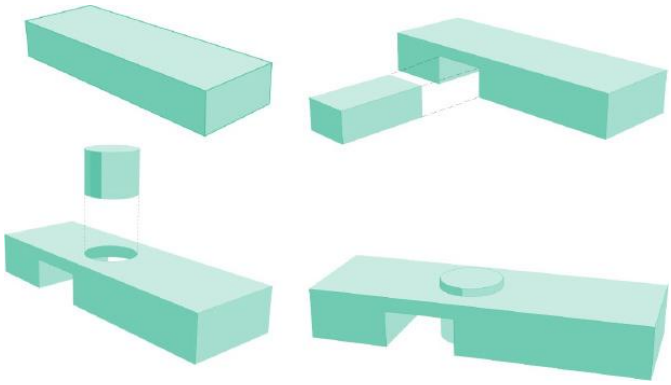


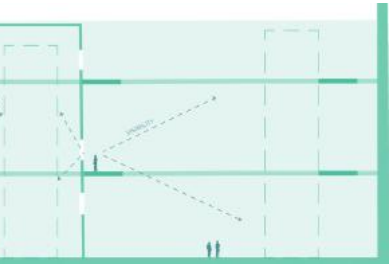
Fig 7.5: Massing representation
The sculpted space with the rotunda enhances the grandeur entrance.







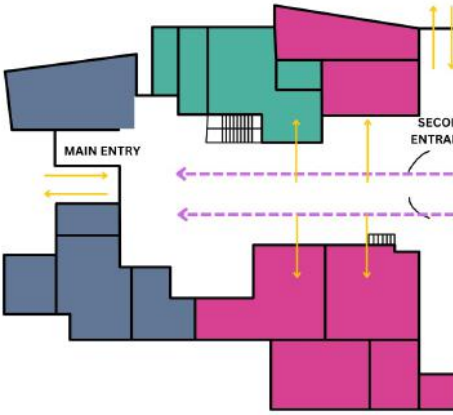
Fig 7.6: Skylights are placed strategically to introduce dynamic patterns of light and shadow.

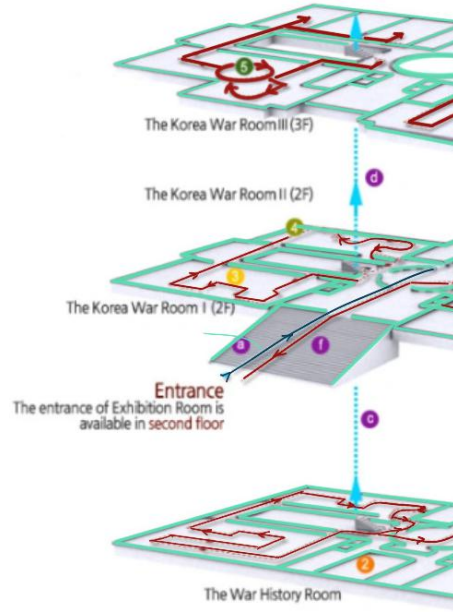


Circulation:
Circulation paths guide visitors through different collections and reading rooms. Connectivity is established through a central atrium or foyer area that connects the library's reading rooms, exhibition spaces, and thematic galleries. Clear signage and directional cues guide visitors through this interconnected space.

The layout of the national museum follows a linear trajectory, with the main attractions located on either side of the building. Circulation also unfolds in a linear fashion from the primary entrance. The atrium's central point serves as a hub for circulation throughout the entire museum, offering visual access to all levels.

The museum features a spacious and grand entrance hall that serves as the gateway to the museum's exhibition, which features dramatic architectural elements such as high ceilings and expansive windows, creating a sense of grandeur for visitors.





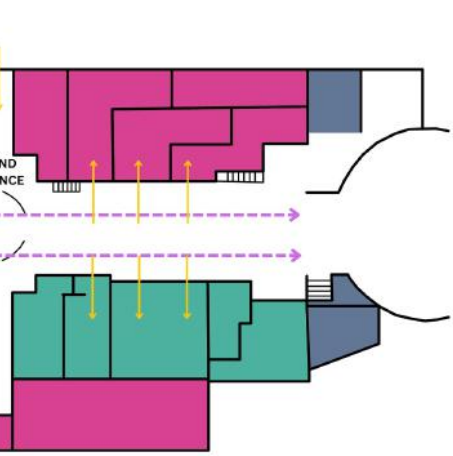


Fig 7.7: Layout Scheme
Depicts the various zones, exits and entrances.

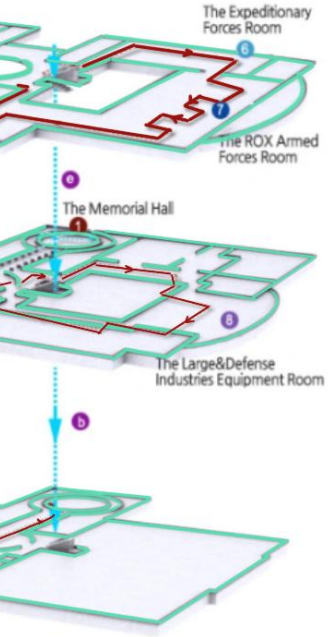


Fig 7.8: Floor Plans
Depicting access points and the various spaces in the complex.





DONGDAEMUN DESIGN PLAZA

Coordinates	:	37°33’59”N 127°00’33”E
Architecture Firm	:	Zaha Hadid, Patrik Schumacher
Total Area	:	89574 m²
Completion Year	:	2014

DONGDAEMUN DESIGN PLAZA

Place for People of All Ages

Dongdaemun Design Plaza (DDP) in Seoul stands as a beacon of modern architectural innovation, conceived by the legendary architect Zaha Hadid and completed in 2014. This iconic structure, characterized by its fluid, organic forms and sinuous curves, defies traditional architectural norms and creates a striking presence in the urban landscape of the Dongdaemun district. It is not just a building but a multifaceted cultural hub that seamlessly blends art, design, and urbanism. It serves as a vital cultural hub in Seoul, hosting a wide range of events, including fashion shows, product launches, exhibitions, and conferences. With its expansive, open spaces and dynamic interiors, DDP fosters creativity, exploration, and social interaction, making it a vibrant epicentre for both locals and visitors.

As the first building in Korea to fully utilize the advanced 3D Building Information Modeling (BIM) approach, DDP stands as a testament to cutting-edge construction techniques, redefining the possibilities of modern architecture.



The DDP site was historically significant as it was part of the ancient Seoul Fortress Wall, which dates back to the Joseon Dynasty. During the construction of DDP, relics from this period were discovered, leading to the inclusion of these historical elements into the design.

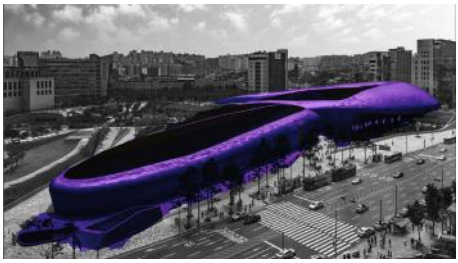




Fig 8.1: Mass on site
Highlighted mass with the surrounding and the night view



Location and Accessibility:
It is situated in the vibrant Dongdaemun district of Seoul. This area is known for its rich blend of historical landmarks and contemporary urban development. Positioned strategically, it is located within a short distance of the Seoul City Wall Museum, enhancing its connectivity with the city's historical and cultural context. DDP's design emphasizes ease of access, making it approachable from various directions. Multiple entrances are thoughtfully positioned to facilitate entry from different areas, reflecting the plaza's role as a central public space.

Orientation:
The building's orientation enhances accessibility to transportation networks and cultural landmarks, reinforcing its role as a key urban connector. The plaza's alignment also acknowledges and reflects the historical elements of the site, including the ancient city walls, while complementing the modern, dynamic character of the Dongdaemun district.

The design and construction of DDP are a testament to the cutting-edge technology employed, including advanced 3D Building Information Modelling (BIM) and the innovative Mega-Truss method, which enabled the creation of its unique structure without traditional straight lines or walls.

Structural System:
Mega Truss Method: The DDP employs a mega-truss system, a structural framework typically used for large-scale constructions like bridges. These mega-trusses provide robust support, allowing the building to span large, open interior spaces without the need for numerous columns. This results in vast, uninterrupted interior areas that enhance the fluidity and openness of the design.

Space Frame System: Complementing the mega-trusses is the space frame system, a lightweight, three-dimensional framework that distributes weight evenly across the structure. The space frame is essential in supporting the DDP's extensive curved surfaces, enabling the creation of its distinctive sinuous forms. This system also minimises the need for internal supports, maintaining the open, flowing spaces that define the interior of the plaza.

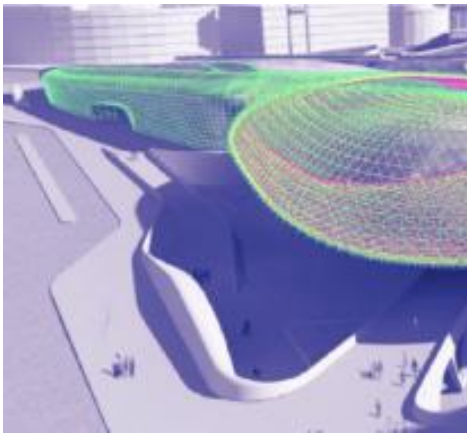
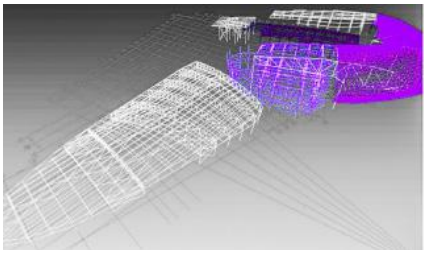
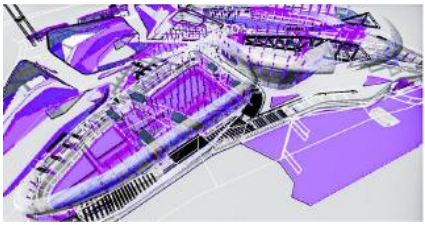


Fig 8.2: Framework
Space Frame and Mega Trusses



A



B

Fig 8.3:
A-Division of space frame in building;
B-Frame and Columns
C-Space Truss on Rhino,
D-Final Model

Integrating sustainability into the structural system, DDP utilizes a geothermal heating and cooling system. This system uses underground boreholes to regulate the building's temperature, reducing the reliance on conventional HVAC systems and contributing to the overall energy efficiency of the plaza.

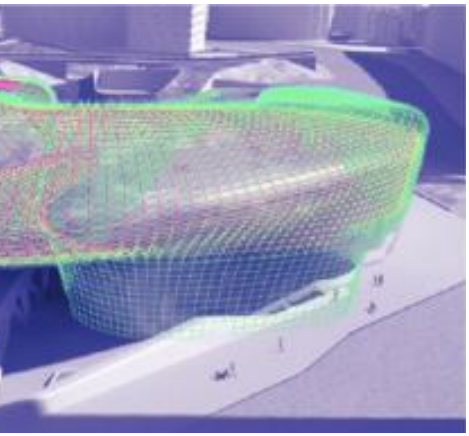
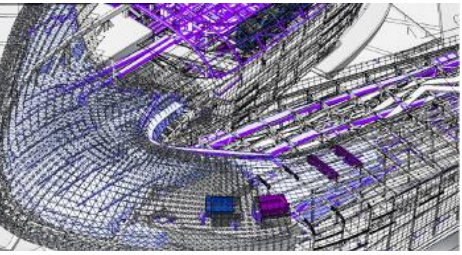




Fig 8.4:Structural Element
Mega Truss supporting the organic curves



C



D



Fig 8.5: DDP under construction, Space truss being placed on the form

Facade System:
45,133 Unique Metal Panels:
The DDP's facade is composed of 45,133 aluminium panels, each uniquely designed and fabricated to fit the building's complex curves and organic forms. The panels were created using 3D Building Information Modelling (BIM), which allowed for precise calculations of each panel's shape and size. This level of customisation was crucial in achieving the fluid, continuous surface of the DDP, which has no straight lines or right angles.

Reflective and Responsive Surface:
The facade's aluminium panels have a reflective quality that interacts with the surrounding environment, creating dynamic visual effects. As light and weather conditions change throughout the day, the facade appears to shift and evolve, enhancing the sense of movement and fluidity. This reflective quality also helps to reduce heat absorption, contributing to the building's overall energy efficiency.

Circulation:
The DDP's circulation system is designed to foster easy movement between different spaces within the building. Interior walkways, open plazas, and interconnected levels ensure that visitors can navigate the building with minimal effort. The absence of abrupt transitions between spaces encourages continuous exploration, aligning with the building's fluid form.

The facade is equipped with an integrated lighting system that enhances the building's nighttime appearance. LED lights are embedded within the joints of the panels, creating a subtle glow that emphasizes the building's curves. This lighting system is programmable, allowing for different lighting effects depending on the time of day or special events, adding another layer of dynamism to the facade.

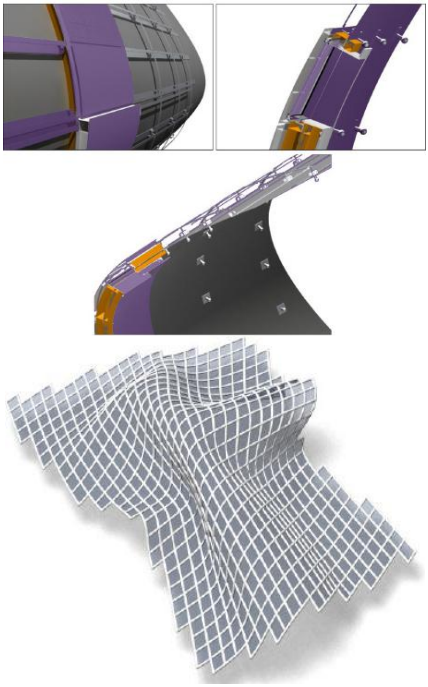


Fig 8.6: (above) Facade Components **(below)** Panel assembly iteration

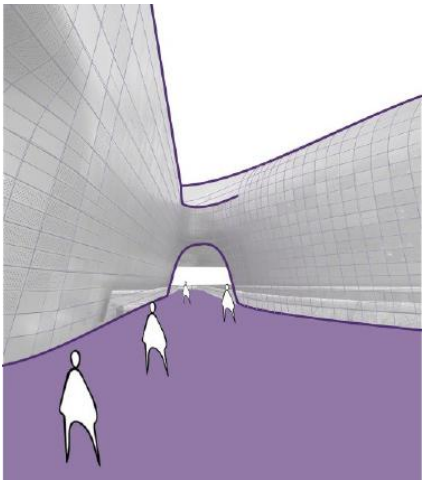


Fig 8.7: The passive spaces (Walkways) lead you to a completely new junction altogether.

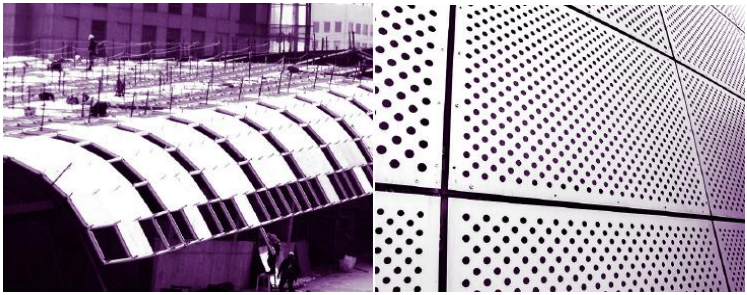


Fig 8.8: Installation of the aluminium panels on site.



Fig 8.9: The facade panels lightt up and change with weather

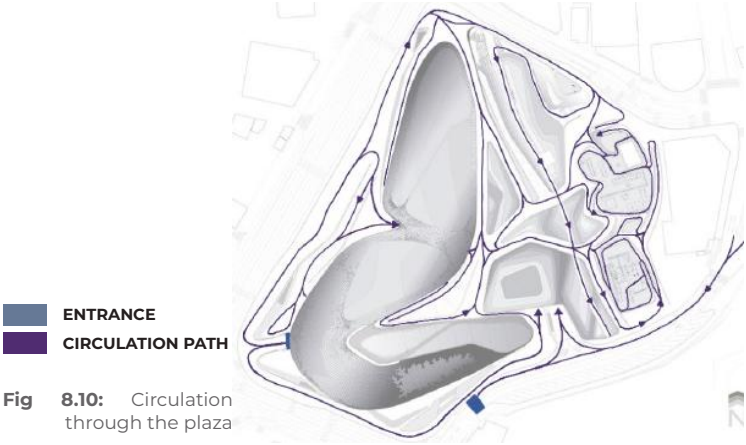


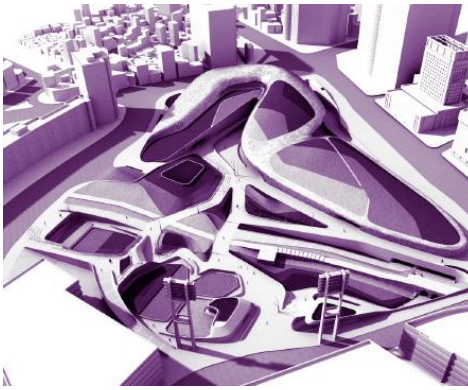
Fig 8.10: Circulation through the plaza

Material Palette:
The interior spaces feature a minimalist material palette that emphasizes the building's sculptural forms. Exposed concrete, polished stone, and metal surfaces are used throughout, creating a sleek, modern aesthetic. The use of these materials also highlights the building's structural complexity, with the raw, unfinished surfaces revealing the intricate construction techniques used to create the DDP's organic forms.

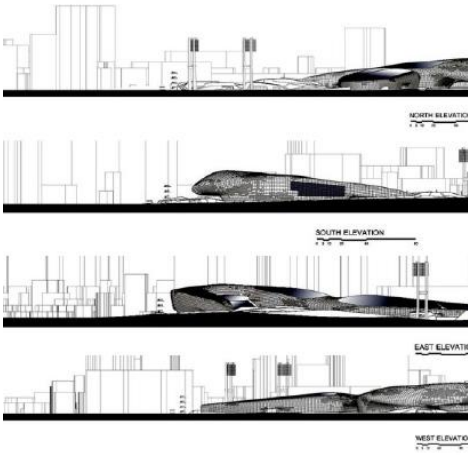
Emotion of Space:
The interplay of light, space, and form creates a unique sensory experience as visitors move through different levels. The open, flowing spaces are designed to evoke a sense of discovery and wonder, enhancing the overall experience of interacting with the building.

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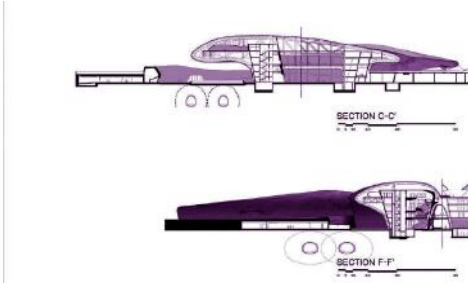
The sectional view showcases the building's complex roof-scape, which features a series of undulating curves and folds. These varying heights and angles are not merely aesthetic but serve practical functions such as rainwater collection and natural ventilation. The roof design is engineered to efficiently manage rainwater runoff, directing it to specific collection points.



TOP VIEW OF THE PLAZA



ELEVATIONS



SECTIONS

Fig 8.11: Exterior-Interior
Elevation and section of the plaza





Fig 8.12: Fluidity inside the interior spaces
Fluid curves in the staircases and ramps that create a sense of movement

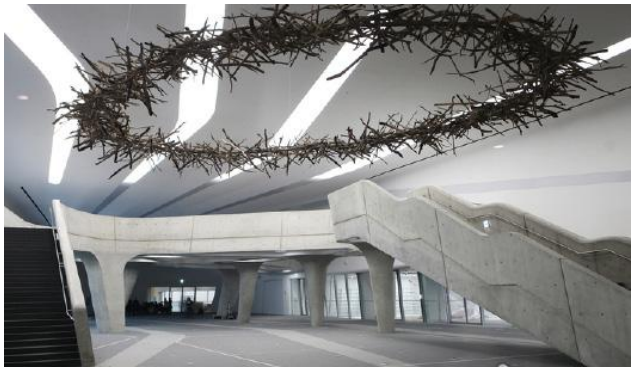


Fig 8.13: Materials used in the interior
Use of exposed concrete to balance the organic forms


송파책박물관
Songpa BOOK Museum

SONGPA BOOK MUSEUM

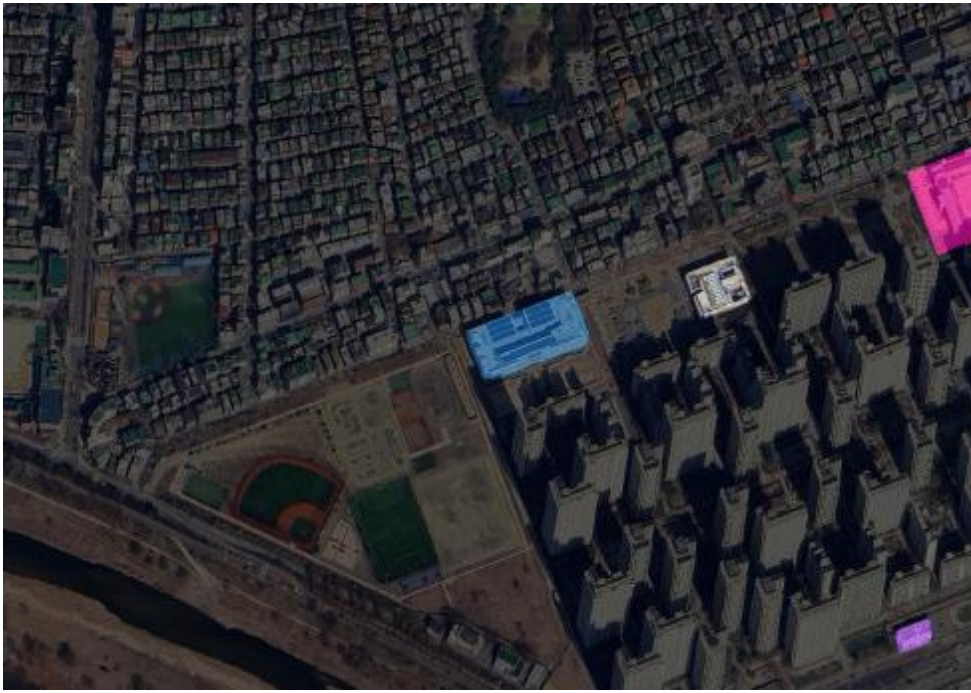
Coordinates : 37°29’56”N 127°06’16”E
Architecture Firm : Kunwon Architects
Total Area : 14,856 m²
Completion Year : 2019



SONGPA BOOK MUSEUM

More than a Library, a Literary Wonderland

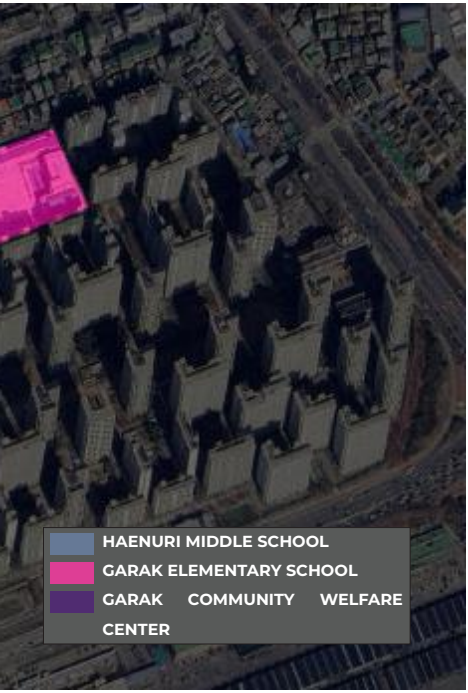
The Songpa Book Museum, located in Garak-dong, Songpa-gu, Seoul, South Korea, is an architectural masterpiece designed by Kunwon Architects and completed in 2019. The museum is conceptualized as a space where visitors can physically step into the world of books, with its design resembling the layers of a bookshelf. Serving as more than just a repository for books, the museum functions as a cultural hub, fostering connections between people and literature, and standing as a beacon of literacy and cultural exchange in the heart of Seoul. The museum is celebrated for its bibliophile-friendly spaces where books are readily accessible. In a time when the typical individual reads only ten books a year, the Songpa Book Museum aims to highlight the importance of books. The building's ethos is centered around reflecting the significance of books and creating a cultural hub promoting harmony and community interaction through a variety of programs and events aimed at advancing literacy and celebrating the written word.



From the outside, the building seems to be one continuous bulk, like a bookcase submerged in a lush garden.



Fig 9.1: Building volume highlighted with its surrounding



Location and Accessibility:
In Songpa-gu, a neighbourhood in Seoul with a low population density, Songpa Book Museum is located inside the Seokchon Alley Market in Garak-dong. Nestled within a verdant park setting, the museum offers a serene contrast to the bustling urban landscape of the city. This location, in the Seokchon Alley Market area, is not only accessible but also thoughtfully chosen to create a tranquil environment that enhances the experience of reading and reflection. The museum's placement in a sparsely populated urban zone underscores its role as a peaceful retreat for visitors seeking a connection with literature and culture amidst the fast-paced life of Seoul.

Location and Accessibility:
The museum's orientation along the north-south axis is both strategic and symbolic. This alignment optimizes natural lighting, with the building's facade adapting to the movement of the sun. The orientation also enhances the museum's connection with its surrounding environment, offering panoramic views of the park and cityscape through carefully placed windows and voids within the structure.

Facade System:
The facade of the Songpa Book Museum is a striking visual element and is designed to evoke the appearance of a bookshelf, with its homogeneous mass and layered structure resembling stacked books. The subtle vertical change of the façade's louvres, linked to the idea of layering bookshelves, suggests that this museum is always changing and moving towards the future. It also communicates with its surroundings all the time, depending on the sun's angle and time of day.

Spaces and Zones:
Reading Areas: These areas are organized to offer both privacy and comfort. The design features cosy reading nooks, with some spaces arranged in circular configurations to foster a sense of inclusivity. Playful and interactive elements, such as quirky furniture shapes, add to the inviting atmosphere.

Exhibition Hall: The museum includes both permanent and temporary exhibition halls, designed to showcase a range of literary artifacts, artworks, and interactive displays. The spaces are adaptable to accommodate different themes and formats.





The reading hall is designed with a large, open space and high ceilings that create a sense of grandeur and openness. Natural light floods the area through skylights and large windows, enhancing the bright and inviting atmosphere.



Fig 9.2: Sitting Spaces
Built-in reading nooks embedded into the walls at regular intervals.

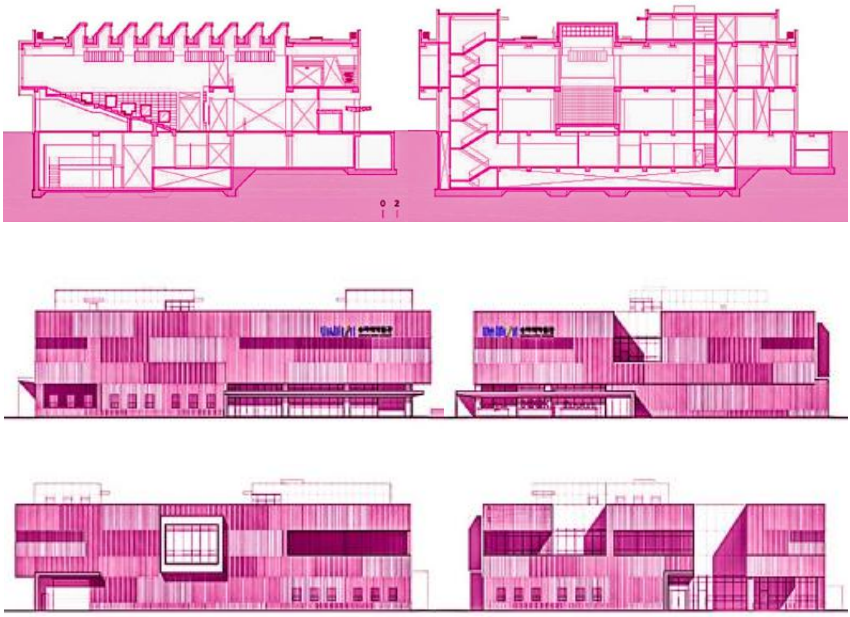


Fig 9.3: Sections and Elevations
Louvers on facade creating a distinct pattern



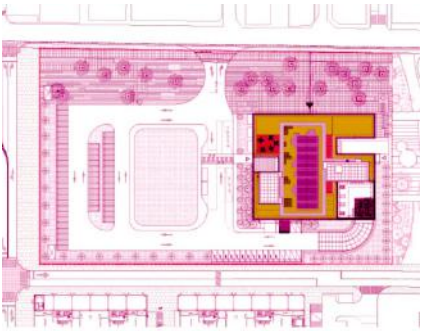


Fig 9.4: Circular Library
Cascading bookshelves and suspended pages that create a dynamic artifact

Layout Scheme:
The museum is divided into distinct zones, each serving a specific function. Key zones include the entrance and lobby, main hall, reading and study areas, exhibition halls, Harmony Hall, and the Open Studio. Each zone is planned to facilitate its intended use while contributing to the overall flow of the museum.

Material and Services:
Lighting: The integration of natural and artificial lighting is carefully planned to enhance the museum's ambiance. Skylights, LED fixtures, and adjustable lighting are used to create a dynamic and functional lighting scheme.

Flooring: High-quality flooring materials are used throughout the museum to provide durability and enhance the aesthetic appeal. Options such as polished concrete, natural wood, and soft carpeting are employed in different areas.



SITE PLAN



PRIVATE SPACE
PUBLIC SPACE

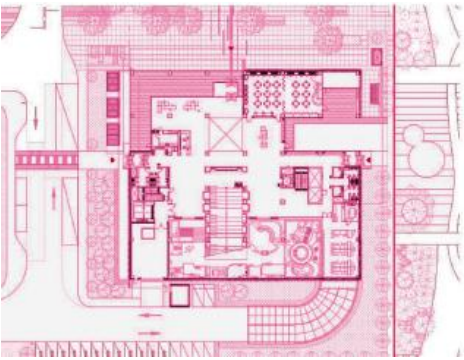
In reading and exhibition areas, the columns are positioned in such a way that they become part of the spatial experience, sometimes doubling as elements that guide circulation or frame views within the museum. Their presence is subtle, ensuring that the vast open spaces remain the focal point while the structural integrity is maintained.



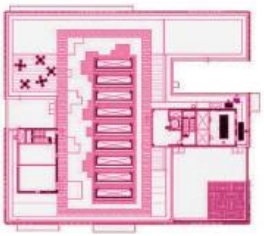
ENTRANCE
CIRCULATION PATH



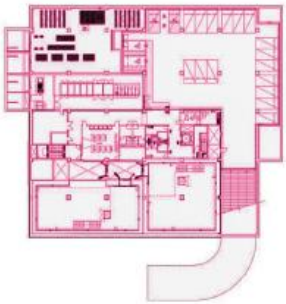
Fig 9.6: Reading Space
Columns create an axis and point of focus towards the bookshelf



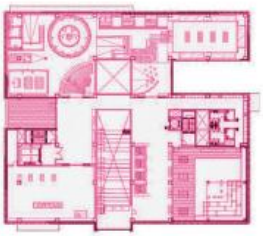
GROUND FLOOR



FIRST FLOOR



SECOND FLOOR



THIRD FLOOR



Fig 9.7: Multipurpose Hall
Sitting space for a lecture

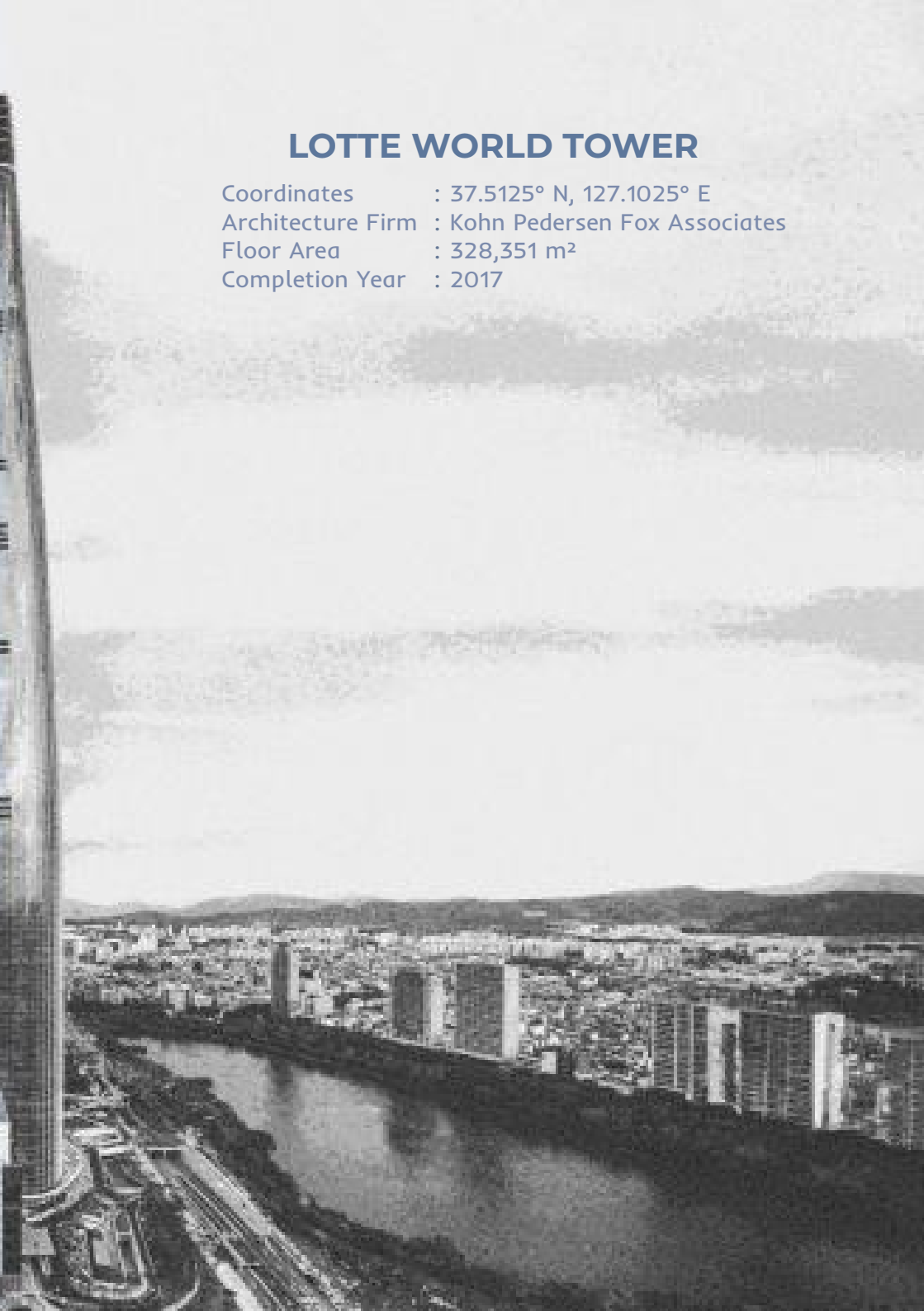


Fig 9.8: Exhibition Hall
Exhibits old literary artefacts



LOTTE WORLD TOWER

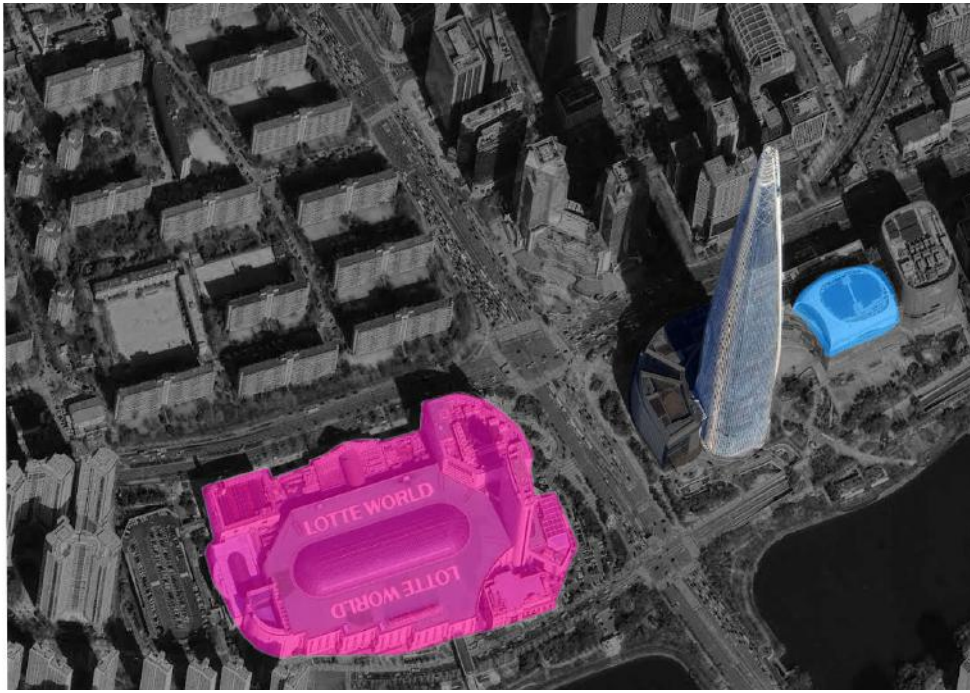
Coordinates : 37.5125° N, 127.1025° E
Architecture Firm : Kohn Pedersen Fox Associates
Floor Area : 328,351 m²
Completion Year : 2017



LOTTE WORLD TOWER

Tradition and Modernity standing 555 m Tall

The Lotte World Tower is a landmark in South Korea's architectural landscape, being the country's first building to surpass 100 floors. As the fifth tallest building in the world, it epitomizes South Korea's rapid advancement and development on the global stage.
The design harmoniously blends contemporary aesthetics with forms inspired by traditional Korean arts such as ceramics, porcelain, and calligraphy. The tower's smooth, continuous curvature and gentle tapering reflect the elegance of Korean artistry, while a seam running the full height of the structure subtly gestures toward the historical core of Seoul.



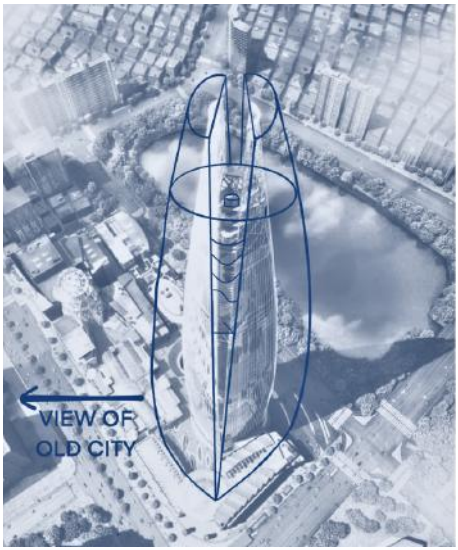


Fig 10.1: The Lotte World Tower is positioned in such a provides a 360 view of the skyline of Seoul.



Location and Accessibility:
Positioned near attractions like Lotte World Park and the Han River, the Lotte World Tower's south-facing entrance ensures high visibility and easy access, solidifying its role as a key cultural and economic landmark within Seoul's urban landscape.

Orientation:
The Lotte World Tower, strategically positioned in the bustling district of Sincheon-dong, Songpa-gu, Seoul, is meticulously oriented with its primary entrance facing south. This southward orientation maximizes sunlight exposure and provides unobstructed, panoramic views of the surrounding urban landscape and the iconic skyline of Seoul. The north-facing rear facade complements this alignment, contributing to the tower's optimal spatial positioning within the city.

Durability and Climate Response:
The architectural design of the Lotte World Tower incorporates robust considerations for a variety of climatic conditions. The structure's resilience is fortified by its capacity to withstand significant wind loads and diverse weather patterns.

The tower's sleek, tapered form is a masterstroke in aerodynamic efficiency, effectively mitigating wind pressures and reducing structural strain. This design is accentuated by a high-performance double-skin facade, which not only enhances aesthetic appeal but also plays a critical role in climate control. The glass facade strikes a balance between light penetration and heat insulation, maintaining an ideal indoor climate with minimal energy consumption. The low-emissivity glass windows afford expansive, glare-free views of the city while keeping the interior temperatures regulated throughout the year.

Wind Load Resistance:
The tower's form is designed to mitigate wind loads, allowing it to withstand an instantaneous wind velocity of up to 75 m/s. This aerodynamic efficiency is complemented by the high-performance double-skin facade, which contributes to the building's structural stability by reducing wind-induced vibrations and minimizing pressure differentials.

Foundation and Seismic Considerations:
Beneath the surface, the foundation of the Lotte World Tower is equally formidable, designed to bear the immense weight of the structure while providing resilience against seismic activities. The tower's foundation integrates a deep pile system that anchors the building firmly into the bedrock, ensuring stability and durability.

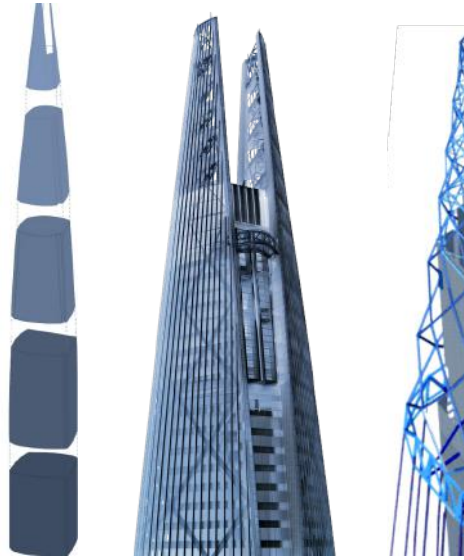


Fig 10.2: Depletion of mass while moving upwards, helps stabilize the structure & upper junctions facilitate less programs compared overall.

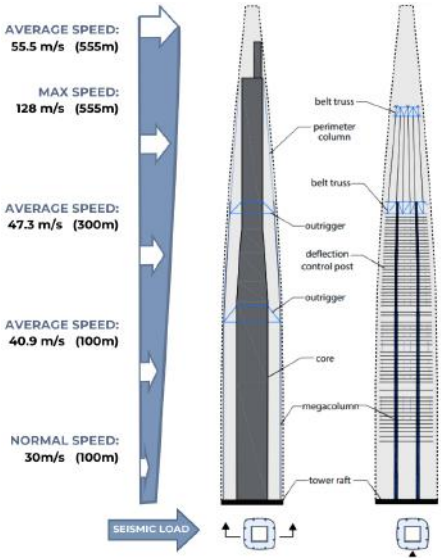


Fig 10.3: The structure is designed to withstand instantaneous wind velocity of up to 75 m/s.



The roof's assembly involved approximately 3,000 tons of steel parts, a high-precision 64t tower crane and GPS alignment systems, as well as welding technicians to ensure exact positioning and structural integrity.

Lateral Load Resistance and Core Structure: The system designed to resist lateral loads is ensured through a robust central reinforced concrete core. This core is supplemented by two sets of steel outriggers, which effectively transfer lateral loads to the eight reinforced concrete mega-columns that define the building's periphery. These mega-columns, positioned at the tower's corners, provide crucial support against wind and seismic forces, thus enhancing the overall stability of the structure. The integration of dual sets of steel belt trusses further reinforces the building, distributing loads evenly and maintaining structural equilibrium.

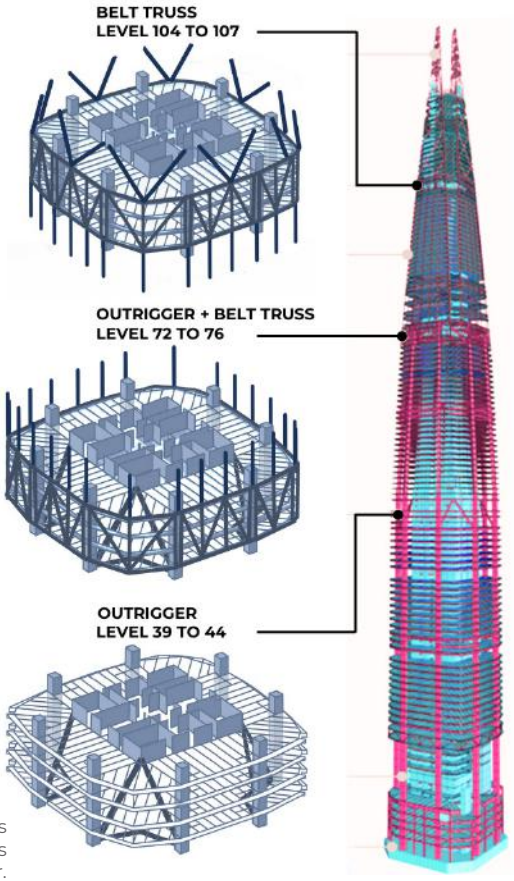


Fig 10.4: Simplified views of the structural systems used in the Tower.

The Facade System:
The tower's facade features white lacquered vertical mullions that extend beyond the highest occupied floor, creating a bisected peak accentuated by two corner seams—a subtle nod to Seoul's historic centre.
The building's curtain wall system varies by section. Residential areas use laminated safety glass for inner panes and heat-strengthened glass for outer panes. In contrast, hotel and office sections employ heat-strengthened glass for both panes. To maintain a uniform exterior appearance, the design team at Kohn Pedersen Fox (KPF) used consistent outer pane thickness and applied a reflective coating to the second surface throughout the tower.

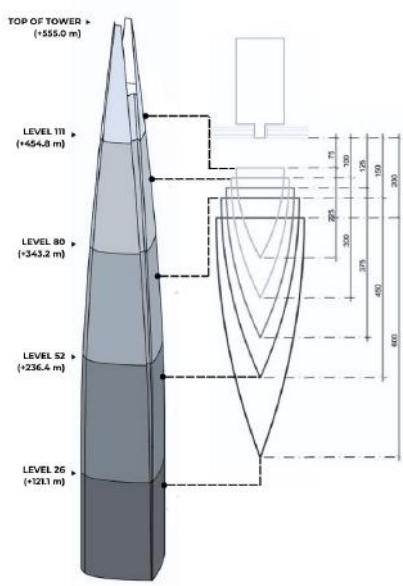


Fig 10.5: Fin diagrams

Ventilation and HVAC:
The HVAC systems at Lotte World Tower are engineered to maintain optimal climate conditions throughout the building, with a particular focus on the observation deck. These systems effectively regulate temperature and humidity, ensuring occupant comfort. High-efficiency air filters and a fresh air intake system uphold superior indoor air quality. Additionally, energy recovery wheels in the outside air units capture and recycle exhaust air, boosting energy efficiency. Lotte World Tower has earned LEED Gold certification by leveraging renewable energy sources such as geothermal power, photo voltaic panels, and wind spire turbines, which ensure a sustainable power supply. Variable-frequency drives optimize HVAC equipment performance, enhancing energy conservation. Water conservation is prioritized through the use of low-flow fixtures and grey-water reuse facilities, achieving a 30% reduction in water usage.



Fig 10.6: The outer covering glass has low emissivity and uses Argon gas to increase insulation.

The most thrilling feature of the Lotte Tower may be the glass-floored observation deck—the world's highest. This cantilevered platform offers visitors a heart-stopping view 1,600 feet straight down, protected by just three layers of 10-millimeter tempered glass with SentryGlas Plus inter-layers.

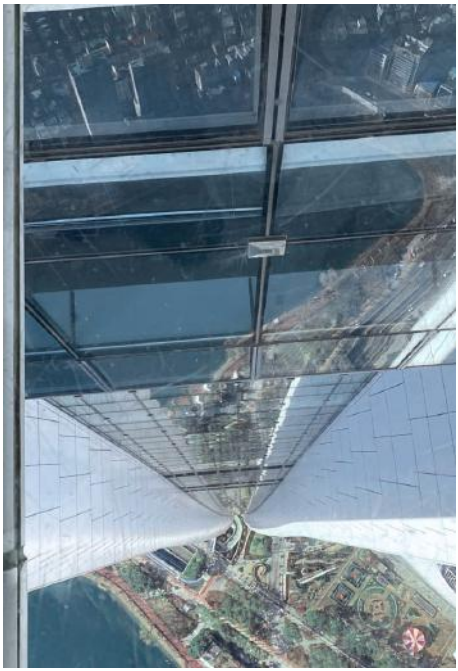


Fig 10.7: View from the glass floor on the observation deck

Vertical Transportation:
The Lotte Tower has a multi-dimensional approach to elevator planning. A behavioural study was done to establish effective circulation patterns to support the different programs of the building. To prevent potential circulation issues, elevators are grouped based on building program and extraneous elevator stops are avoided.
The high-speed elevators are developed through a collaboration between Otis and LG Electronics. Each double-deck cabin can carry 54 passengers, earning them the Guinness World Record for highest-capacity elevators.
The elevators adhere to universal design principles, providing accessibility for all visitors, including those with mobility impairments, through features such as tactile buttons, Braille labels, and audible announcements.
The installation of the elevator system was challenging due to the distinctive pinnacle, necessitating complex manoeuvres to position four 100-ton traction machines without damaging the architectural elements.

Circulation:
Lotte World Tower ensures a smooth visitor experience from entry to exit. Upon entry, visitors are welcomed at the tower's entrance area and ticket counters. Inside, well-planned circulation paths guide visitors through retail floors, observation decks, and dining establishments. The exit area includes amenities such as rest rooms and easy access to transportation.

Emotion of Spaces:
Its towering presence evokes a sense of awe and wonder, tinged with a hint of excitement and anticipation. As you gaze upward, feelings of insignificance mix with inspiration, fuelling a desire to reach for the sky. The bustling activity around the tower fills you with a sense of vitality and energy, while its sleek modernity instils a feeling of progress and possibility. Amid it all, there is a stirring of ambition and determination, as if the tower itself is urging you to dream bigger and aim higher.

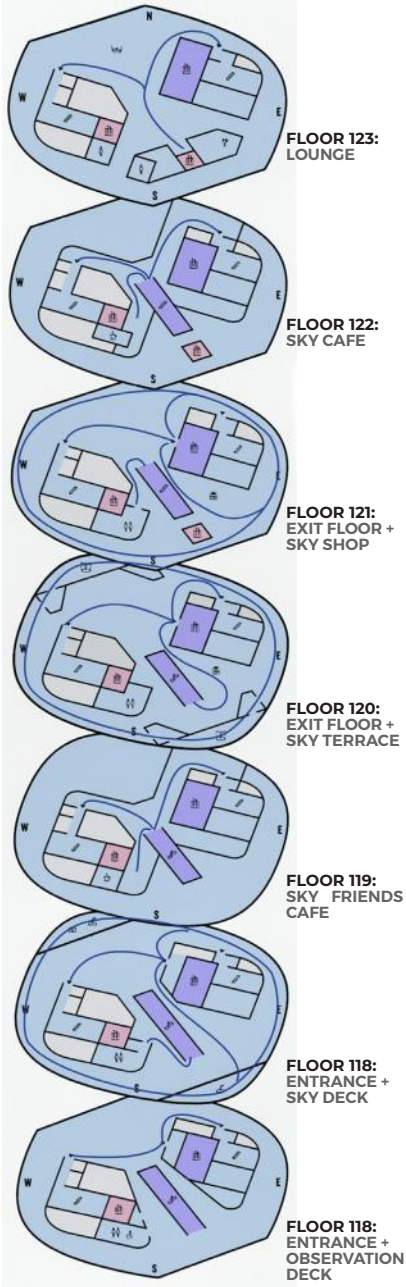


Fig 10.8: Floor plans of the top 7 floors open to public

The Lotte World Tower has integrated an advanced evacuation system that exceeds fire safety regulations. It includes five refuge floors, two fire service elevators, four egress stairs, and a lifeboat elevator system. The lifeboat elevators, 19 in total, switch to evacuation mode during emergencies, providing rapid movement between designated rescue floors. A pressurized system prevents toxic gas accumulation, ensuring safe evacuation.

The tower's safety infrastructure includes 161,000 sprinklers and over 30,000 fire alarms, enabling full evacuation of 15,000 occupants to safety zones in under 63 minutes.

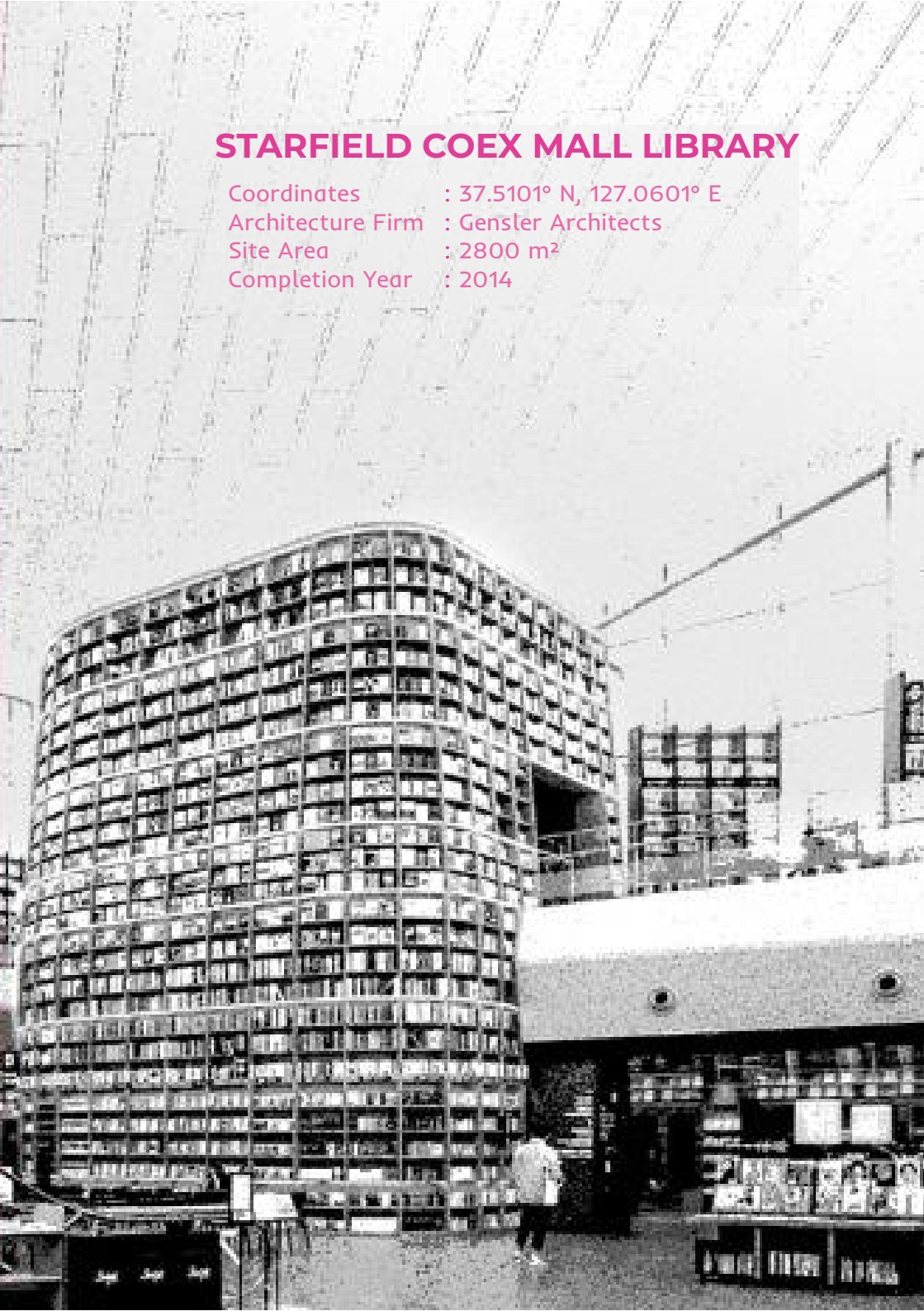


Fig 10.9: Program stacking



STARFIELD COEX MALL LIBRARY

Coordinates	: 37.5101° N, 127.0601° E
Architecture Firm	: Gensler Architects
Site Area	: 2800 m²
Completion Year	: 2014



STARFIELD COEX MALL LIBRARY

A dynamic cultural space within the COEX Mall

The Starfield Library is situated at the heart of COEX Mall, Seoul's largest underground shopping complex, located in Samseong-dong, Gangnam-gu. The mall, initially designed by Larry Oltmanns Architects, was completed in 2000. In 2014, Gensler led a significant renovation, which included the addition of the Starfield Library, enhancing the mall's status as a modern cultural destination. Opened in May 2017, the library's design draws inspiration from the Takeo City Library in Japan. The library houses an extensive collection of 50,000 books, covering topics such as economics, hobbies, liberal arts, and other practical interests. Youngpoong Bookstore, having obtained operating rights from Shinsegae Property, now manages the library. They maintain the existing collection, incorporate donated books, and continually expand the offerings.

The addition of the Starfield Library has transformed COEX Mall into a multifaceted space that harmoniously integrates shopping, culture, and public gathering, significantly enhancing its role in Seoul's urban landscape.

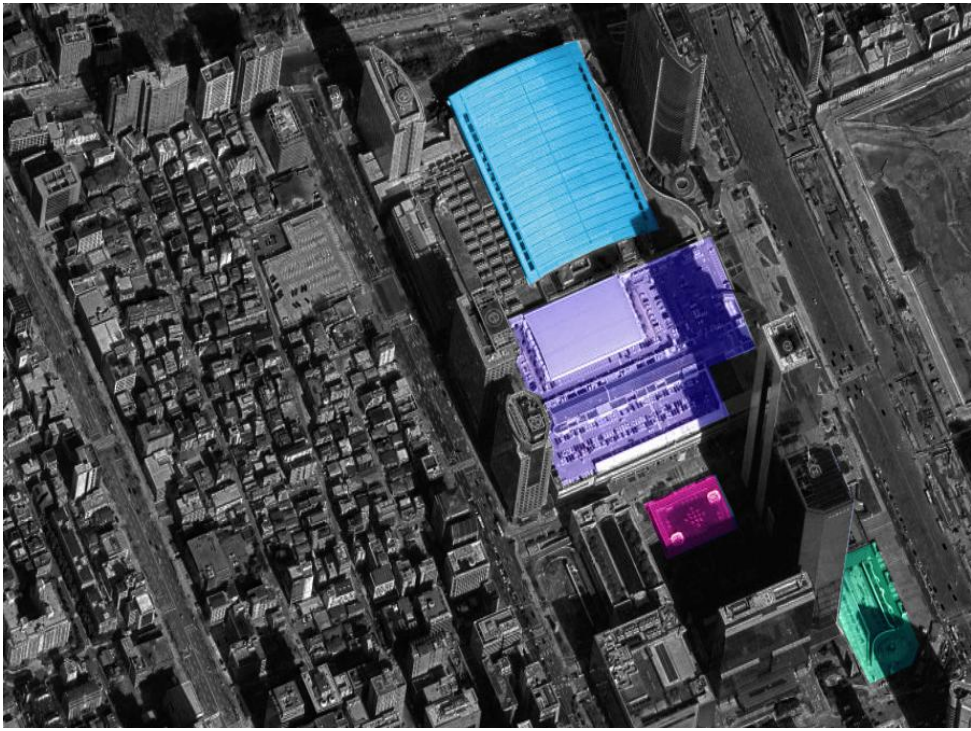




Fig 11.1: The library provides space for new artists to exhibit art installations that captivate visitors.



The renovation centered around three main ideas. First, the concept of an “Urban River Circulation” guided the internal layout, designed to reflect the flow of people and energy throughout the site. Second, “The Unfolded Sky” concept involved opening underground spaces to sunlight and air, creating a connection to nature by peeling back the street scape to reveal the sky from below. Lastly, the reconfiguration involved reorganizing visitor circulation paths, creating new gathering places, and opening primary focal points to daylight and views. This innovative approach gave the mall a vibrant street-level presence, positioning COEX as a center of civic life in Seoul.

Since its inception, the Starfield Library has not only reinvigorated COEX Mall but has also emerged as a premier cultural hub in Seoul, hosting a number of events including author meetings, book talks, and poetry readings. Its strategic location at the heart of Asia’s largest underground shopping complex has not only revitalized visitor engagement but has also solidified its status as a must-visit destination

Structural System:
The main structural elements of the library include the space frame roof, supporting pavilions, and the structural glass facade. The 13-meter-tall pavilions, transformed into bookshelves following a renovation by Gensler Architects, are crafted from steel for strength and wood for aesthetic appeal, resulting in a warm yet industrial look. The library's open, airy design eschews conventional walls, instead utilizing these corner-placed bookshelves as semi-partitional elements that define various areas within the space.
The library is fully daylit through its glazed, undulating roof, supported by a space frame that incorporates a metal screen panel system for sun control. This roof structure modulates light conditions throughout the day and across seasons, ensuring an influx of natural light into the retail concourses below.

Facade System:
The library has a glass facade that serves as both an invitation and a window to the world. The façade's design harnesses natural light, creating a dynamic interior that evolves throughout the day. Sunlight filters through the glass, painting the space with ever-changing hues and shadows, enhancing the library's ambiance and visitor experience.
The sense of openness is possible due to the overall glass facade, supported by glass fins. The glass panels are joined using silicone, forming a weather-tight system that accommodates structural movements while ensuring durability.
The glass fins are suspended from above and anchored at both the top and bottom to the building's structure, effectively transferring all loads and maintaining the integrity of the entire facade system.
The library's glass roof and facade maximizes natural light creating a bright and inviting atmosphere. Task lighting is strategically placed in reading areas to ensure comfortable reading conditions, while accent lighting highlights architectural features, displays, and bookcases, enhancing the overall aesthetic appeal of the library during evening hours.

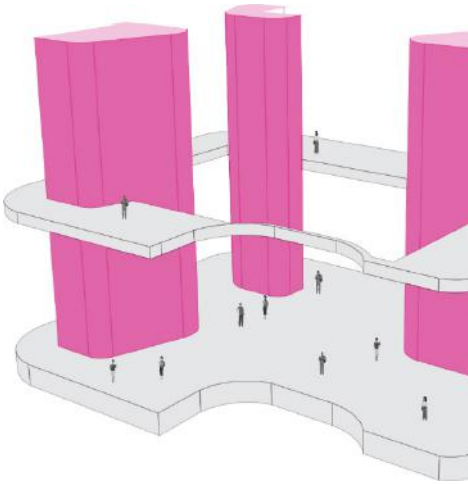


Fig 11.2: The three 13m tall pavilions stand on each corner of the library.

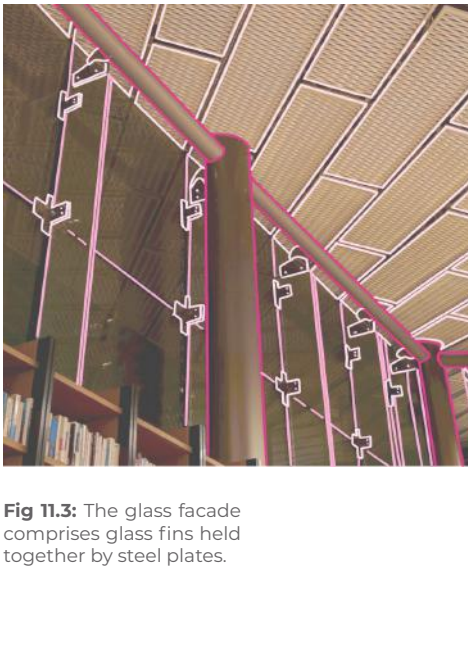


Fig 11.3: The glass facade comprises glass fins held together by steel plates.



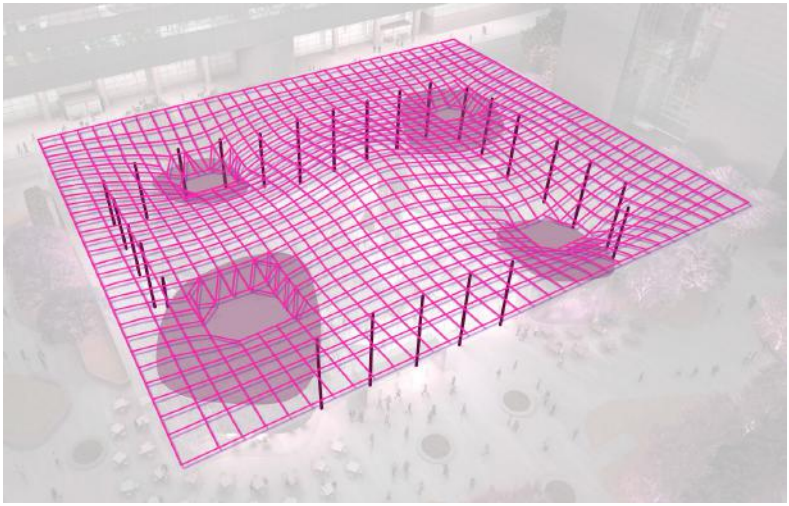


Fig 11.4: The pavilions act as an anchorage for the roof space frame .





Fig 11.5: Screen panels control the amount of sunlight entering the library.

Emotion of Spaces:
Its design, featuring curved bookshelves, ensures a vast array of books is always in view, inviting exploration and discovery. These shelves not only act as a storage solution but also a sculptural element that defines the space and captivates any visitor or reader with the promise of finding the perfect book. The library exudes a palpable sense of adventure as visitors navigate through rows of books, each turn offering new possibilities and insights, creating a haven for curiosity and learning amidst the city's hustle

Sensory Perception:
The towering shelves dominate the library space, overwhelming visitors with the sheer abundance of books and knowledge. From the center, one is surrounded by these immense shelves on all sides, creating a profound sense of grandeur and scale. Despite the high foot traffic, the library's thoughtful acoustic management minimizes ambient noise, preserving a tranquil atmosphere conducive to reading and reflection. Its interior ambiance offers a stark contrast to the bustling mall environment, providing visitors with a unique and immersive experience that distinguishes it from the rest of the facility.

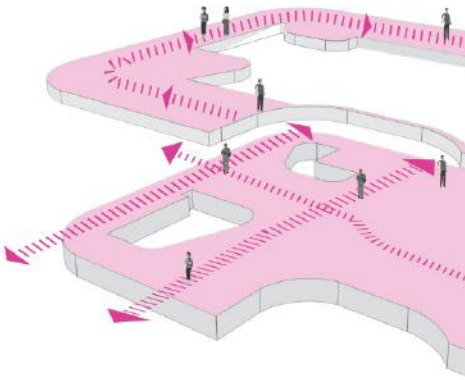


Fig 11.6: The floor space allows circulation and promotes users to seek and discover the COEX mall.

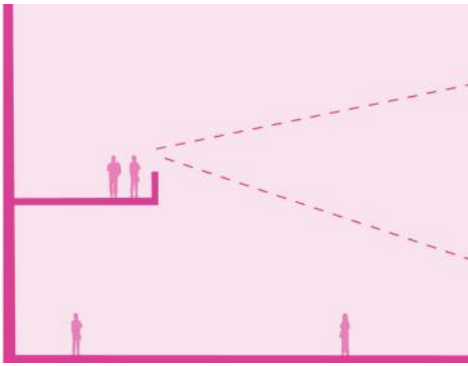
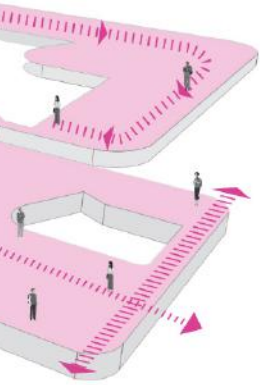
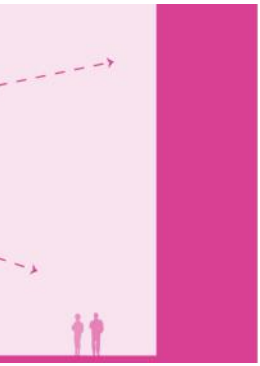
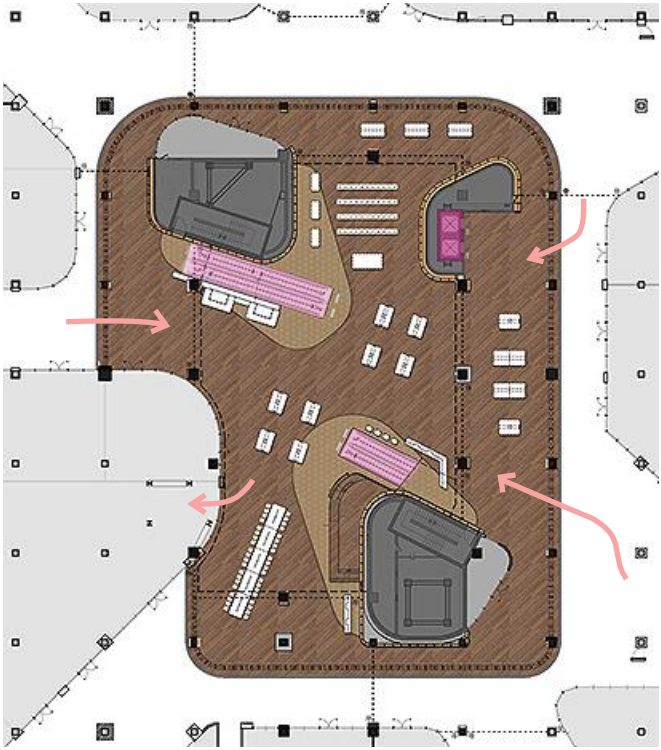


Fig 11.7: Division of focus is created by providing visual connection between the upper floor and the ground.







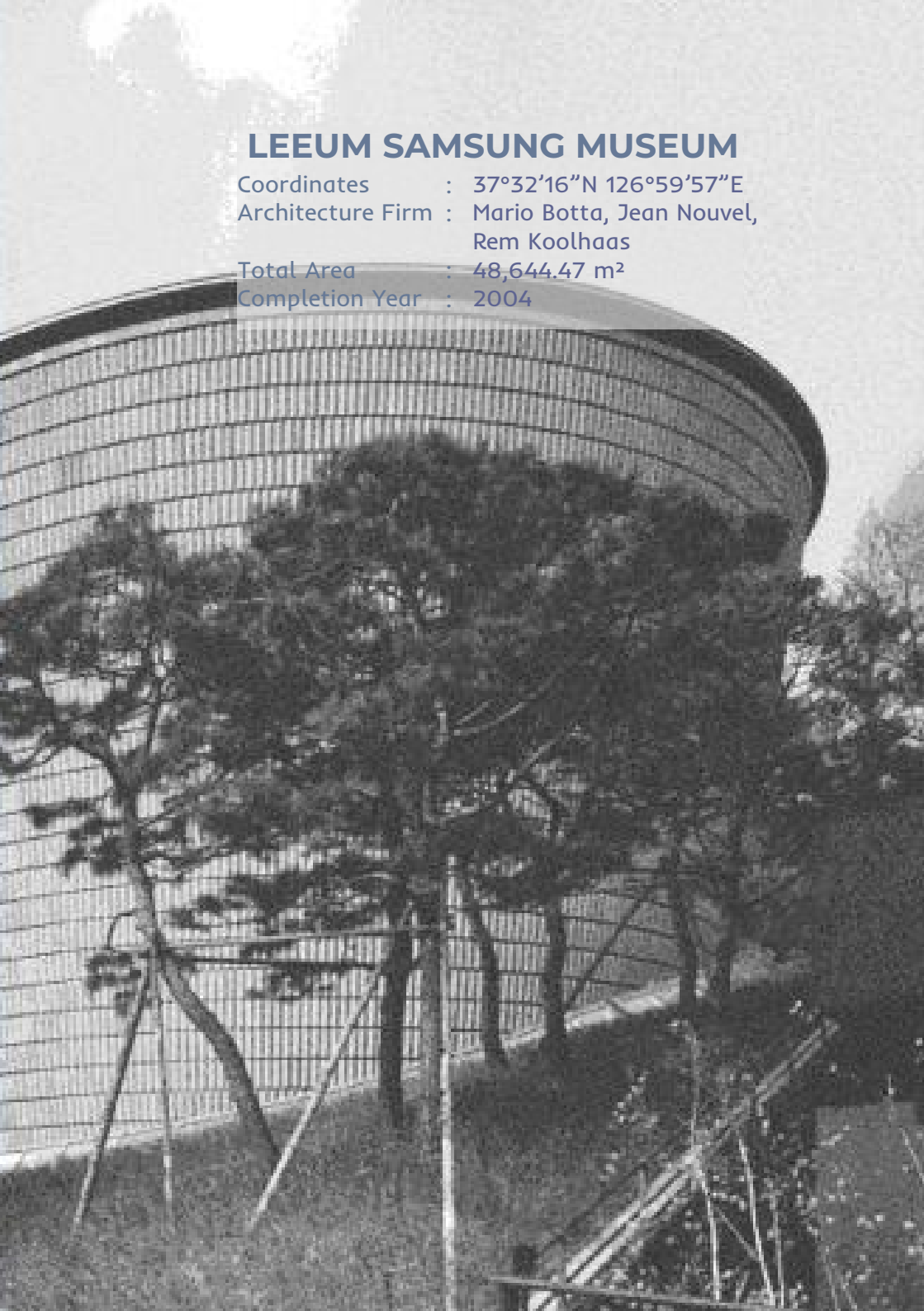
PAVILIONS
ELEVATORS
ESCALATORS
ENTRANCE / EXIT
RETAIL STORES

Fig 11.8: Ground Floor Plan


HYA

LEEUM SAMSUNG MUSEUM

Coordinates	:	37°32’16”N 126°59’57”E
Architecture Firm	:	Mario Botta, Jean Nouvel, Rem Koolhaas
Total Area	:	48,644.47 m²
Completion Year	:	2004



LEEUM SAMSUNG MUSEUM

Harmonising Tradition and Modernity

The Leeum, Samsung Museum of Art stands as a captivating representation of how architecture can interact with art, culture, and history. Located in the heart of Seoul, it is designed by three architectural heavyweights: Mario Botta, Jean Nouvel, and Rem Koolhaas. Completed in 2004, the museum is divided into multiple sections, each designed by a different architect, allowing for a dynamic contrast in styles while maintaining an overarching sense of harmony.

The museum's overall design beautifully integrates the diverse approaches, creating a space where traditional Korean art is presented alongside global contemporary works. The building itself serves as both an exhibition space and an architectural masterpiece, offering an immersive experience where visitors are invited to engage with both the art and the space in which it resides.

The building's unique structure, blending sleek modern lines with cultural motifs, creates an environment where art and architecture converge, offering visitors an immersive experience that celebrates both the past and the present.



The hill provides elevated vantage points within the museum, offering panoramic views of the surrounding cityscape and enhancing the visual experience for visitors. The elevation contributes to a sense of openness and connection with the environment.

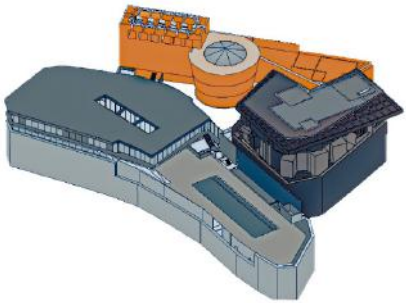




Fig 12.1: Top View
Top view of all three connecting museums



Location and Accessibility:
Located in the vibrant district of Hannam-dong, Yongsan-gu, Seoul, an area known for its cultural richness and eclectic surroundings. Easily accessible via major roads such as Hangangdaero and Itaewon-ro, both providing direct access to the site. The museum is situated near the Itaewon subway station (Line 6), making it convenient for public transport users. Additionally, the site is within proximity to several embassies, enhancing its role as a cultural hub within the city.

Orientation:
Nestled on a hillside, the museum's layout takes full advantage of the sloping terrain, with the main entrance facing southwest towards the Han River. This orientation offers sweeping views of the surrounding cityscape and the river. The architectural volumes step down the hillside from north-west to southeast, aligning with the natural topography and creating a dynamic interaction between the building and its environment. The careful positioning of the building also maximises natural light and provides optimal sight lines to both the urban fabric and the distant mountains.

Jean Nouvel - Museum 2:
Design Philosophy: Nouvel's design is characterised by a sleek, modern aesthetic and innovative use of materials like concrete, stone, and metal. The building creates a dialogue with its environment, focusing on light and shadow to craft dynamic spatial experiences while maintaining intimacy and enclosure. The restrained, geometric facade reflects Nouvel's sensitivity to context, prioritising solid materials over glass to establish a strong visual presence and enhance the museum's connection with its surroundings.

Architectural Style: The museum features a contemporary style with a focus on form, texture, and spatial experience. Solid, geometric masses of concrete, stone, and metal create a tactile quality and contrast with the environment. The minimalistic design combines sharp lines and subtle curves, allowing for a dynamic interplay of light and shadow.

Rem Koolhaas - Samsung Child Education & Culture Center:
Design Philosophy: It embraces boldness and asymmetry. His approach challenges conventional forms with dynamic, cantilevered volumes and irregularly shaped windows, creating a sense of movement and energy. Koolhaas incorporates exposed structural elements, emphasising the building's raw, industrial qualities, and creating a visual connection between the interior and exterior spaces. The design aims to provoke interaction, encouraging visitors to explore the building's unconventional form.

Architectural Style: The museum showcases a modern, experimental architectural style with asymmetrical, cantilevered volumes and dynamic shapes. The use of irregular windows and exposed structures adds an element of rawness and energy, while the bold, angular design contrasts with more traditional architecture in the area. The overall style is playful, yet functional, with a strong emphasis on creating a sense of movement and interaction.

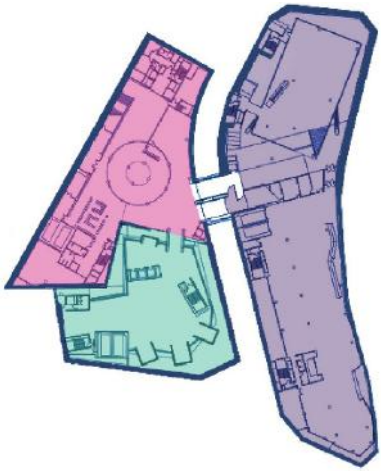


Fig 12.2: Connecting Plan
All three museums



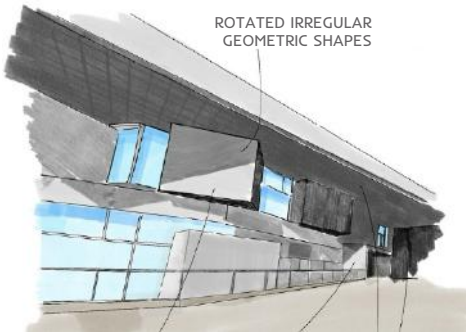


Fig 12.3: Jean Nouvel Museum Front View
Use of extruding cubes creating dynamic form



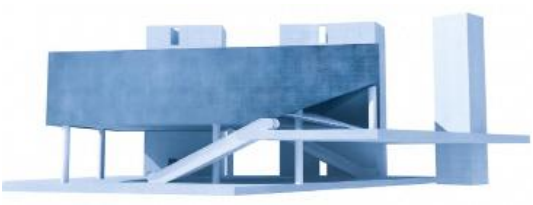


Fig 12.4: Rem Khoolhaas Museum
3D Model depicting the elements





Fig 12.5: Light Play
Sharp angles that reflect light



Fig 12.6: Jean Nouvel Museum Plan
Site Plan





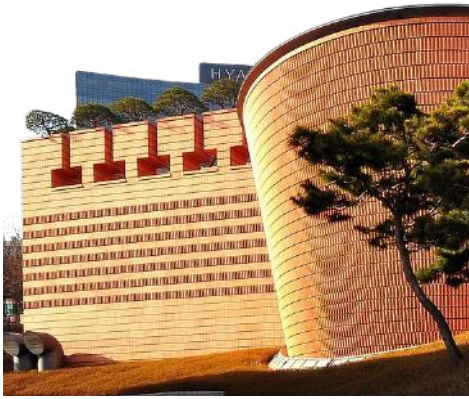


Fig 12.7: Black steel cubes and light reflecting on it

Mario Botta - Museum 1:
Design Philosophy: Swiss architect Mario Botta is known for his use of geometric forms and traditional materials. He employed a striking combination of geometric shapes and terracotta bricks, creating a building that is both modern and grounded in tradition.

Architectural Style: The design features a robust, monumental quality with clean lines and a textured brick facade. The use of traditional Korean elements, such as wooden lattice screens, adds a cultural dimension to the building, bridging historical and contemporary aesthetics.

The use of terracotta and geometric forms gives Museum 1 a monumental presence that stands out within the museum complex. The building's solidity and formality create a strong visual identity that contrasts with the more fluid and transparent designs of the other buildings. The spatial organization and material choices contribute to a cohesive and engaging visitor experience.



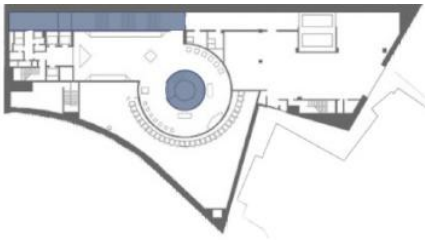
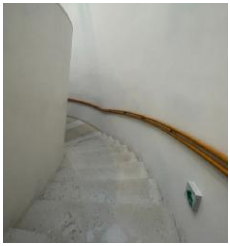
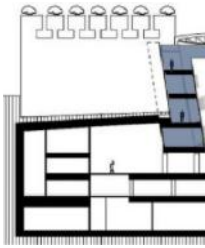


Fig 12.8: Plan
Spiral staircase marked

The skylight, strategically positioned to flood the interior with natural light, creates a dynamic interplay of illumination that enhances the visual appeal of the space and fosters a sense of openness. Complementing this, the spiral staircase stands as a sculptural element, its elegant curves and geometric precision offering a striking contrast to the building's rigid volumes.







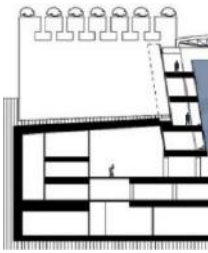
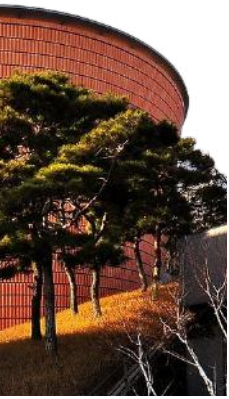
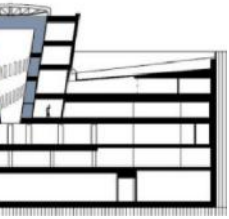
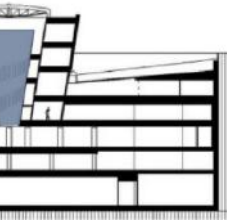


Fig 12.9: Sections
Skylight and surrounding stairs









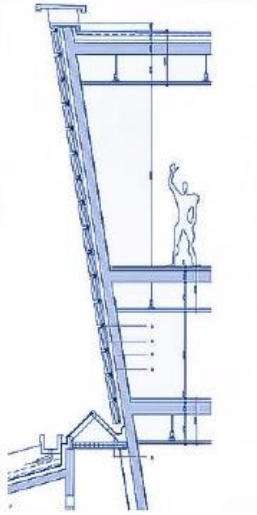


Fig 12.10: Section of Facade

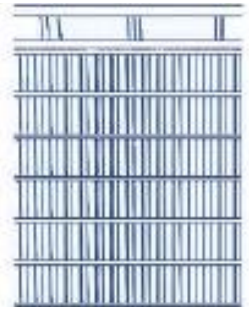
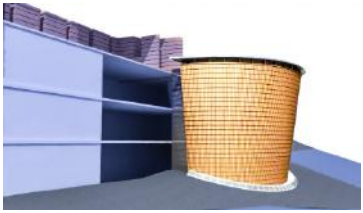
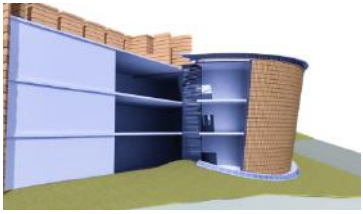


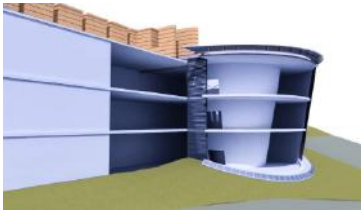
Fig 12.11: Facade Material
Terracotta bricks



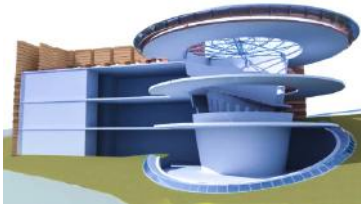
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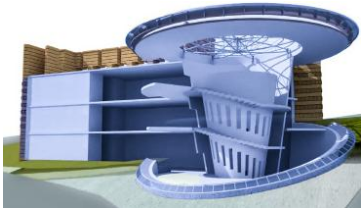
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PHASE 3



PHASE 2



PHASE 1

Fig 12.12: Cross sectional Model
Various phases of construction



SEOCHO GARAK TOWER EAST

Coordinates	:	37°29’53”N 127°1’33”E
Architecture Firm	:	Architecten Consort
Floor Area	:	54,530 m²
Completion Year	:	2011



SEOCHO GARAK TOWER EAST

Unparalleled Symphony of Glass and Steel

Garak Tower East, located on Gangnam-daero Road in the Gangnam District, Seoul, is a 24-story structure adjacent to an ice-skating rink. It serves as a comprehensive commercial hub, featuring offices, retail stores, restaurants, and various business spaces. This modern skyscraper is a popular destination for both locals and tourists due to its contemporary amenities and strategic location. Symbolizing South Korea's rapid development, Garak Tower stands out with its striking architecture. With a total floor area of 54,000 square meters, GT Tower East is designed for diverse uses, including commercial and cultural activities and ample parking facilities.

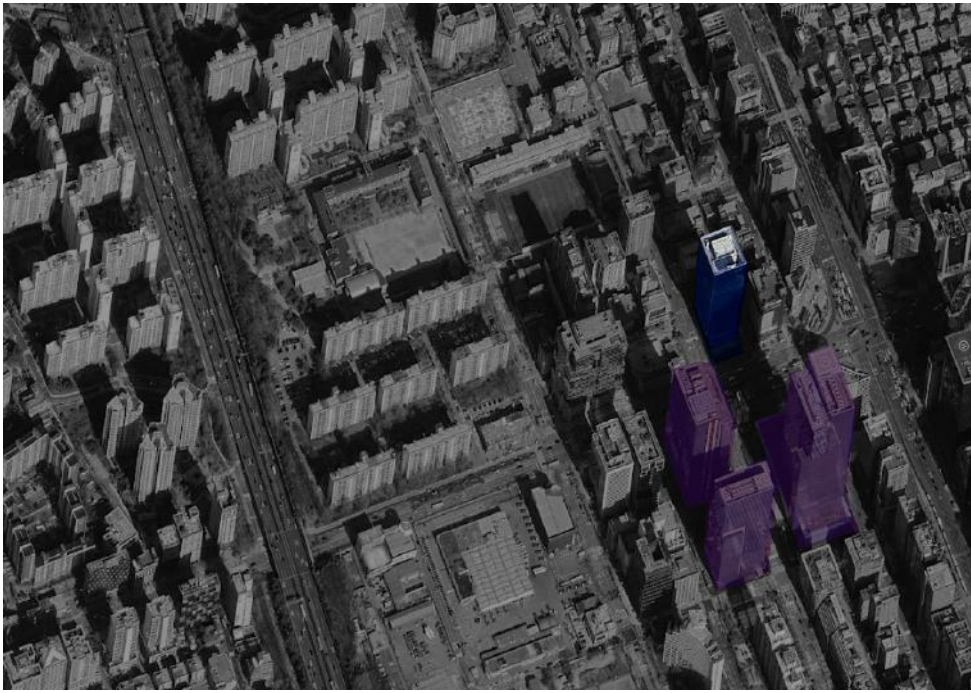
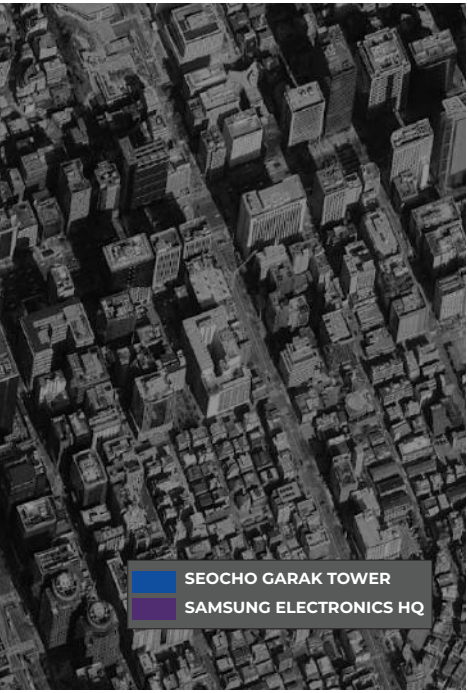




Fig 13.1: The unique architecture of the Garak Tower East stands out from the buildings around it.



An architecture firm called Architecten Consort was selected by Garak Construction to design an office tower in the Gangnam business district of Seoul. The design brief was to create a building that would captivate pedestrians, contrasting the 'masculine,' rectangular Samsung headquarters opposite. Inspired by the history of Korean design and ceramics, the architects envisioned a 'feminine,' dynamic tower with wave-like lines reaching 130 meters high.

Climate Response

The iconic wave-like glass facade of Garak Tower East maximises daylight and reduces solar heat gain, keeping the interiors well-lit and cool while minimising energy consumption. High-performance glazing retains warmth in winter and blocks heat in summer, further enhancing energy efficiency. Inside, LED lighting with smart controls adjusts according to occupancy and natural light levels, significantly reducing energy use. Integral shading and solar control features within the glass prevent overheating, maintaining a comfortable indoor climate.

Garak Tower East's design mimics the fluidity of water, with its structure undulating three times from the sunken entrance to the top. The flexible base plan of the building meets the growing demand for adaptable buildings, with a central core and thoughtful column structure that ensure unobstructed façades and expansive, versatile floor spaces.
The building offers efficient, square floor plates that can be easily partitioned for multiple tenants. The top of the tower maintains a conventional rectangular form, avoiding spires or additional curves, with the facade extending slightly above the roof-line.

Structural and Facade System
The tower's design features a central core for communications and services, surrounded by an auxiliary system of carefully designed pillars. This configuration allows for completely open floor spaces, maximising flexibility and functionality.

The wave effect in the structure is achieved by shifting the floor plates along one diagonal by up to three meters, occurring two-and-a-half times over the building's height (as shown in fig 13.2). This design ensures that columns are aligned, and the cantilever is reinforced within the same floor dimensions. The facade construction was completed without additional fittings, as all façades move in parallel. The ceilings near the facade are compressed to the size of a window frame, avoiding closed or opaque glass panels. The black vertical window frames balance with the semi-reflective blue glass panels, emphasizing the building's form and upward movement. Sustainable features like solar cells and natural ventilation are integrated into the design, alongside a glass curtain wall and deep metal fins that reflect light dynamically.

The parallel-projecting windows consist of numerous parallelograms of varying shapes and sizes rather than uniform outlines. To address these challenges, in-house experts developed innovative parallel-projecting friction stays specifically for the hardware of these unique windows. This advanced system technology, combined with concealed hardware and chain drives, ensures an exceptionally high technical standard that complements the exclusive design by architects.

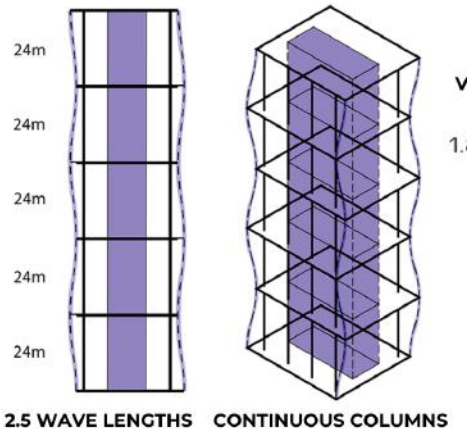
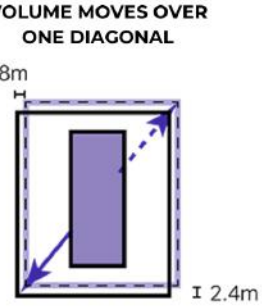


Fig 13.2: Diagrams showing how the wave effect was achieved in the structure.



Fig 13.3: The glass facade consists of parallel projecting windows .



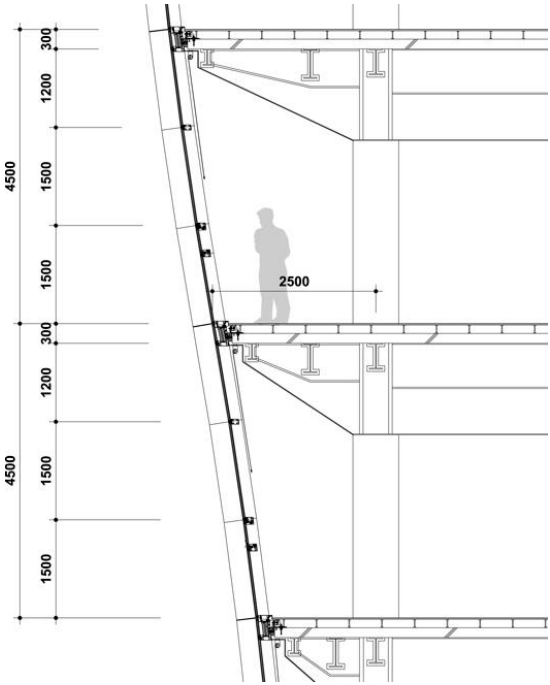


Fig 13.4: Section of the building facade w.r.t. human scale

Services

Garak Tower East is equipped with an array of advanced safety and convenience systems to ensure the well-being and comfort of its occupants. Fire detection and alarm systems are in place to promptly alert individuals in the event of a fire, while automatic sprinkler systems and other fire suppression methods are designed to control fires and minimize potential damage.

The building features multiple state-of-the-art elevators that provide rapid, secure, and energy-efficient vertical transportation. Among these are shuttle elevators, which are specifically designed to travel quickly between designated floors, enhancing efficiency and reducing wait times for occupants. In high-traffic areas such as the lobby and retail spaces, escalators are installed to facilitate smooth and efficient movement throughout the building. Together, these systems contribute to a safe and convenient environment for all who visit or work in Garak Tower East.

Emotion of Spaces:
Entering GT Tower East evokes wonder and curiosity. The undulating glass facade inspires awe, while the sleek, modern interior creates a sense of openness and anticipation. As visitors ascend to the upper floors, excitement builds in anticipation of panoramic city views. At the top, a profound appreciation of the dynamic cityscape below takes over, making the experience unforgettable

Sensory Perception:
Situated on a busy street, the exterior is filled with the sounds of public chatter, while the interior of the building offers a quiet retreat. The smell of freshly brewed coffee from the Starbucks inside, along with the warm hues from the curved wooden finishing of the interiors enhances the sensory experience. The sunken plaza, created by offsetting the building from the building line, offers a pleasant, relaxed urban space with shops and restaurants. The entrance design, with vertical lines and a horizontal awning, enhances public accessibility, while the natural stone tiles continue from the sidewalk into the lobby, creating a cohesive and inviting environment.



Fig 13.5: The outer finish of the core walls is also curvy like the structure.

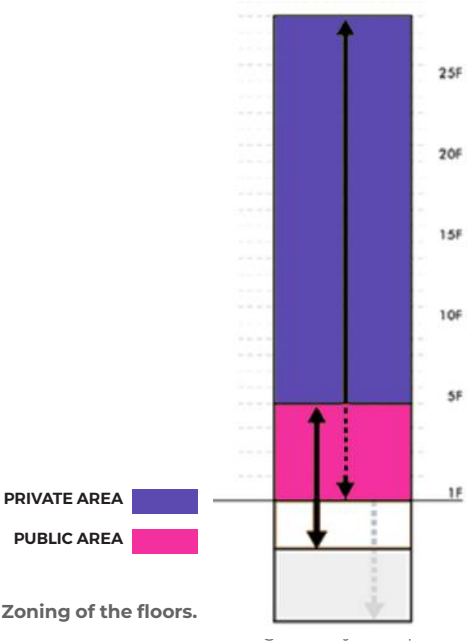


Fig 13.6: Zoning of the floors.



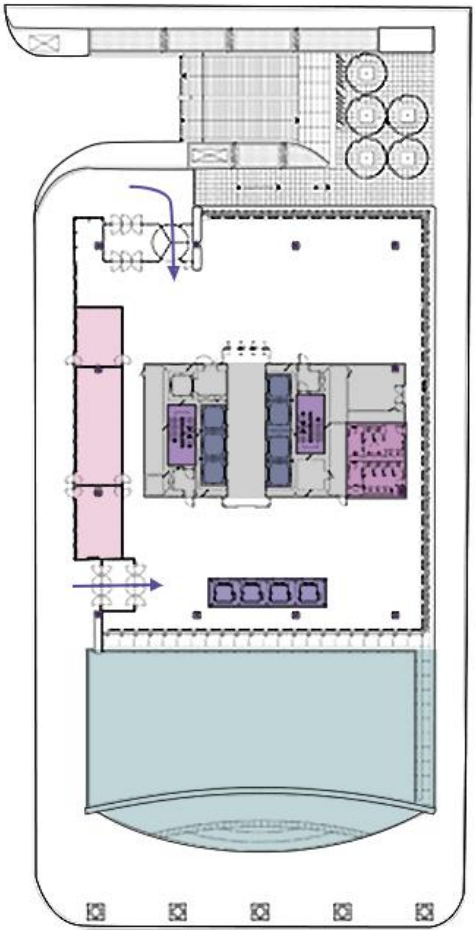


Fig 13.7: Ground Floor Plan



THE HYUNDAI MALL

Coordinates	:	37°31'33.94"N 126°55'41.51"E
Architects	:	Rogers Stirk Harbour+Partners, Burdifilek
Building Area	:	89,000 m²
Completion Year	:	2021



THE HYUNDAI MALL

Blending Modern Elegance with Natural Beauty

The Hyundai Seoul, which opened in February 2021, stands as a significant milestone in South Korea's retail scene, quickly establishing itself as the largest shopping mall in Seoul. This eight-story building, with an additional seven underground levels, covers a floor space of 89,100 square meters, making it the largest department store in the capital area. Its central location makes it easily accessible from various neighbourhoods via public transport and private vehicles, attracting a diverse mix of locals and tourists eager to explore Seoul's dynamic offerings. This strategic positioning enhances the mall's appeal as a premier destination for shopping, dining, and leisure activities. Hyundai Mall embodies the vibrant energy and cosmopolitan appeal of South Korea, standing as a significant landmark.

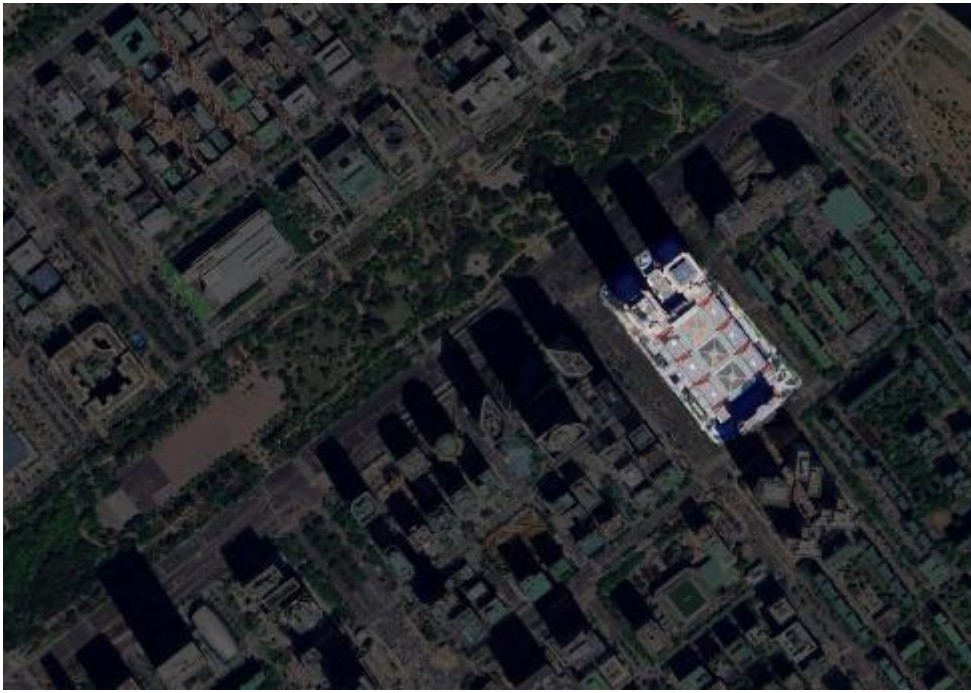
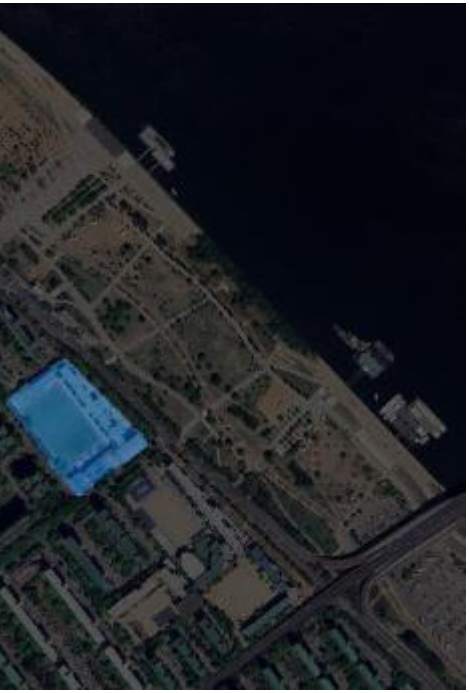




Fig 14.1: The architectural features of The Hyundai Seoul echo the form of the pangp'aeyon, a traditional Korean kite.



Design Vision

Drawing from Richard Roger's signature industrial style, the mall's structure has been accentuated with bright red columns, symbolising dignity and refinement in traditional Korean architecture. These elements not only underscore the building's innovative use of materials and technologies but also create a visually captivating environment.

Complementing this architectural vision, the Canadian firm BURDIFILEK crafted the interiors of three floors creating a Zen-like atrium. Their design concept focuses on well-being and tranquillity, wrapping the expansive spaces in greenery that evokes the serenity of Seoul's natural surroundings.

Central to the design are dramatic, full-height atria that fill the interior with natural light, enhancing the sense of openness and connection to the surrounding environment. The architectural features of The Hyundai Seoul echo the form of the pangp'aeyon, a traditional Korean kite, reflecting cultural heritage in its design.

Structural and Facade System
The building's steel framework is showcased externally, allowing for expansive, column-free interiors. Red-painted steel columns, trusses, and cables contribute to the building's striking aesthetic, reinforcing Rogers' design vision.
The most unique feature of the mall is the suspended roof system composed of trusses and cables, contributing to the open and airy design.

The design of the facade skilfully combines various materials to create a striking and distinctive appearance. The lower levels feature a simple glass facade, inviting customers to easily see and enter the stores. As you move up the building, the upper floors are equipped with larger louvres to control direct sunlight, ensuring comfort within. Some levels offer a high degree of visual connection, with seating areas near the facade that allow visitors to enjoy views of the city. The structural elements are emphasised with bright red steel cables and contrasting colours with the use of glass and aluminium panels.

Emotion of Spaces
The mall's elegant and modern design exudes a sense of luxury and exclusivity throughout its spaces. The vast, open interiors, enriched with art installations, seasonal displays, and innovative features like a 12-meter-high artificial waterfall and an indoor botanical garden, create an atmosphere of wonder and tranquillity. Robots are available to guide shoppers to their destinations, and visitors can check their body temperature with machines, adding to the futuristic experience. As visitors navigate the beautifully curated floors, the seamless integration of commerce, culture, and nature offers a visually stimulating and emotionally engaging experience, making each visit a memorable journey in the realm of high-end shopping.

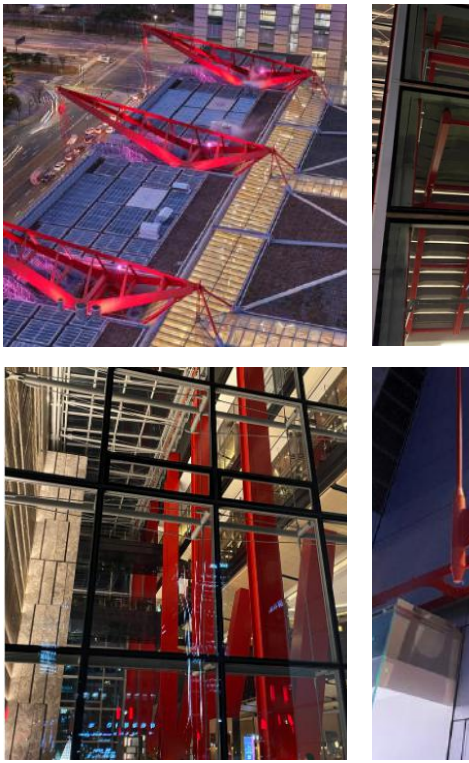


Fig 14.2: Red steel columns, trusses, and cables

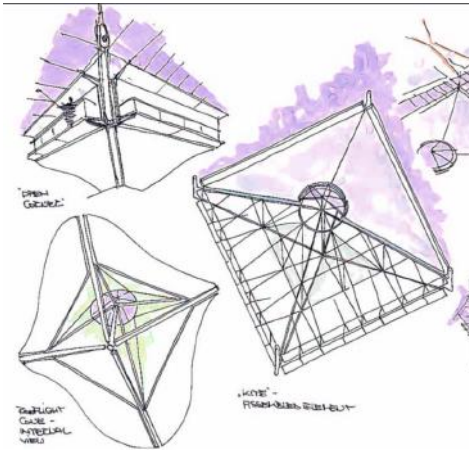
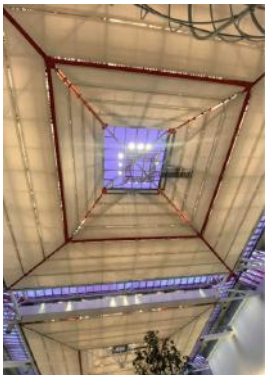


Fig 14.3: Sketches of the suspended roof structure.









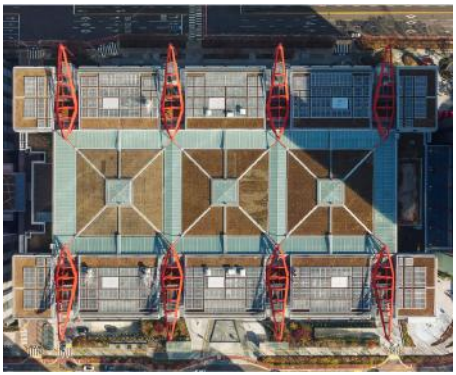


Fig 14.4: Perspective and aerial view of the roof.

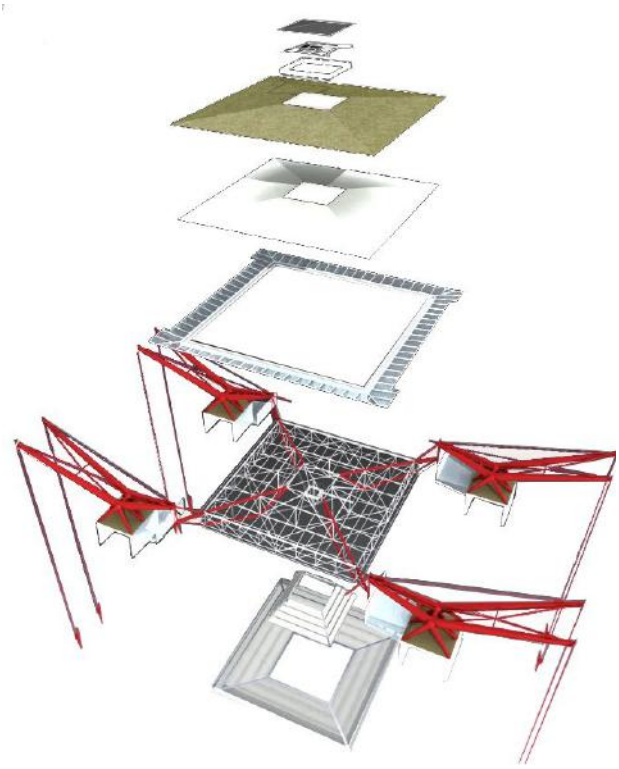


Fig 14.5: Exploded view of the roof structure comprising of trusses and cables.

Sensory Experience:
The Hyundai Seoul, like other malls in the city, is alive with the sounds of people and activity. However, the rooftop gardens and indoor botanical spaces provide a tranquil escape from the bustling environment. Looking up from the ground floor, visitors can appreciate the visual connectivity between different levels.

The atrium design serves as a central architectural feature, creating a focal point for the mall's overall design. These atriums encourage social interaction in an environment that goes beyond what typical malls offer, providing spaces for public gatherings and socializing. Bridges and sky walks facilitate movement while offering elevated views of the mall's interior and surroundings. The minimal use of walls creates a sense of openness, while rooftop gardens add beauty and visual interest, contrasting with the urban surroundings. Indoor trees, natural light, and a sculptural 12-meter-high waterfall contribute to a calming shopping experience. Curved floor plates add visual interest and a sense of movement, defining circulation paths and seating areas, thereby encouraging efficient use of space. Skylights further enhance the connection between the mall's interior and the outdoor environment, allowing visitors to experience the changing weather and enjoy a unique shopping experience.



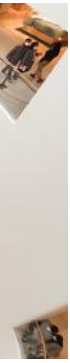


Fig 14.6: Indoor trees, natural light and a sculptural 12-metre-high waterfall create a calming shopping experience inside the mall.

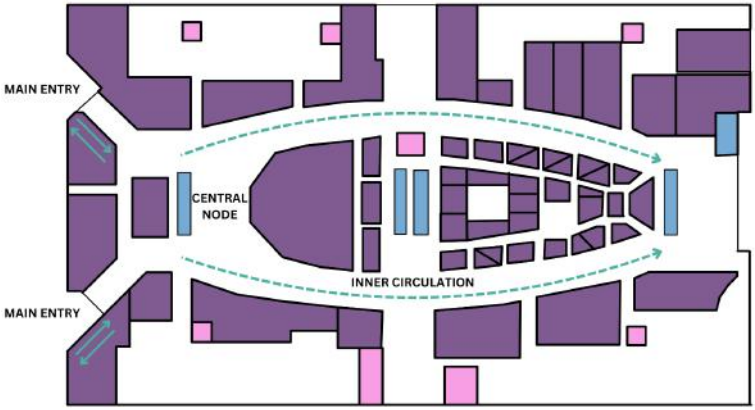


Fig 14.7: Curved floor plates create visual interest and a sense of movement within the mall's interior.









PRIMARY
SECONDARY
TERTIARY

Fig 14.8: Ground Floor Plan

Floor Plan and Zoning

The Hyundai Seoul's floor plan is likely divided into distinct zones, including retail spaces, dining areas, entertainment zones, and service facilities. Each zone is strategically located and designed to create a cohesive layout that optimizes traffic flow and enhances the overall user experience. The combination of innovative design elements, cultural spaces, and relaxation areas sets The Hyundai Seoul apart from other malls, offering a new shopping experience and setting a benchmark for the future of retail.



KOLON ONE AND ONLY TOWER

Coordinates	:	37°33’47”N 126°50’23”E
Architecture Firm	:	Morphosis Architects
Floor Area	:	5,874.92 m²
Completion Year	:	2018



KOLON ONE AND ONLY TOWER

Building of the Future

The Kolon one and only tower is a R&D facility designed by Morphosis for the Kolon Group , a leading textile manufacturing company in Korea.The 12 story tower building covers an area of 76,300 square meters and was completed in 2018.

The corporate center for research and development houses labs, offices, conference rooms, brand shops, cafeterias, libraries, lecture halls, and other support spaces. The aim of the project was to bring researchers, leadership, and designers together in one location. This combination creates active social and interdisciplinary spaces that prioritize the well being of the employees.



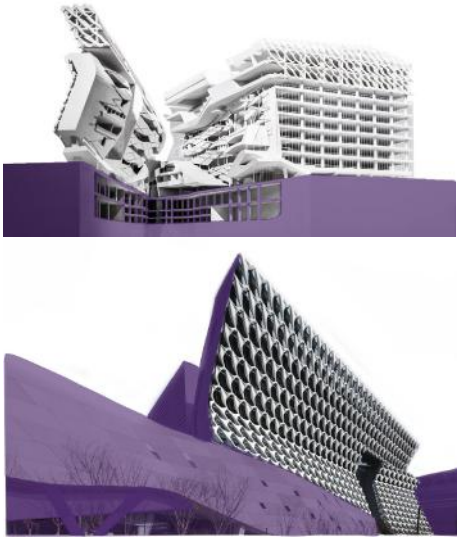


Fig 15.1: The unconventional facade and form of the building make it a landmark attraction.



Location:
Located, 392-2, Gayang-dong, Gangseo-gu, Seoul in the vibrant Magok District, which is a symbol of advancement and creativity in the centre of the nation's capital. The tower is a key element of the district's master plan and is responsible for transforming Magok into a vibrant centre of innovation, technology, and urban growth.

Energy Conservation:
In addition to education and the health and well-being of its workforce, the building's performance is centred on environmental stewardship, resource conservation, and energy efficiency. Increased access to natural light and fresh air to energise the workspace is made possible by roof terraces and courtyards. Green roofs, photovoltaic (PV) and geothermal design, recycled materials, and the use of a bubble deck slab, which uses 30% less concrete, are examples of additional sustainable practices.

Spatial Design:
The building's social hub is the vast multi-story atrium, which is 100 meters long at 30 meters high. The transparent liner system of the atrium, made up of enormous, eight-meter "stretchers," which enable a dynamic display of Kolon's own fabrics, reveals movement on all floors.

The Grand Stair, which was modelled after Rome's Spanish Steps, has utilitarian uses, also serves as a vertical patio for get-togethers and year-end celebrations. The openness is intended to break down hierarchical barriers and promote a more inclusive and interactive office culture.

About 123,000 square feet, or 15% of the building, is used as active social areas. The remaining space is used for offices, and 55% of the building is used for laboratories.
The lower floors of the structure receive passive shading as it folds towards the park. The inner environment is extended by a transparent ground plane, which directs light and movement towards the grand entryway and open pedestrian lane.

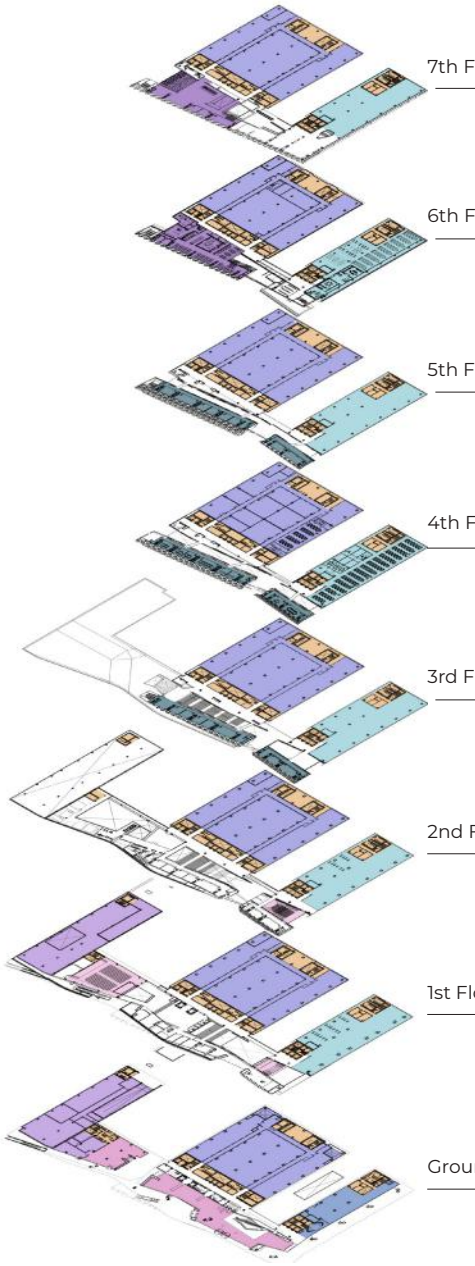


Fig 15.2: Floor Plans
Zones divided based on activities and spaces.

loor and Above

loor

loor

loor

loor

Floor

oor

nd Floor



Fig 15.3: Entrance Space
The transparent ground plane, directs light and movement towards the entry way.



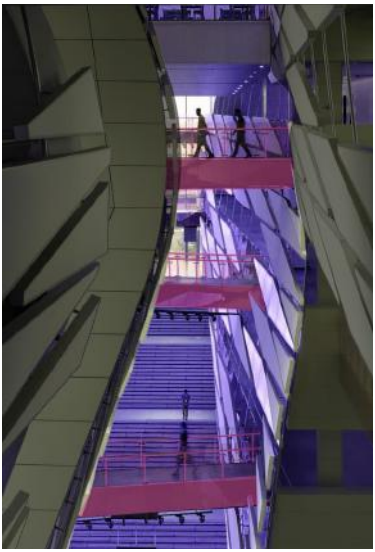


Fig 15.4: Intricate Atrium
Serving practical purposes such as facilitating vertical circulation, providing natural light penetration, and creating opportunities for social interaction and connectivity within the building.

Structural System:
A performative and symbolic element of the building, the unique brise-soleil system on the western facade is made of GFRP units that use Aramid, one of Kolon's proprietary high-tech fabrics, to significantly increase the material's tensile strength. The facade units are parametrically shaped to balance views and shading,

The tower's facade features a dynamic, multi-layered curtain wall system that incorporates a series of vertical fins or louvres that help regulate sunlight, glare, and heat gain, while also providing a visually striking appearance. The exterior is typically clad in high-quality materials such as glass, steel, and aluminium panels, giving the building a contemporary and sophisticated appearance

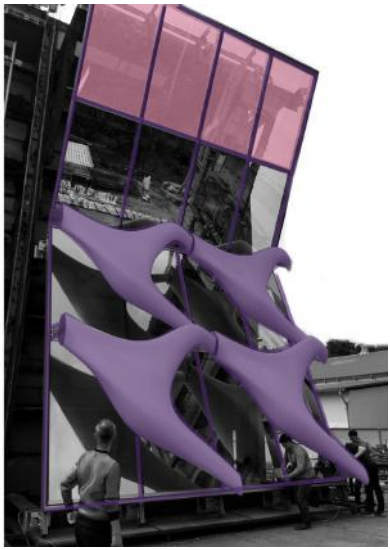


Fig 15.5: Facade unit
Imagery of woven pattern

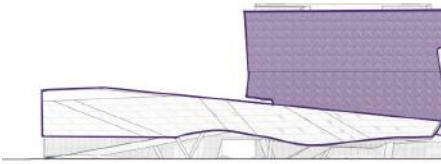


Fig 15.6: West Elevations

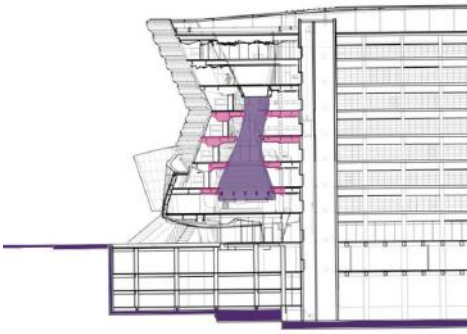


Fig 15.7: Section
Over-hangings alongside atrium, provide shade to the lower grounds.

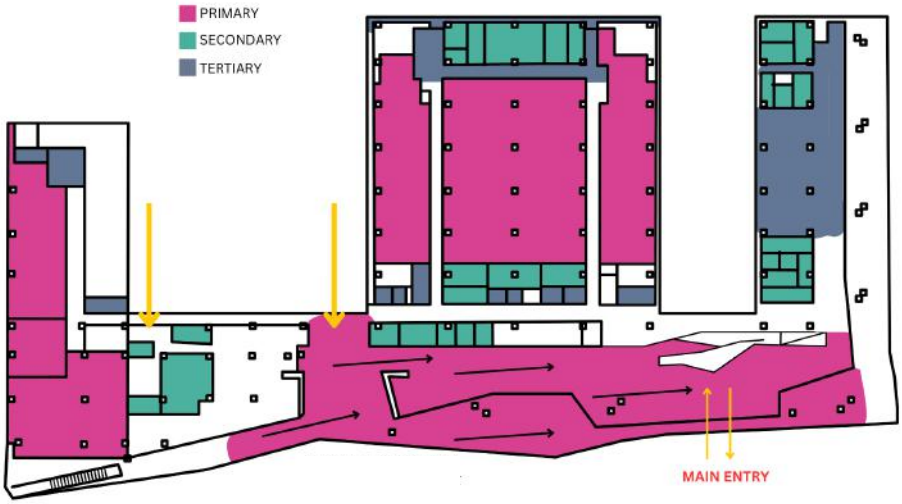
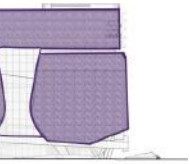
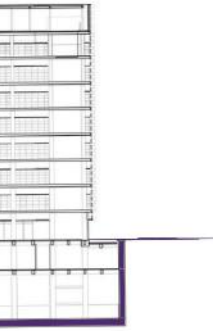


Fig 15.8: Spatial Zoning





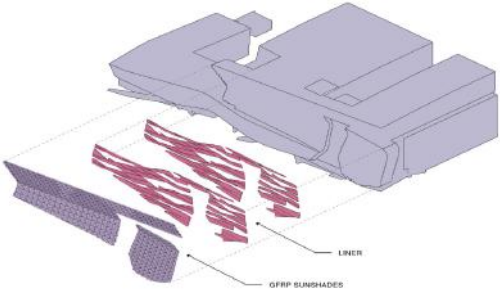


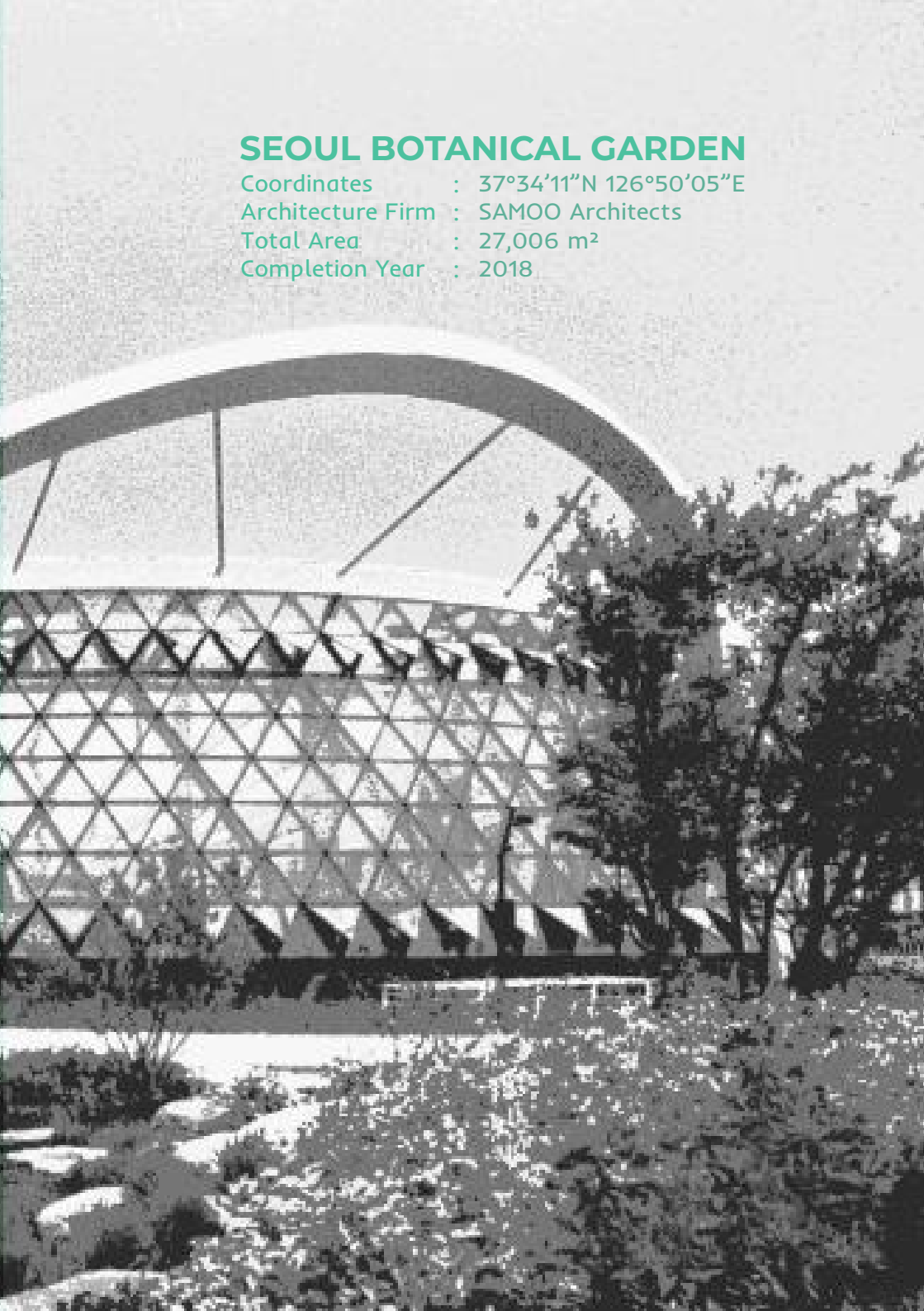


Fig 15.9: Dynamic Exterior
Multi-layered curtain wall system



SEOUL BOTANICAL GARDEN

Coordinates : 37°34'11"N 126°50'05"E
Architecture Firm : SAMOO Architects
Total Area : 27,006 m²
Completion Year : 2018

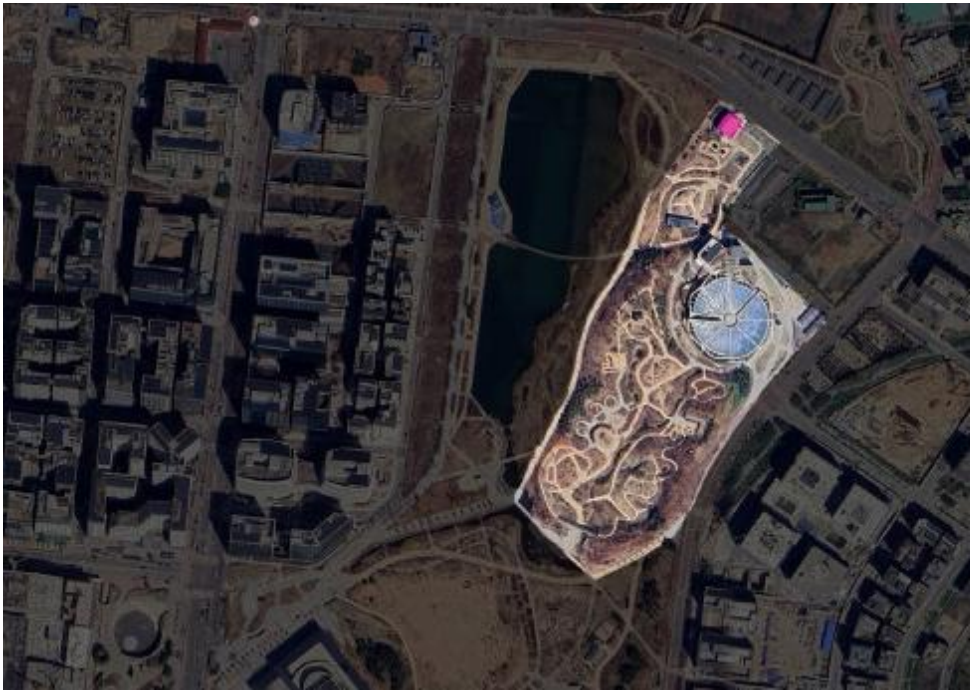


SEOUL BOTANICAL GARDEN

Nature's Diversity in One Place

The Seoul Botanical Garden, designed by Samoo Architects & Engineers and opened in 2019, is a visionary blend of nature and architecture that offers an immersive experience of diverse ecosystems within an urban setting. The garden features innovative designs, including a distinctive "flower-shaped" glass dome, and integrates advanced sustainable technologies to create a space where visitors can explore and connect with plant life from around the world. This modern botanical garden serves as both a public park and an educational facility, highlighting the relationship between humans and nature. The Seoul Botanical Garden showcases a rich tapestry of natural environments, reflecting diverse ecosystems and plant species from around the world.

The garden's design integrates various thematic zones that represent different climates and habitats, allowing visitors to explore a wide range of flora.



Located approximately 1 kilometer from the garden, the Han River is a major feature of the Seoul landscape. Its proximity adds to the garden's appeal, providing opportunities for visitors to enjoy riverfront activities and views.

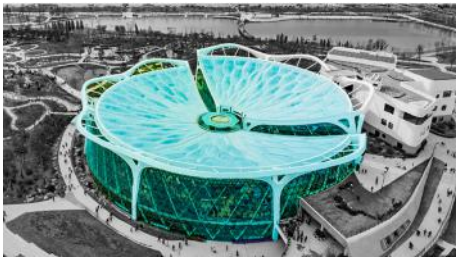




Fig 16.1: Aerial view of the greenhouse



Location and Accessibility:
Located in the Magok-dong area of Seoul, within the expansive World Cup Park complex, the Seoul Botanical Garden is easily accessible via the city's extensive public transport network. The nearest subway stations, such as Magok Station on Line 9, provide convenient access to the site. The garden is connected by major roads, including the Gangseo Expressway, with clear signage directing visitors to the entrance. The site is about 1 kilometre from the Han River, offering a lush, green environment amidst the urban landscape.

Orientation:
The garden's design responds to the existing topography, integrating its innovative structures seamlessly into the surrounding greenery. The central glass dome, housing various climate-controlled biomes, is oriented towards the south to maximise sunlight exposure, reducing reliance on artificial lighting. The garden's layout has pathways and viewing areas offering scenic vistas to the west, where the Han River is located. The north and south axes are carefully aligned to optimize light and air circulation throughout the space, enhancing the garden's ecological balance and overall visitor experience.

Concept:
The garden features a unique architectural design with a 'flower-shaped' or 'flattened glass dome,' inspired from the structural cells of plants which contrasts with traditional dome structures. This design not only serves as a striking visual element but also enhances the visitor experience by offering varied perspectives and interactions with the natural environment.

Diverse Ecosystems and Thematic Zones:
Global and Local Flora: The garden showcases a range of ecosystems, from tropical rainforests to arid deserts, reflecting global biodiversity. It also includes areas dedicated to native Korean plants, celebrating local flora and heritage.

Thematic Gardens: By dividing the space into thematic zones, the garden offers visitors a journey through different climates and habitats. Each zone is carefully curated to simulate specific environmental conditions and provide immersive experiences.

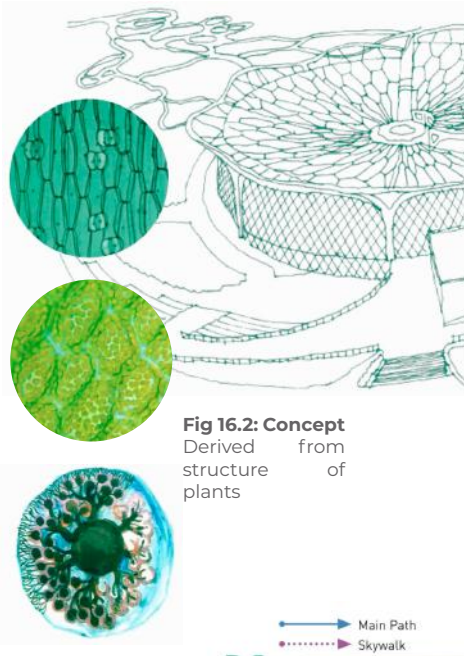
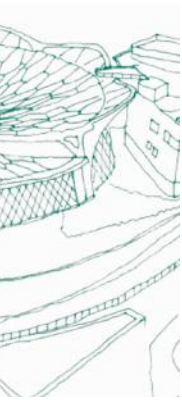


Fig 16.2: Concept
Derived from structure of plants

The design emphasizes sensory experiences, allowing visitors to engage with nature through sight, sound, and smell. The integration of water features, diverse plant zones, and interactive elements creates a multi-sensory environment that fosters a deep connection with nature.



Fig 16.3: Different zones in the greenhouse



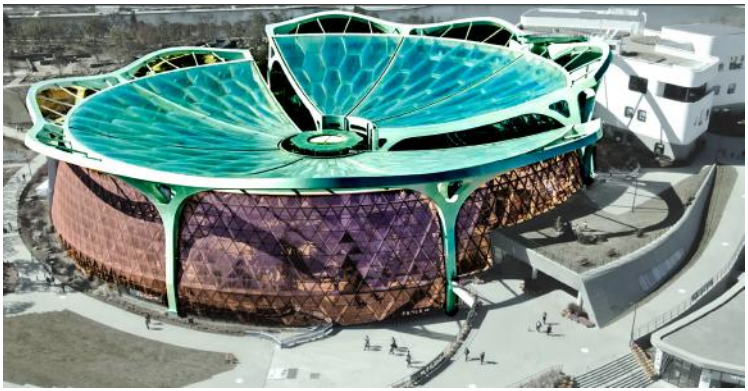


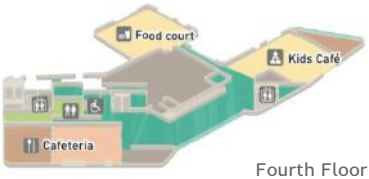
Fig 16.4: Components of greenhouse
Facade in brown and concave roof in green



First Floor



Second Floor



Fourth Floor

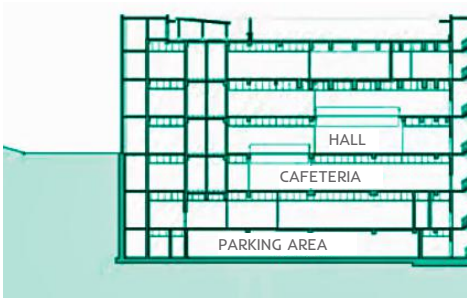


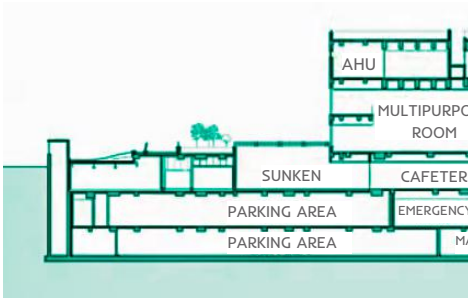
Fig 16.5: Floor Plans
Plan of the supporting building to the greenhouse

Structural Systems:
The Seoul Botanical Garden's structural system is a testament to modern engineering and architectural innovation. Key components of the garden's structural system include:

Circular Diagrid Framework:
The garden utilizes a diagrid structural system, characterized by a network of diagonally intersecting beams. This framework is a contemporary approach to construction that offers both aesthetic and functional benefits. This diagrid system is arranged in a circular pattern, creating a geodesic-like structure that supports the garden's expansive and complex roof. This circular arrangement is crucial for achieving the dome's flower-like shape and maintaining structural integrity. The diagrid system is constructed from steel, which provides both the strength needed for the large spans and the flexibility required to achieve the complex geometry.

Concave Roof:
The garden's conservatory features a concave roof design, which is lower in the center and higher at the edges. This bowl-shaped structure is constructed with a transparent steel frame, allowing for both structural support and maximum light transmission.







By distributing loads more efficiently, the diagrid system reduces the amount of material needed compared to traditional frameworks, contributing to the building's sustainability. The intersecting beams create a visually dynamic exterior, contributing to the garden's unique architectural appearance.



Fig 16.7: Construction
Different components joined together

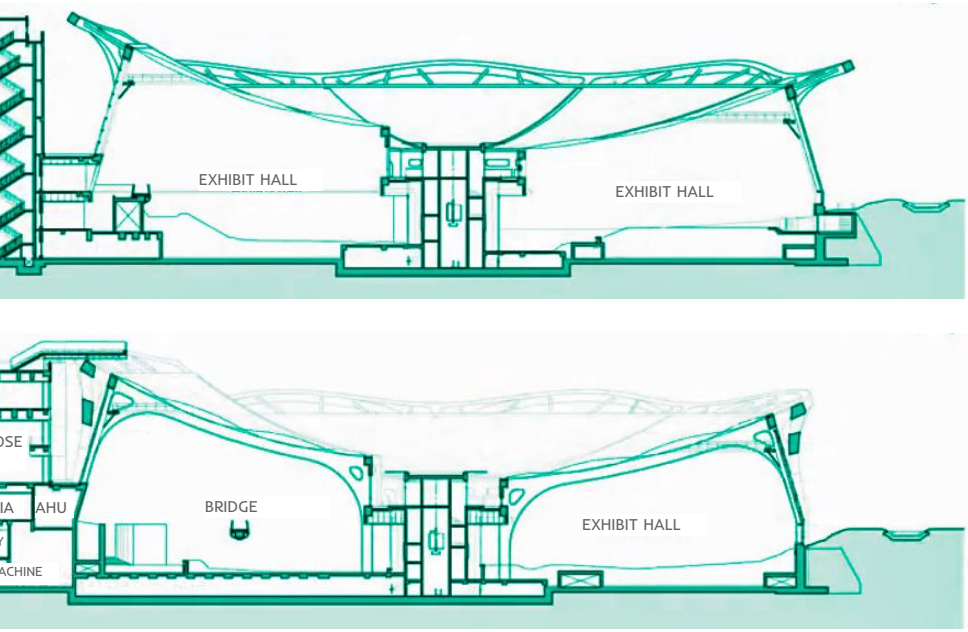


Fig 16.6: Sections
Different zones in the greenhouse

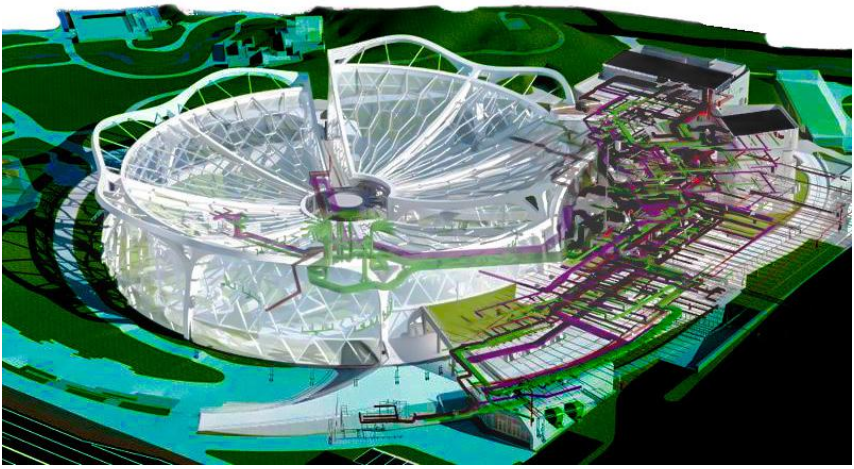


Fig 16.8: Biome Framework
Structural Frame with air ducts

Facade System:
Triangular Facade: The exterior walls of the garden feature a unique facade composed of interlocking steel triangles and inverted triangles. This geometric design not only adds to the building's visual interest but also contributes to its structural strength.

Visual Impact: The triangular pattern creates a dynamic and visually striking effect. The interplay of light and shadow on the geometric surfaces enhances the facade's aesthetic appeal, making it a prominent feature in the urban landscape.

ETFE Glazing: The facade incorporates ETFE (ethylene tetrafluoroethylene) glazing, a lightweight, transparent material. ETFE allows for excellent light transmission, which supports the garden's sustainable design goals and enhances the visibility of the plant displays inside.

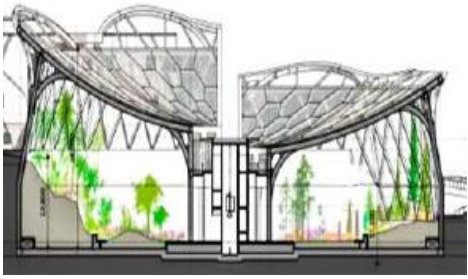


Fig 16.9: Roof section
Concave Roof



The facade's geometric design and the use of ETFE glazing help regulate the amount of natural light entering the building. This contributes to temperature control within the garden, reducing the need for artificial lighting and climate control systems. It was designed as an optimised environment for plants to grow inside the greenhouse from the initial design stage through analysing solar radiation and daylight inside the Botanic Park.





Fig 16.10: Inside the Garden
Different ecosystems and plants

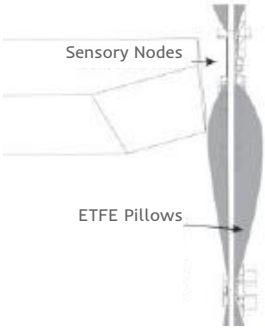




Fig 16.11: Roof top view
ETFE glazing with lighting



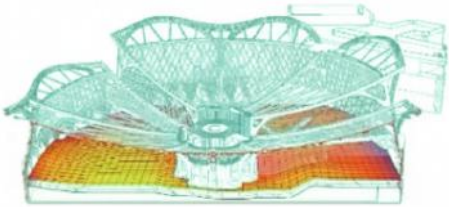


Fig 16.12: Daylight
Solar radiation analysis



Fig 16.13: Energy-efficient Lighting
Colored lighting





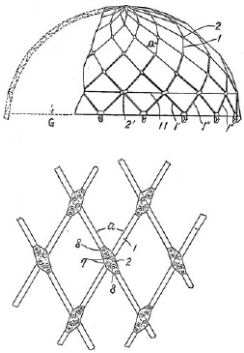




Fig 16.14: Facade
Glass facade with open-able units for ventilation and diagrid structural system



FLOATING ISLANDS

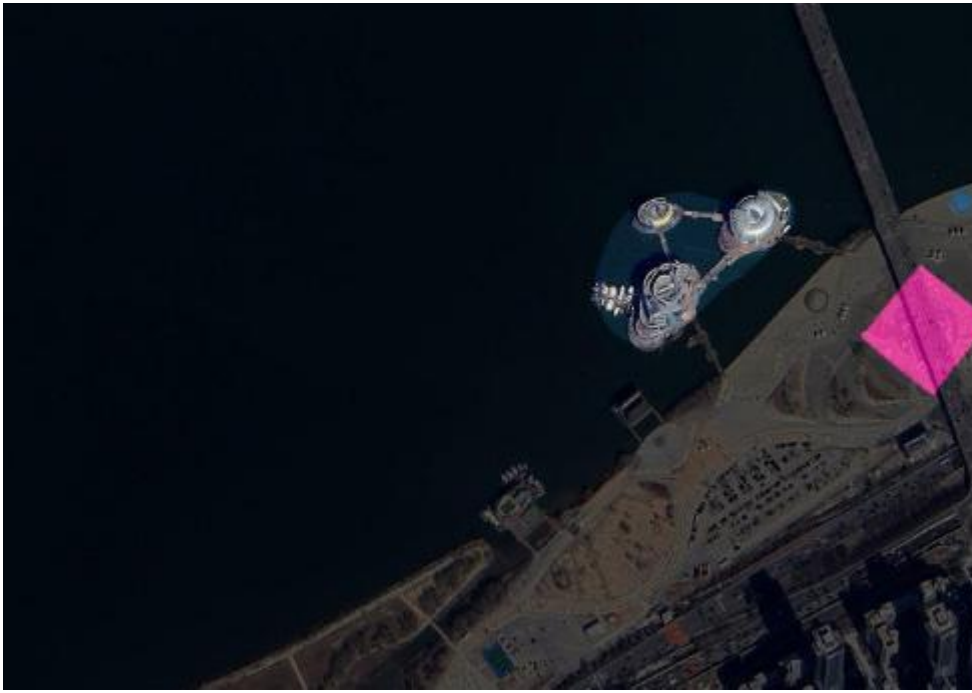
Coordinates : 37°30’29”N 126°59’31”E
Architecture Firm : Haeahn Architecture
Area : 9995 m²
Completion Year : 2011



SEOUL BOTANICAL GARDEN

Visually compelling Ensemble on the Water's Surface.

The Seoul Floating Islands are a component of a larger plan called the Han River Renaissance, which was started by the Seoul Metropolitan Government with the goal of programming and stimulating the aquatic landscape. H Architecture from New York and Haeahn Architecture from Seoul, collaboratively won a design competition to create the floating islands, a landmark destined to become a significant part of Seoul's cultural legacy. When completed, the islands were named "Sebit Dungdungseom" which translates to "3 Floating Lantern Islands".Built in an area of 9995 square meters the structure got completed in the year 2011, located beside the Han river in Yongsan-dong, Seoul.



Orientation depicted through the void spaces are integrated into the massing of the floating islands to create moments of visual contrast and spatial depth.



Fig 17.1: The Three Islands

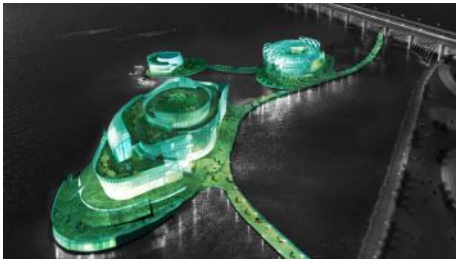
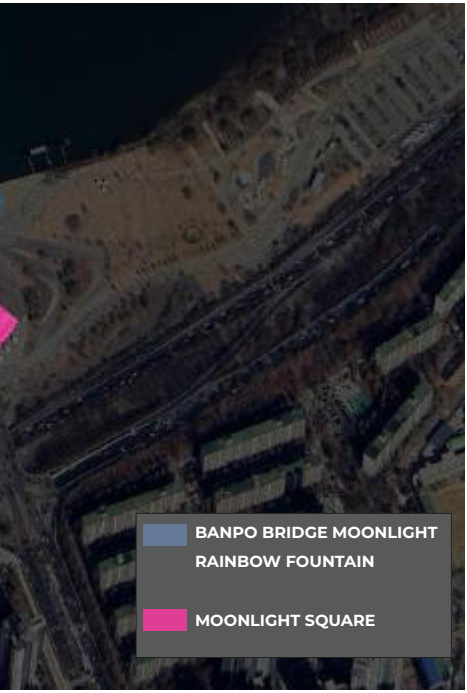


Fig 17. 2: Island structures connected through pathways.



Location:
The Floating Islands, situated on the Han River in Seoul, comprise a trio of interconnected structures near the Banpo Bridge, which links the districts of Seocho and Yongsan. Pedestrian bridges, meticulously designed to be visually captivating, provide seamless access from the mainland to the islands, enhancing their architectural allure.

Orientation and Climate Response:
Engineered for natural cooling and ventilation, the Floating Islands eliminate reliance on artificial climate control, emphasizing sustainability and community. Connected by waterways and enriched with communal spaces, they promote eco-conscious living. Powered by solar, wind, and hydrodynamic energy, the islands feature rooftops with solar panels and integrated wind turbines, enabling off-grid self-sufficiency. Rainwater harvesting and advanced water treatment systems turn precipitation into a vital resource, ensuring ecological health. Green spaces drape over structures and pathways, offering serene retreats while managing storm water and supporting food production through perma-culture gardens.

Form:
The design concept stems from the stages of a blooming flower: a seed, bud, and blossom. Each of the islands take on the form of one of these stages, manifesting as delicate yet bold structures of glass, wood, and steel.
The curved wall adds visual interest and dynamic character to the interior spaces of the Floating Island. Its smooth, flowing lines create a sense of movement and elegance, also matching with the curvilinear exterior of the structure.

Structural System:
The structure is floating on water and yet stable due to a mooring mechanism that is employed to stabilize the floating bodies against fluctuating water heights brought on by changes in the Han River's water levels during the rainy season.
Furthermore, the Dynamic Global Positioning System (DGPS) technology, which is capable of guaranteeing that the floating bodies always stay within the design parameters, will regulate even a small amount of drift off from the catenary shape.

All the three islands have a welded diaphragm-style steel structure that can withstand external shock. By enlarging the column and beam members, the curtain walls for exterior finishes without bracing rely on moment-resisting frames for a lateral load resistance system. Pin connections on base plates are used to create inclined columns.
The Vista, is built using truss systems that are more than 20 meters long and a sturdy frame with bay spacing of 10 to 13 meters. Aluminium panels and glass curtain walls are also utilized to improve the structural forms' clarity and transparency.

These marvels of modern engineering utilize sustainable materials like bamboo and recycled plastics, crafting spaces that float with the ebb and flow of our changing planet.



Fig 17.3: Framework
Circular form of the island achieved using steel cylindrical columns.

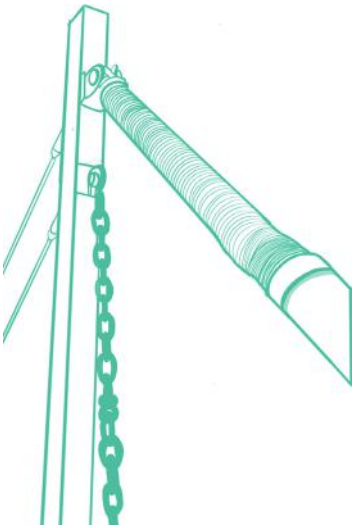




Fig 17.4: Anchoring ropes and columns

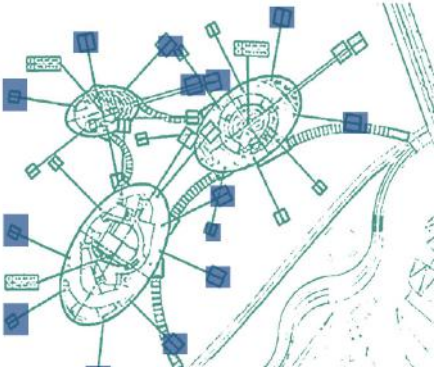
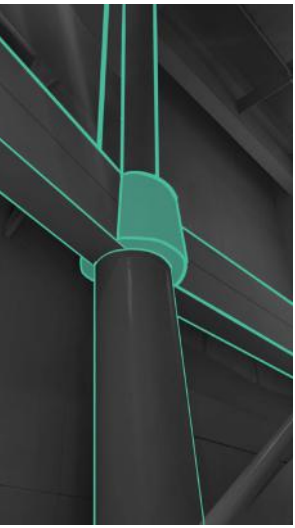
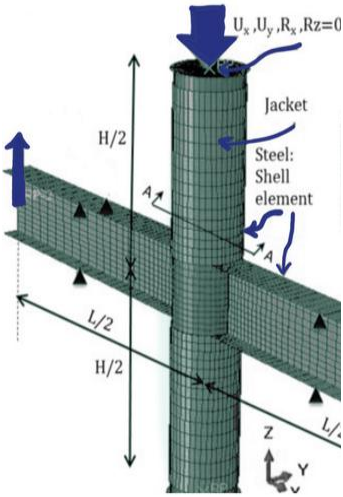


Fig 17.5: Anchor points in the water provide stability.



Fig 17.6: Columns
Slanting columns provide support to curved walls.





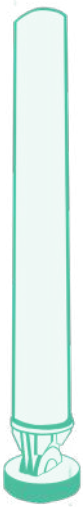


Fig 17.7: Ball and Pin column

Facade System:
The design of the exterior of the floating islands mimics the flow of water. the use of glass and aluminium reflects light and water, creating dynamic visual effects that change with the time of the day. A layered framework of connections has been used to create the glass facade.
At night, Floating Island comes alive with architectural lighting that illuminates its structures and highlights key features. Lighting design plays a crucial role in enhancing the night time ambiance of the island, creating a magical atmosphere for visitors.

Circulation:
Floating islands provide a unique and sustainable experience for visitors. Entry is through designated access points, often with interactive displays. Inside, visitors explore floating gardens and interactive exhibits. Circulation paths lead to observation decks and recreational spaces. The exit area includes facilities such as rest rooms and cafés. A series of interconnected volumes and forms that have been created that create a visually compelling ensemble on the water's surface. Cantilevered elements are strategically incorporated into the design of the floating islands to extend spatial boundaries. Floating islands offer connectivity through floating walkways, bridges, and board walks that connect the various zones such as floating gardens, wetlands, and observation decks.

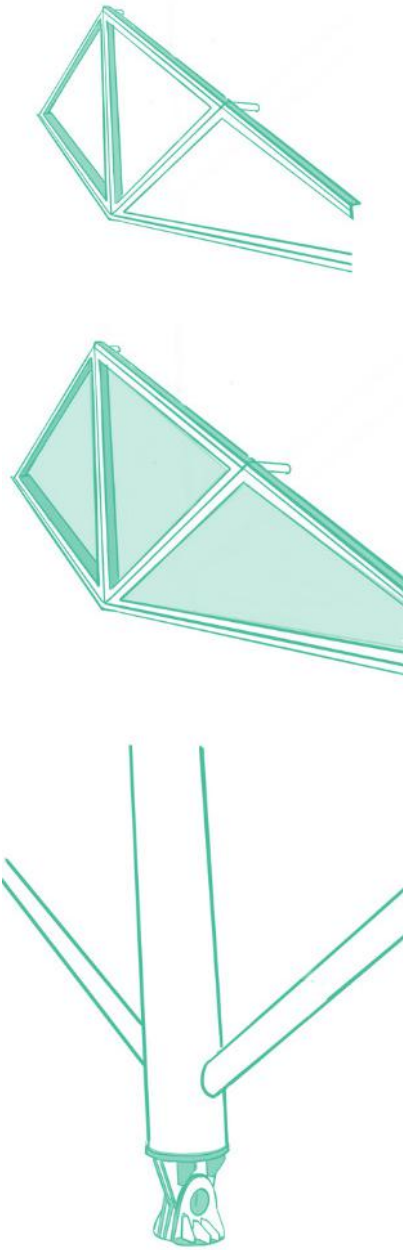


Fig 17.9: Facade Details depicting the layering of the facade.

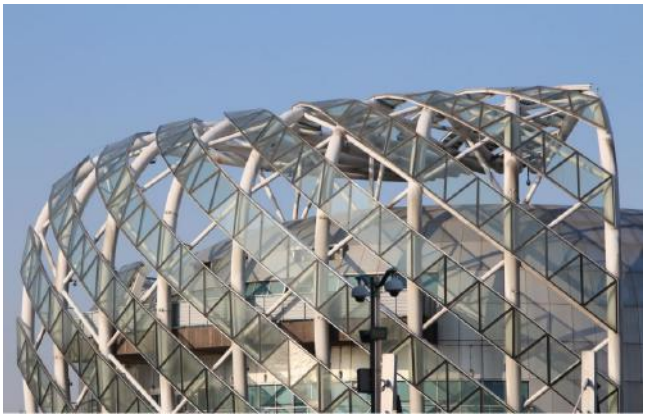


Fig 17.10: Circular glass facade supported over the external wall of the island.

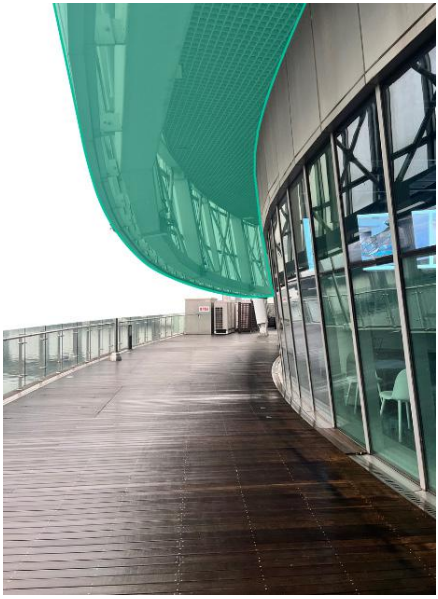


Fig 17.11: Extended Cantilevers



Fig 17.12: Steel and glass framework of the facade.

BIBLIOGRAPHY

List of Figures

Fig. 1.4, 1.7, 1.9, Fig. 1.10, Fig. 1.14: Abdel, H. (2024, June 26). National Aviation Museum of Korea / Haeahn Architecture. ArchDaily. https://www.archdaily.com/978246/national-aviation-museum-of-korea-haeahn-architecture. Accessed on February 4, 2024.

Fig. 1.11: irisworld. (2022, December 14). Getting closer to Korean aviation - TravelFeed. TravelFeed. https://travelfeed.com/@irisworld/getting-closer-to-korean-aviation. Accessed on January 26, 2024.

Fig. 2.2: Saemoonan Church | Seoinn Design Group | Archello. (n.d.). Archello. https://archello.com/project/saemoonan-church. Accessed on January 23, 2024.

Fig. 2.5 (left), 2.7, 2.8: AtelierKOMA, & AtelierKOMA. (2023, February 21). 새문안교회 - Atelier KOMA. Atelier KOMA. https://komalee.com/2019/11/01/%ec%83%88%eb%ac%b8%ec%95%88%ea%b5%90%ed%9a%8c-3/. Accessed on February 9, 2024.

Fig. 2.1, 2.4, 2.5 (right): Luco, A. (2024, July 22). Saemoonan Church / Seoinn Design Group + Lee Eunseok. ArchDaily. https://www.archdaily.com/923823/saemoonan-church-seoinn-design-group-plus-lee-eunseok. Accessed on February 1, 2024.

Fig. 3.1, 3.2, 3.4: Time and space flowing up and down the ground. (2023, November 23). C3GLOBE. https://c3globe.com/2023/11/24/seosomun-historic-park-and-museum-of-holy-land-by-void-architects/. Accessed on January 29, 2024.

Fig. 3.3: Kung, Shin-moon. (2014, July 13). 서소문밖 역사유적지 설계공모 [Design competition for historical sites outside Seosomun]. 라펜트 조경뉴스. https://lafent.com/photo/news_view.html?news_id=112202&mcd=H15&page=9&cs=03. Accessed on February 2, 2024.

Fig. 3.4, 3.5: SPACE-Seosomun Shrine History Museum. (n.d.). https://vmspace.com/eng/project/project_view.html?base_seq=NzY5&page=22. Accessed on January 31, 2024.

Fig 4.1, 4.4, 4.5, 4.8, 4.9: Dominique Perrault Architecture · Ewha Womans University. (n.d.). Divisare. https://divisare.com/projects/201254-dominique-perrault-architecture-ewha-womans-university

Fig. 5.8: War Memorial Painting The picture of Peace - Google Arts & Culture. (n.d.). Google Arts & Culture. https://artsandculture.google.com/story/war-memorial-painting-the-picture-of-peace-war-memorial-of-korea/OQWh0dTPErHYiA?hl=en

Fig. 5.9: Lee, J. H. (2024). Public Memory, architectural language, and its configurational Relationship in the Memorial Museum: A case study of the War Memorial of Korea using space Syntax and movement tracking. Buildings, 14(3), 590. https://doi.org/10.3390/buildings14030590 Accessed on January 25, 2024.

Fig. 6.1: Amorepacific - AP Group. (2017, November 13). Amorepacific Group opens its third era in Yongsan | Amorepacific. https://www.apgroup.com/int/en/news/2017-11-13.html. Accessed on January 30, 2024.

Fig. 6.2, 6.3, 6.5 (left), 6.6, 6.11, 6.12, 6.13: Luco, A. (2024, July 22). AmorePacific Headquarters / David Chipperfield Architects. ArchDaily. https://www.archdaily.com/915298/amorepacific-headquarters-david-chipperfield-architects. Accessed on February 6, 2024.

Fig. 6.8: Sld, T. (2023, January 23). Case study Amorepacific Headquarters, South Korea. SLD. https://www.slightingdesign.com/post/case-study-amorepacific-headquarters-south-korea. Accessed on February 7, 2024.

Fig. 6.5, 6.9: Amorepacific headquarters publication. (n.d.). https://davidchipperfield.com/projects/amorepacific-headquarters. Accessed on February 3, 2024.**Fig. 8.1, 8.4, 8.12:** Dongdaemun Design Plaza – Zaha Hadid Architects. (n.d.). https://www.zaha-hadid.com/architecture/dongdaemun-design-park-plaza/. Accessed on January 20, 2024.

Fig. 7.8: Headcanfan, V. a. P. B. (2017, August 2). Seoul – The War Memorial of Korea , Interior Galleries. Jalan Kopi Makan Pics. https://jalankopimakanpics.wordpress.com/2017/03/02/seoul-the-war-memorial-of-korea-interior-galleries/ Accessed on January 25, 2024.

Fig. 8.2, 8.3: Yoon S. Lee. (2014, April 14). Dongdaemoon Design Plaza-Zaha Hadid(2008,DD~CD stage). Behance. https://www.behance.net/gallery/16089751/Dongdaemoon-Design-Plaza-Zaha-Hadid(2008DDCD-stage)?isa0=1#. Accessed on January 25, 2024.

Fig. 8.8: Dongdaemun Design Plaza & Park – Dongdaemun, Seoul, South Korea. (2022, March 28). AEWORLDMAP.COM. https://aeworldmap.com/2022/03/28/dongdaemun-design-plaza-park/. Accessed on February 8, 2024.

Fig. 8.10, 8.11: Aguilar, C. (2024, August 1). Dongdaemun Design Plaza / Zaha Hadid Architects. ArchDaily. https://www.archdaily.com/489604/dongdaemun-design-plaza-zaha-hadid-architects. Accessed on February 5, 2024.

Fig. 8.13: Zaha Hadid – DD Plaza Seoul Korea-9. (n.d.). ELUXNET. https://eluxnet.com/portfolio-posts/zaha-hadid-dd-plaza-seoul-korea-9/. Accessed on February 10, 2024.

Fig. 9.1: 삼성미술관 리움. (n.d.). https://www.samoo.com/home/works/view.dopzCode=&viewType=&kwrdContents=&cntntsCtgryCodeList=03&lang=ko. Accessed on January 24, 2024.

Fig. 9.2: https://english.seoul.go.kr/songpa-book-museum/. Accessed on January 28, 2024.

Fig. 9.3, 9.5: A bookcase immersed in a green park. (2023, May 9). C3GLOBE. https://c3globe.com/2023/05/10/songpa-book-museum-by-kunwon/. Accessed on February 6, 2024.

Fig. 10.3, 10.5, 10.9: Winstanley, T. (2024, July 14). In progress: Lotte World Tower / KPF. ArchDaily. https://www.archdaily.com/262072/in-progress-lotte-world-tower-kpf Accessed on January 25, 2024.

Fig. 11.8: 페이지를 찾을 수 없음 – CENOPLAN. (n.d.). https://cenoplan.com/board/data/file/inter01_01/32256356_1ObUmEqd_Starfield_Library_17.jpg

Fig. 12.2: Jan Kratochvíl. (n.d.). Archiweb - Leeum - Samsung Museum of Art. Archiweb. https://www.archiweb.cz/en/b/leeum-umelecke-muzeum-samsung. Accessed on February 1, 2024.

Fig. 12.4: 리움미술관. (2014, November 7). 삼성미술관 Leeum 건축물 소개 -

기획전시장 (삼성아동교육문화센터) [Video]. YouTube. https://www.youtube.com/watch?v=PMTZMzOqwpA. Accessed on January 27, 2024.

Fig. 12.5, 12.7: Leeum, Samsung Museum of Art — Ateliers Jean Nouvel. (n.d.). Ateliers Jean Nouvel. https://www.jeannouvel.com/en/projects/musee-leeum/. Accessed on January 29, 2024.

Fig. 12.8, 12.9: https://www.botta.ch/en/SPAZI%20DELLA%20CULTURA?idx=10. Accessed on January 21, 2024.

Fig. 12.10, 12.11: Leeum: Samsung Museum of Arts; Seoul, Korea. (2013, October 13). https://architecture-library.blogspot.com/2013/10/leeum-samsung-museum-of-arts-seoul-korea.html. Accessed on January 31, 2024.

Fig. 12.12: 리움미술관. (2014, November 7). Introduction to Leeum Architecture - MUSEUM 1 [Video]. YouTube. https://www.youtube.com/watch?v=SLzhsSYxq3c. Accessed on February 9, 2024.

Fig 13.2, 13.4, 13.7: GT Tower East - ConvexArchitecten. (n.d.). https://convexarchitecten.nl/projecten/kantoren/gt-tower-east Accessed on February 9, 2024.

Fig 14.3, 14.4, 14.5: Rshp. (n.d.). Parc.1 – Mixed Use – Projects – RSHP. https://rshp.com/projects/mixed-use/parc-1/ Accessed on January 21, 2024.

Fig 15.1, 15.6, 15.7, 15.9: Morphopedia - architecture. (n.d.). https://www.morphosis.com/architecture/261/ Accessed on January 30, 2024.

Fig. 16.1, 16.2, 16.6, 16.7, 16.12: SAMOO Architectural Portfolio. (2020, November 26). SEOUL BOTANIC PARK_Design Description [EN ver.] [Video]. YouTube. https://www.youtube.com/watch?v=p7axMd1oJpo. Accessed on February 4, 2024.

Fig. 16.3, 16.5: https://botanicpark.seoul.go.kr/front/img/English_Guide440X460.pdf. Accessed on January 30, 2024.

Fig. 16.8: 마곡중앙공원 조성공사 시공단계 용역 > BIM Implementation | ARCHITOPKL. (2016). http://www.architop.com/board/board/m31/114/?&sca=2016. Accessed on January 22, 2024.

Fig. 16.13: Seoul Botanic Park, South Korea – darc awards. (n.d.). https://darcawards.com/portfolio/seoul-botanic-park-south-korea/. Accessed on January 26, 2024.

Fig. 16.10, 16.14: Seoul Botanic Park. (n.d.). https://www.samoo.com/home/works/view.do?cntntsSn=18020. Accessed on February 2, 2024.


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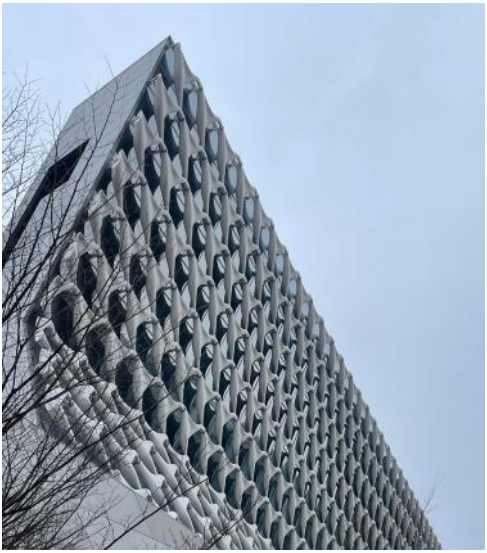








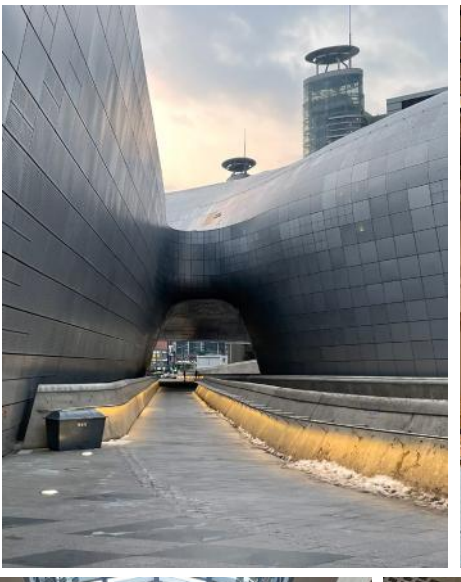


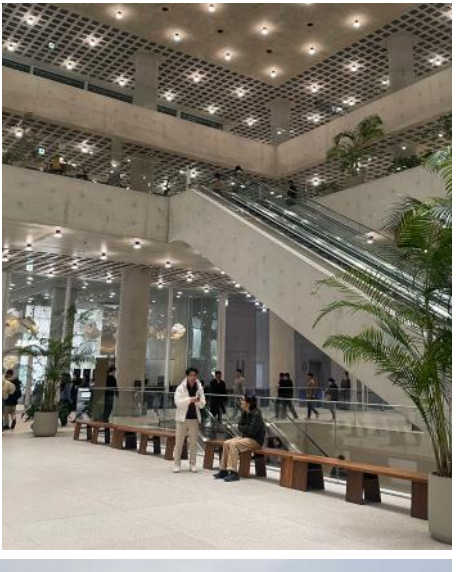












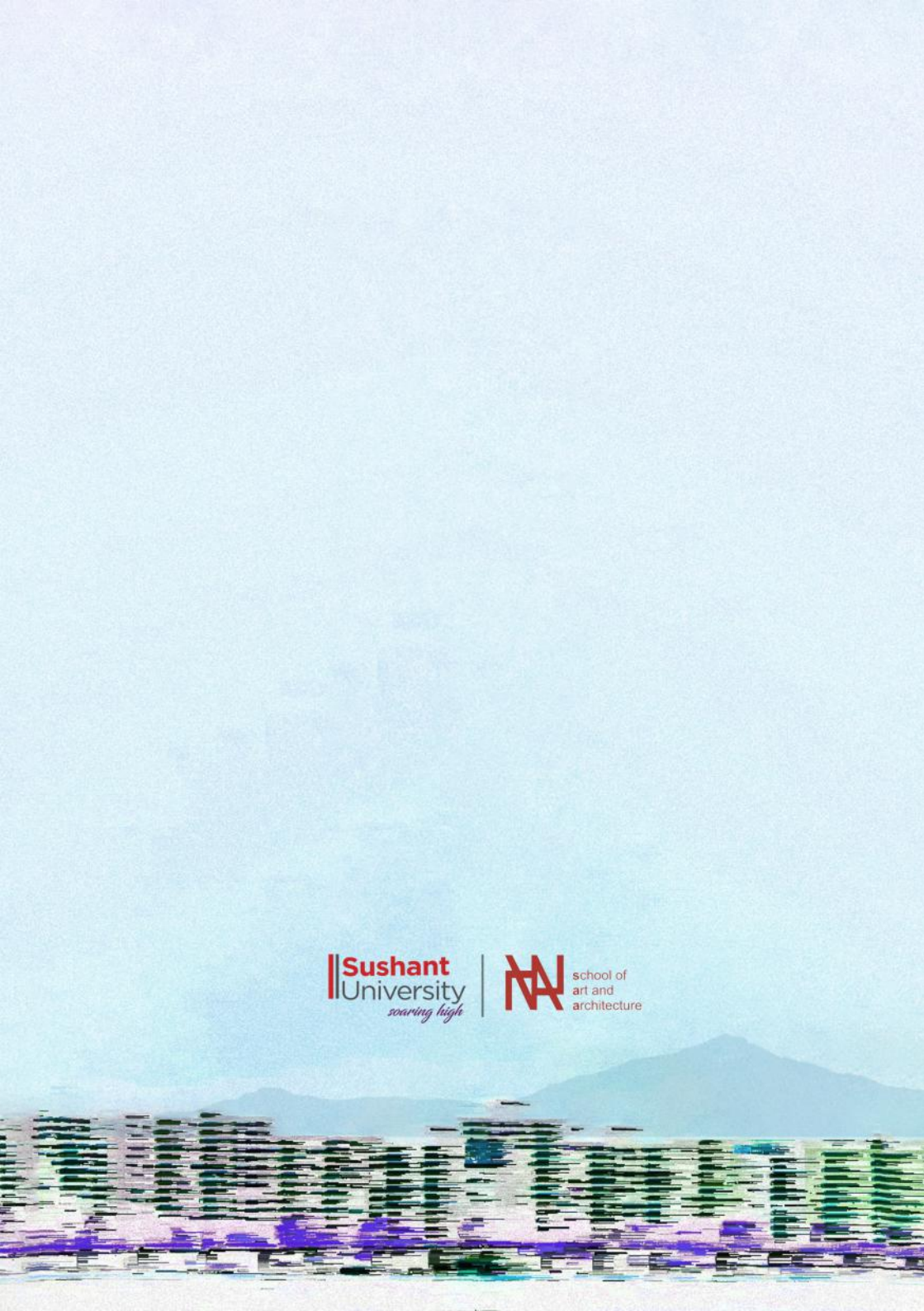



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