

Students' works

Term Projects (1st Year Sustainable Architecture):

Samples of 1st Year Students' works, Fall 2021-2022

Course ARC111: Architectural Design Studio 1.

Project: Sea-Front Chalet in North Coast.





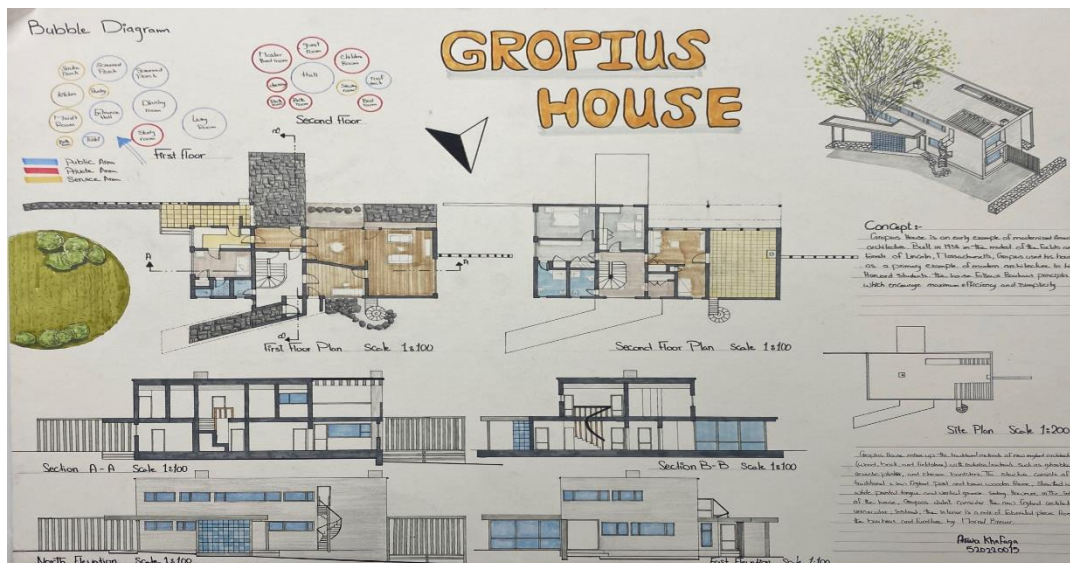
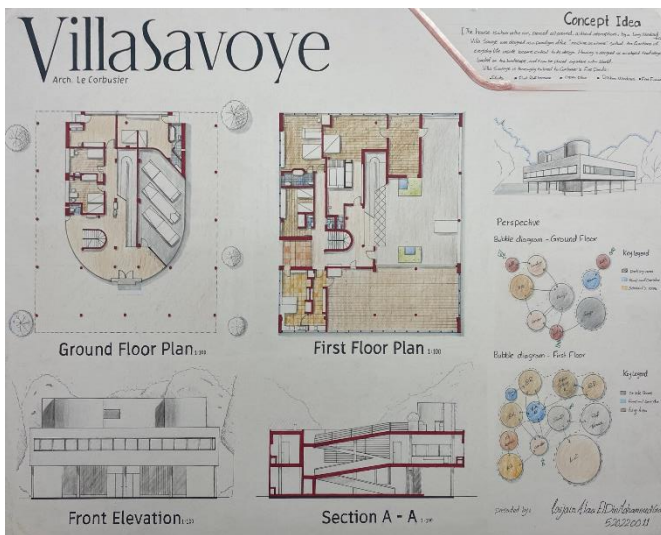
Course ARC112: Architectural Model Making.

Project: Cubical geometrization of Architectural forms.





Course ARC111: Architectural Design Studio 1

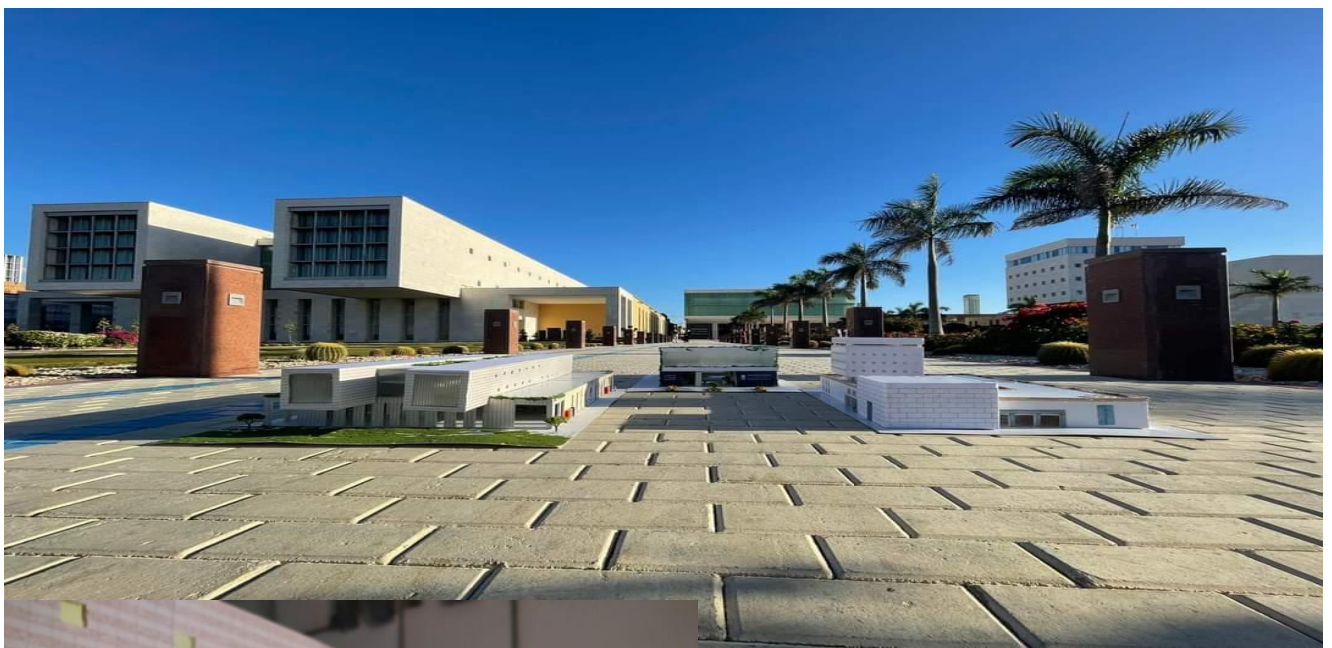


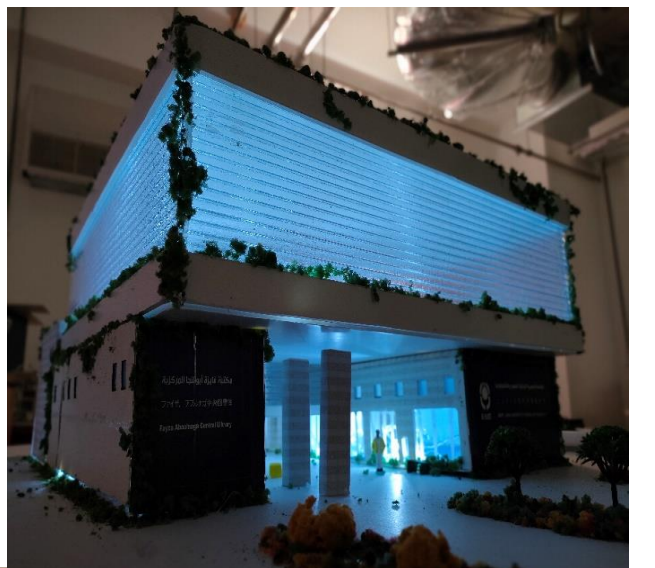
Course ARC112: Architectural Model Making.

Project: Architectural Presentation Model of a single family residential building.

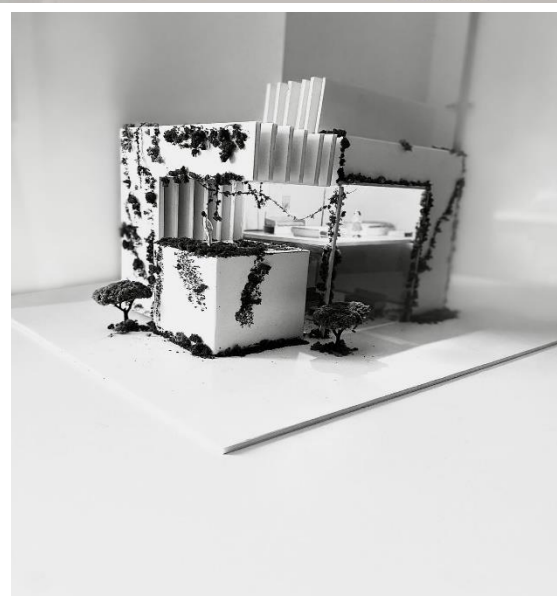


Level 1 students work in Architectural Model Making course (2022-2023)





Model making course first project samples for students' kept work
Project: CUBIC MODEL



Term Projects (2st Year Sustainable Architecture):

Course : Architecture History and Theory



Famous Japanese Architects

JAPANESE ARCHITECTURE



Kazuyo Sejima

Born: October 29, 1956 (age 66 years), Hitachi, Ibaraki, Japan.
 Graduated in 1987 and received her master's degree in architecture from Japan Women's University in 1981 and set up her own practice in 1987 with the name Kazuyo Sejima & Associates, which turned later into SANAA in 1993 following a collaboration with Ryue Nishizawa. Right after two years, both pursued individual practices. Worth mentioning, in 2010, Sejima was the second woman to receive the Pritzker Prize, which was awarded jointly with Ryue Nishizawa.

Style & Inspiration

Her major concern about any project is the spaces' user usage and potential adaptation, which clarifies why she didn't consider any project completed till the user brought his activities into it. Following this philosophy, she usually adds large windows to allow natural light to enter a space and create fluid transition between interior and exterior, blending the building's interior with the outdoor spaces, which perfectly elaborate her usage of glass.



De Kunstlinie Theater and Cultural Center

The building is partly anchored to the shore grounds and partially resting on piles over the water along being sectorized in orthogonal spaces of different size as a series of attached rectangles. Once more, Sejima followed her main concern of creating a visual connection between the building interior and opening it up to the surrounding lake landscape using the glass on the perimeter facades and in interior courtyards. Circulating inside the de Kunstlinie resembles wandering through a series of rooms, differing in areas depending on their relationship with the water at the perimeter.



Saisshunkan Selyaku Women's Dormitory

The dormitory serves as home for eighty women during their first year as employees of a local company, highlighting the concept of low communal spaces are more important than that of individual ones. For instance, the private areas are limited to bedrooms of minimum dimensions for four persons, open to a terrace and tucked in two parallel rows on a longitudinal axis on ground floor. In addition, the interior spaces are set out as the extension of the urban context, linking up directly with the street through large windows on the four facades that facilitate natural lighting.

Onishi Hall

Spreading out on a park, the public facility, including an administration center, a sports hall and an auditorium, divides its program into three delicate single-story ameba-shaped pavilions. The connection and expansion of its boundaries creates ambiguous situations between the interior and exterior character of the spaces; on the other hand, the transparency of the enclosures show what is going on inside the building and helps to create a civic center, where users and their actions are the most important element of the architecture.



Toyo Ito Museum of Architecture

This is the first museum of contemporary architecture in Japan. The museum consists of two buildings: the Steel Hat exhibits the works of the architect Toyo Ito, while the Silver Hat is the relocated and converted former residence of the architect. Inside the museum, architectural models are displayed as if they were islands floating on the clear blue water of the Soto Island Sea. In the dark-blue carpeted room round white cushions are set like clouds over the sea, visitors can make themselves at home and enjoy the displays and the exhibition space while sitting or lying down. Get taken away in this uniquely designed museum as you lose all sense of dimension and space.

NAGUIISA



In order to achieve a sense of fluidity, the rigid layout was dissolved with a series of curving walls. Emphasis was placed on ensuring a natural flow of light because "in Baroque art, light symbolizes a revelation from god opposing the darkness of ambivalence" declared the design team. They also explained that the museum must remain environmentally responsible, establishing a strong relationship with nature. It is located in a park that, for the past four years, has devised programs focusing on the interaction between humans and nature.

The Sendai Mediatheque

Like others of Ito's designs, characteristically evoked imagery from the natural world, reflecting his belief that "all architecture is an extension of nature". Similarly, the Kaohsiung (Taiwan) National Stadium (2009) possessed a monumental spiral-shaped roof resembling a coiled snake.

Toyo Ito

June 1, 1941, Seoul, Korea
 Toyo Ito, Japanese Ito Toyo-o, Japanese architect known for his innovative designs and for taking a fresh approach to each of his projects. Ito held that architecture should consider the senses as well as physical needs, and his philosophy doubtless contributed to the considerable critical and popular response his works received. In 2013 he was awarded a Pritzker Architecture Prize. In his opinion, the Pritzker jury stated that "his architecture projects an air of..."



Style & Inspiration

It explains that he sought to go beyond conventional boundaries of architecture and what a building should be, through minimalism and a variety of forms. He also leaned towards developing lightness in architecture seeking freedom from the rigidity of a grid. Ito is interested in relationships — between rooms, exterior and interior, and building and surroundings. Toyo Ito's work has drawn an inspiration from the principles of nature, as evidenced by the unity achieved between organic-like structures, surface and skin that resembles air and wind.



Kisho Kurokawa

1934-2007
 Kisho Kurokawa was a prominent Japanese architect that was born in Nagoya. He studied architecture at Kyoto University and later received a Master's degree in Architecture from the University of Tokyo. He was one of the founders of the Metabolism movement in the 1960s.

Style & Inspiration

He was known for his unique style of architecture that was heavily influenced by the Metabolism movement and traditional Japanese design. He was inspired by the most famous Japanese architect, Kenzo Tange. Kurokawa believed that a successful design should be both functional and beautiful. He also emphasized the importance of sustainability in design, and was a proponent of using environmentally-friendly materials and technologies.

Nakagin Capsule Tower

Is a representative work of the Japanese architectural movement called "Metabolism" that features 140 prefabricated capsules serving as individual living and working spaces. It is composed of two interconnected concrete towers. The design anticipates change and growth by replacement or removal of the capsules; the appearance of the architecture changes over time. This building reflects the asymmetry that is part of Japanese traditional architecture.



National Art center

Is a melting pot of culture, reflected in its large central exhibition space and the fluid and organic shape of the building. The use of glass and natural light creates a sense of openness and transparency, while the absence of a permanent collection allows for flexibility in exhibition layout. Located in Roppongi, the museum serves as a cultural hub and destination for visitors; the design provides a dynamic space for contemporary art exhibitions.

The Hiroshima City Museum of Contemporary Art

The museum's design reflects the theme of "re-birth" and the city's history of destruction and resilience. The building's shape resembles a bird in flight. Concrete and glass are used to create a modern and industrial aesthetic, while the interior spaces are flexible and adaptable for various exhibitions. The museum features a unique triangular shape and showcases contemporary art from the post-World War II era to the present day.



Louvre-Lens Museum

Located in Lens, France, 200 kilometers north of Paris. It reflects elegance with a strong identity and integration with the surrounding landscape. Emphasize the art exhibits with minimalist furnishings, natural light, and durable, sustainable materials. Ensure practicality with efficient use of space, proper ventilation, lighting, and security measures.



Teshima Art Museum

This museum is located on a small island in Japan and is designed to reflect the surrounding landscape. The roof of the building is a single, undulating surface that dips and curves in response to the topography of the site. Inside, visitors are treated to a serene, open space that invites contemplation.



Moriway House

This residential project is located in Tokyo and consists of ten separate structures connected by a series of narrow pathways and courtyards. The intent was to create a sense of community and connection between residents, while also providing privacy and personal space.

Ryue Nishizawa

1966-2023
 Ryue Nishizawa was born in 1966 in Kanagawa, Japan. He graduated from Yokohama National University in 1990 and then went on to study architecture at the University of Tokyo, where he received his Master's degree in 1998. In 1995, he co-founded SANAA with Kazuyo Sejima, which won the Pritzker Architecture Prize in 2010. He currently teaches at Yokohama Graduate School of Architecture.



Style & Inspiration

Ryue Nishizawa's architecture style is characterized by a minimalist and ethereal approach that emphasizes simplicity, lightness, and openness. He is known for his use of unconventional forms, such as undulating roofs and organic shapes, that blur the boundaries between interior and exterior spaces. Nishizawa's designs often prioritize natural light and views of the surrounding landscape, creating a sense of harmony between the built environment and the natural world. His work is also notable for its attention to detail, with a focus on the quality of materials and the craft of construction. Overall, Nishizawa's architecture embodies a sense of tranquility and contemplation, inviting visitors to engage with their surroundings in a thoughtful and meaningful way.



Fumihiko Maki

1928-2023
 Fumihiko Maki is a Japanese architect, urban designer, and educator. He was born in Tokyo in 1928. He received a degree in architecture from the University of Tokyo in 1952. After working with eminent Japanese architect Kenzo Tange, he became a teaching assistant at Washington University in St. Louis, where he served as a faculty member for over a decade.

Style & Inspiration

Maki's work is known for its modernist and minimalist approach, which blends Japanese tradition and Western modernism. His notable works include the Tokyo Metropolitan Gymnasium, the Hillside Terrace complex in Tokyo, the Museum of Modern Art in Kyoto, and the Spiral Building in Tokyo. Maki has received numerous awards throughout his career, including the Pritzker Architecture Prize in 1993, the American Institute of Architects Gold Medal in 2011, and the Royal Institute of British Architects International Fellowship in 2020. He continues to practice architecture and urban planning through his firm, Maki and Associates and has been a professor at the Harvard Graduate School of Design since 1990.



Tokyo Metropolitan Gymnasium

Located in Tokyo, Japan, it was built in 1954 for the World Wrestling Championships. The gymnasium is known for its distinctive roof, which is shaped like a series of interconnected polygons.

The Hillside Terrace complex in Tokyo

The Hillside Terrace Complex is a collective form that has developed over seven phases since 1969. A variety of design strategies are used to create its unique atmosphere, including deference to subtle topographical changes, spatial layering, and the creation of protected exterior public space. The success of this project is a result of spatial and architectural means (scale, transparency).



The Museum of Modern Art in Kyoto

The Museum of Modern Art in Kyoto is a fascinating blend of modern and traditional Japanese architecture. The building features sleek glass panels and bold lines, while also incorporating elements of traditional Japanese design, such as a bamboo grove and a courtyard with a serene pond. The use of natural light throughout the museum creates a soft and calming space for visitors to appreciate art. The spacious galleries provide ample room for large installations and interactive exhibits, while the rooftop garden offers stunning views of the city.



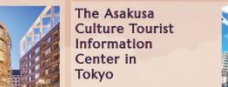
V&A Dundee

Scotland's design
 V & A Dundee was designed by renowned award-winning Japanese architects Kengo Kuma & Associates, following an international competition, and is Kuma's first building in the UK. Considered by many as the quintessential Japanese architect of today, Kuma is also designing the stadium for the Tokyo 2020 Olympics.



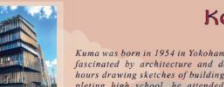
The Exchange in Sydney

AmThe Exchange is Sydney's significant project in 2018. The mixed-use development comprises two towers made primarily of San Francisco red brick and timber. The development integrates with the design of the surrounding buildings, paying tribute to the historical architecture in the area.



The Asakusa Culture Tourist Information Center in Tokyo

One notable project by Kuma is the Asakusa Culture Tourist Information Center in Tokyo which was completed in 2012. The building consists of three floors connected by a spiral ramp which leads visitors up through an open-air atrium to an observation deck on top of the building providing panoramic views over central Tokyo.



Kengo Kuma

Kuma was born in 1954 in Yokohama, Japan. As a child, he was fascinated by architecture and design, often spending long hours drawing sketches of buildings and structures. After completing high school, he attended the University of Tokyo's School of Architecture where he earned both his undergraduate degree in 1979 and a Ph.D. in 1980.



Style & Inspiration

Kengo Kuma is one of the most renowned architects in the world. He has won numerous awards and has been praised for his innovative designs and unique approach to architecture. Kuma's work is notable for its use of natural materials, minimalist style, and incorporation of traditional Japanese architecture. His achievements have cemented him as a modern-day master of his profession. Through his work, Kuma continues to inspire other architects to create sustainable designs that are mindful of human experience while promoting harmony.



Under Supervision of Prof. Ehab El Wageh

Class of 2027

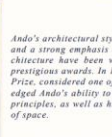
ARC121



Poly grand theatre
 The Church of the Light embraces Ando's philosophical framework through the way nature and architecture define and create new spatial perceptions equally, if not more so, as that of his concrete structures. Church of the Light was a renovation to an existing Christian compound in Ibaraki. The new church was the first phase to a complete redesign of the site - later completed in 1999 - under Ando's design aesthetic.



Studio of Light 4x4 House
 This building located in Kobe is powerful in its simplicity. It was the result of a magazine competition which saw Ando create a structure adapted to the specific requirements of the site which was greatly influenced by the Hanshin earthquake that devastated the area less than 10 years before. Situated on the Hyogo coast, each floor of these buildings is a concrete mass, which comes together to act like a lighthouse, offering incredible views of the ocean below.



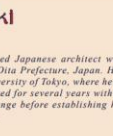
National Art center
 The Palau Sant Jordi in Barcelona, Spain. Completed in 1990, the Palau Sant Jordi was designed to host the 1992 Summer Olympics and Paralympics. The building's design is characterized by its sweeping curves and futuristic look, which was meant to reflect the spirit of the Olympics. The Palau Sant Jordi features a large arena that can seat up to 17,000 people, as well as a smaller arena that can accommodate up to 3,500 people. The building also includes a range of other facilities, including a swimming pool, a gymnasium, and a media center. Today, the Palau Sant Jordi continues to be an important venue for sporting and cultural events in Barcelona. And Isozaki's design remains a testament to his innovative approach to architecture and his ability to create buildings that are both functional and beautiful.



Tadao Ando
 September 13, 1941, Osaka, Japan
 Ando's architectural style is characterized by clean lines, geometric forms, and a strong emphasis on the use of concrete. Ando's contributions to architecture have been widely recognized, and he has received numerous prestigious awards. In 1995, he was honored with the Pritzker Architecture Prize, considered one of the highest honors in the field. The prize acknowledged Ando's ability to blend modernism with traditional Japanese design principles, as well as his sensitivity to the spiritual and emotional aspects of space.
 Style & Inspiration
 Ando's mastery lies in his ability to manipulate concrete, transforming it into a material that creates light-filled spaces and evokes a sense of tranquility. Ando's architectural creations continue to inspire architects and enthusiasts worldwide. His minimalist aesthetic, thoughtful use of materials, and attention to the interplay of light and space have made a lasting impact on the architectural landscape.



Arata Isozaki
 1931-2022
 Arata Isozaki is a renowned Japanese architect who was born on July 23, 1931, in Oita Prefecture, Japan. He studied architecture at the University of Tokyo, where he graduated in 1954. He then worked for several years with the renowned architect Kenzo Tange before establishing his own architectural firm in 1963.



The Museum of Contemporary Art in Los Angeles
 The Museum of Contemporary Art in Los Angeles, also known as MOCA, is one of Isozaki's most iconic works. Completed in 1986, the museum was designed to showcase contemporary art in a space that reflected the modern spirit of the city. The building's design features a series of interconnected galleries that are arranged around a central courtyard. The galleries are connected by a series of bridges and walkways that allow visitors to move freely throughout the space. The exterior of the building is clad in white marble and features a series of geometric shapes that give it a distinctive, futuristic look. The building also includes a range of other facilities, including a swimming pool, a gymnasium, and a media center. Today, the Palau Sant Jordi continues to be an important venue for sporting and cultural events in Barcelona. And Isozaki's design remains a testament to his innovative approach to architecture and his ability to create buildings that are both functional and beautiful.



The Qatar National Convention Center in Doha
 The Qatar National Convention Center in Doha, Qatar, is a modern architectural landmark. Completed in 2011, the center is a prime example of sustainable architecture, with its design incorporating a range of green building features. The building's design is characterized by its sweeping curves and futuristic look, which was meant to reflect the spirit of the Olympics. The Palau Sant Jordi features a large arena that can seat up to 17,000 people, as well as a smaller arena that can accommodate up to 3,500 people. The building also includes a range of other facilities, including a swimming pool, a gymnasium, and a media center. Today, the Palau Sant Jordi continues to be an important venue for sporting and cultural events in Barcelona. And Isozaki's design remains a testament to his innovative approach to architecture and his ability to create buildings that are both functional and beautiful.



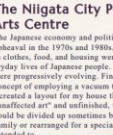
Yamanashi Fruits Museum
 The Fruit Museum in Japan's Yamanashi Prefecture, which is close to Mount Fuji, was created by Itoko Hasegawa. In 1997, it was finished. The three shell-shaped structures stand as a testament to Hasegawa's knowledge, desire, and sensuality. White light pours through screened construction in a paradisaical greenhouse as a manifestation of contextual ecology. This engineering achievement of a curved exoskeleton structure was done by Atrop in a broad sense, the structures serve as creative trees that inspire visitors to disseminate awareness of our fragile environment and, ideally, create green structures themselves.



The Niigata City Performing Arts Centre
 The Japanese economy and politics underwent significant upheaval in the 1970s and 1980s, and many new concepts in clothes, food, and housing were introduced into the everyday lives of Japanese people. Homeowners' lifestyles were progressively evolving. Finally, we came up with the concept of employing a vacuum to create something good. I created a layout for my house that might be described as "unfinished art" and unfinished, with vacant spaces that could be divided up sometimes based on the size of the family or rearranged for a special occasion. In the end, I intended to turn the empty room into a neighborhood where people might live freely.



Shonandai Cultural Center
 This project was designed to complement Shonandai Park by burying difficult program aspects below. The massive above ground is made up of symbolic shapes, with the civic theatre taking the shape of a spherical and a center square surrounded by a forest-like line of little house shapes. Itoko Hasegawa's Selected and Current Works are featured.



Brooklyn Children's Museum
 location: new york, USA
 Type: campus, corporate, company, garden, roofs
 Built: 2019 published on 2021
 One of the world's first Children's Museums was simple - a natural landscape that rewards curiosity of a child's eyes and hands. In coordination with an innovative school pavilion by acclaimed architect Toshiko Mori, developed a 20,000-square-foot rooftop park surrounded by the design needed to meet both the needs of the museum and the surrounding community, accommodating events from school groups and children's performances to large weekend weddings.



The D. T. Suzuki Museum
 The D. T. Suzuki Museum opened in Kanazawa, Japan in 2011. Dedicated to the life, writings, and ideas of Kanazawa-born Buddhist philosopher D. T. Suzuki, the facility designed by Yoshio Taniguchi, includes a contemplative space overlooking the Water Mirror.



The Museum of Modern Art
 The Museum of Modern Art is an art museum located in Midtown Manhattan, New York City. It plays a major role in developing and collecting modern art, and is often identified as one of the largest and most influential museums of modern art in the world.



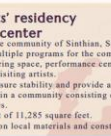
Yoshio Taniguchi
 1904-1979
 He studied mechanical engineering at Keio University, graduating in 1930, after which he studied architecture at Harvard University, graduating in 1934. He is best known as the designer of the early 21st-century expansion of the Museum of Modern Art (MoMA) in New York City.
 Style & Inspiration
 He worked briefly for architect Walter Gropius, who became an important influence. It is necessary to consider his strong interest in materials and materiality. For the last twenty years, he has shown equal interest in tile, metal, stone and glass.



Toshiko Mori
 1951-2023
 Toshiko Mori (born 1951) is a Japanese architect and the founder and principal of New York-based Toshiko Mori Architects, PLLC and Vision Arc. She is also the Robert P. Hubert Professor in the Practice of Architecture at the Harvard University Graduate School of Design. In 1995, she became the first female faculty member to receive tenure at the GSD.



Thread artists' residency and cultural center
 Situated in the remote community of Sindh, Senegal, Thread offers multiple programs for the community, including gathering space, performance center, and a residency for visiting artists. It is also meant to ensure stability and provide a common ground within a community consisting of two different tribes. With a total footprint of 11,285 square feet. Relying exclusively on local materials and construction techniques, the building's traditional structure is formed primarily of large bamboo members and compressed earth blocks.



Ginza Six
 Ginza Six is a luxury shopping complex located in the Ginza area of Tokyo. The name Ginza Six is a play on the building address in Ginza 6-chome as well as the desire to provide an exceptional "six-star" shopping experience.



University of Arkansas Center for Design & Materials Innovation
 Situated on a prominent urban site, the Center's simple, classic building forms serve to reflect the programmatic use of the building: factory, clock tower, and class room building. The design is a combination of innovative timber structural systems that specifically respond to the programmatic needs of the building: a grid shell dome, space frame slats, CLT wall slabs, and dove laminated decks. Each structural system meets the functional needs of the space, while fostering ideal environments for academic learning, such as abundant sun-filled, open, flexible, interconnected, and encourage interaction. The project features locally harvested and fabricated materials, supporting the state's growing timber industry.



JUURET / Roots
 The building inherits the history of Kitayama, which is the meeting point of the redbrick harbor atmosphere and the white context continued from the city center of Helsinki. The building blends into the city fabric by its simple and clean grid elevation on the quayside, and the arched facade on the street side. The building is entirely built with timber, which represents the core business and the roots of Stora Enso. The two building blocks separated by a real Nordic Forest. The space is equipped with an operable glass roof and glass slats that allow the spaces to become an outdoor public space during mild seasons. After an unprecedented crisis, the world learned that building should be more opened, instead of enclosing people in a larger



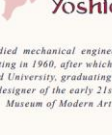
Terrace House
 Terrace House is a 19-story, 20-unit hybrid mass timber condominium, currently under construction. The building's form is a direct response to three primary site conditions: the neighboring landmark building by Canadian architect Arthur Erickson; the desire not to cast a shadow on the nearby park, and preserving existing view corridors toward the waterfront and mountains. The building has a concrete structure for the podium, tower, and core, and timber structure for the building's triangular space. Terrace House will be the tallest hybrid mass timber building in the world upon completion.



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Shigeru Ban
 born 1 August 1957
 Shigeru Ban is a Japanese architect, known for his innovative work with paper, particularly recycled cardboard tubes used to quickly and efficiently house disaster victims. Many of his notable designs are structures which are temporary, prefabricated, or incorporate local and unconventional materials in innovative ways. He was profiled by Time magazine in their projection of 21st-century innovators in the field of architecture and design. In 2014, Ban was named the innovative use of material and his dedication to humanitarian efforts around the world, calling him "a committed teacher who is not only a role model for younger generation, but also an inspiration."
 Style & Inspiration
 For Ban, one of the most important themes in his work is the "invisible structure". That is, he does not overly express his structural elements, but rather chooses to incorporate them into the design. Ban is not interested in the newest materials and techniques, rather the expression of the concept behind his building. He deliberately chooses materials to further this expression.



Course: Architecture Design Studio -3

Green Cell school

By Sara Hamdy 530210051

Site Analysis

Design process

Concept

Environmental analysis

- The design of this school makes use of several strategies to reduce energy and environmental impact. The green roof can absorb rainwater, reducing the amount of water that enters the sewer system. It also provides a natural habitat for birds and insects, which can help to reduce the amount of air pollution in the area.
- The green roof can also help to reduce the amount of heat that enters the building, which can help to reduce the amount of energy needed to cool the building. This can help to reduce the school's carbon footprint and make it a more sustainable building.
- Together, these strategies reduce energy costs and also have a significant positive impact on the health and wellness of the school.

Green Roof Components

- A green roof reduces the heat flowing through the roof.
- This helps to reduce temperature fluctuations caused by solar radiation.
- The additional thickness of the growing medium provides extra thermal insulation.
- The green cover lowers ambient temperatures through evapotranspiration. Green roofs reduce energy from rainwater further cooling the roof surface.
- Green roofs or roof gardens can also help to reduce heat loads on buildings.
- Green roofs retain rainfall, alleviate pressure on sewer systems, prevent flooding, reduce noise, and help pollutants settle, reducing energy consumption.

Lighting

- Maximize natural light by using large windows, skylights, and light wells, reducing the need for artificial lighting.
- Natural light has a positive psychological effect on well-being and productivity.
- Light can enter a building in a number of ways: direct sunlight, indirect light, and reflected light. Reflected light can be used to illuminate interior spaces and reduce the need for artificial lighting.

Ground Floor Plan scale 1:250

Main elevation scale 1:250

Side elevation scale 1:250

Section A-A scale 1:250

Section B-B scale 1:250

Classes

Atrium

Classes

Site plan

3D shots

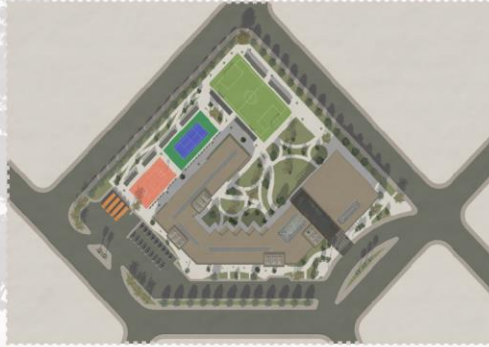
Floor Legend

- Classroom
- Library
- Office
- Reception
- Staff room
- Storage
- Workshop
- Art room
- Music room
- Sports hall
- Play area
- Green roof

OMAR AFIFI
520210008

THE PROJECT CONCEPT IS BASED ON A SIMPLE ARTISTIC LESSON. THE FIRST THING THAT ART STUDENTS ARE TAUGHT IS TO DRAW BASIC SHAPES LIKE A SQUARE, TRIANGLE, AND A CIRCLE. IF A STUDENT MASTERED DRAWING THESE SHAPES IN BOTH 2D AND 3D, HE WOULD BE ABLE TO DRAW ANYTHING THAT HE ENCOUNTERS, AS ANY COMPLICATED COMPOSITION OR IRREGULAR SHAPE CAN BE MADE USING ONLY THE COMBINATION OF THESE THREE SHAPES. THE MAIN BUILDING IS INSPIRED BY THE SQUARE AND HOW STRONG OF A SHAPE IT IS. CIRCLES AND CURVES WERE USED MAINLY IN THE LANDSCAPE FOR MORE ORGANIC AND NATURAL FEEL, AND FINALLY TRIANGLES WERE USED IN THE LOUVERS, SKYLIGHTS, AND SOME OF THE CLASSROOM'S FACADES.

THE BUILDING ORIENTATION WAS CHOSEN BASED ON THE ENVIRONMENTAL PROPERTIES OF THE SITE (BORG EL ARAH, ALEXANDRIA). MOST OF THE CLASSROOMS FACE THE NORTHWESTERN DIRECTION WITH HUGE WINDOW OPENINGS FOR NATURAL, UNHARMFUL, SUNLIGHT. ON THE OTHER HAND, ALL ROOMS THAT ARE FACING SOUTH HAVE VERY SMALL WINDOW OPENINGS. LOUVERS WERE ALSO USED IN THE GROUND FLOOR TO FURTHER REDUCE THE DIRECT SUN LIGHT. IN THE NORTHWESTERN FACAD, A GAP WAS MADE IN THE GROUND FLOOR FOR NATURAL AIR CIRCULATION SPECIALLY TO THE COURTYARD. THE MOST DISTINGUISHED VIEW IN THE WHOLE BUILDING WOULD DEFINITELY BE THE MAIN ENTRANCE SKYLIGHT. THE IMPORTANT THING IS THAT IT IS NOT ONLY MADE FOR THE LOOKS BUT ALSO TO FILTER THE HOT AIR IN THE BUILDING, ALLOWING FRESH COLD AIR TO SETTLE DOWN FOR A MORE COMFORTABLE INDOOR ENVIRONMENT. THE WHOLE BUILDING IS COVERED WITH EXTERIOR CLADDING FOR MULTIPLE REASONS, ONE OF WHICH IS INCREASING THE BUILDING'S SPECIFIC HEAT CAPACITY, ALSO IT INCREASES THE LIFE SPAN OF THE BUILDING AS IT ACTS AS AN EXTRA PROTECTION LAYER TO THE MAIN WALL.



SITE PLAN
1:700

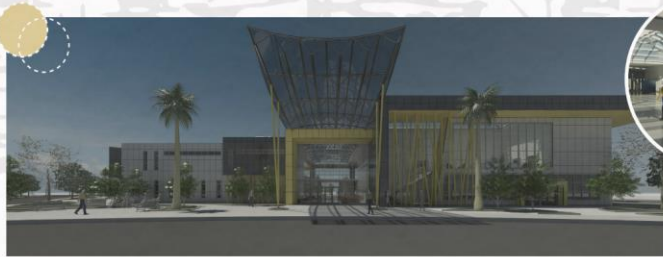


1ST FLOOR PLAN VIEW
1:300

SOUTH ELEVATION
1:200



SECTION(A-A)

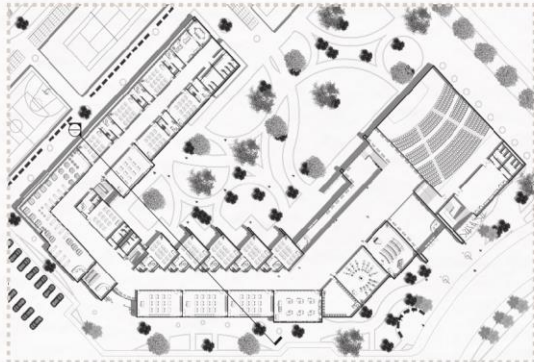


EXTERNAL/INTERNAL SHOTS

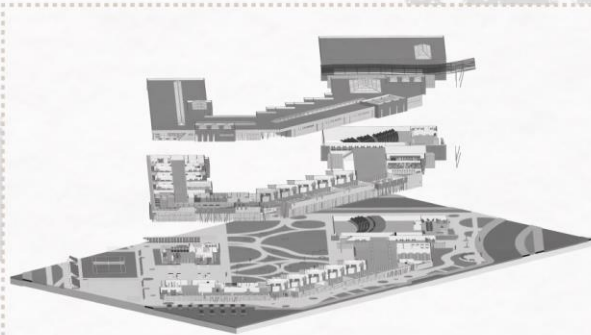


SSSS
SIMPLE SHAPES SUSTAINABLE SCHOOL

CHAOS IN A LADDER



2ND FLOOR PLAN VIEW
1:300



EXPLODED 3D VIEW
1:400

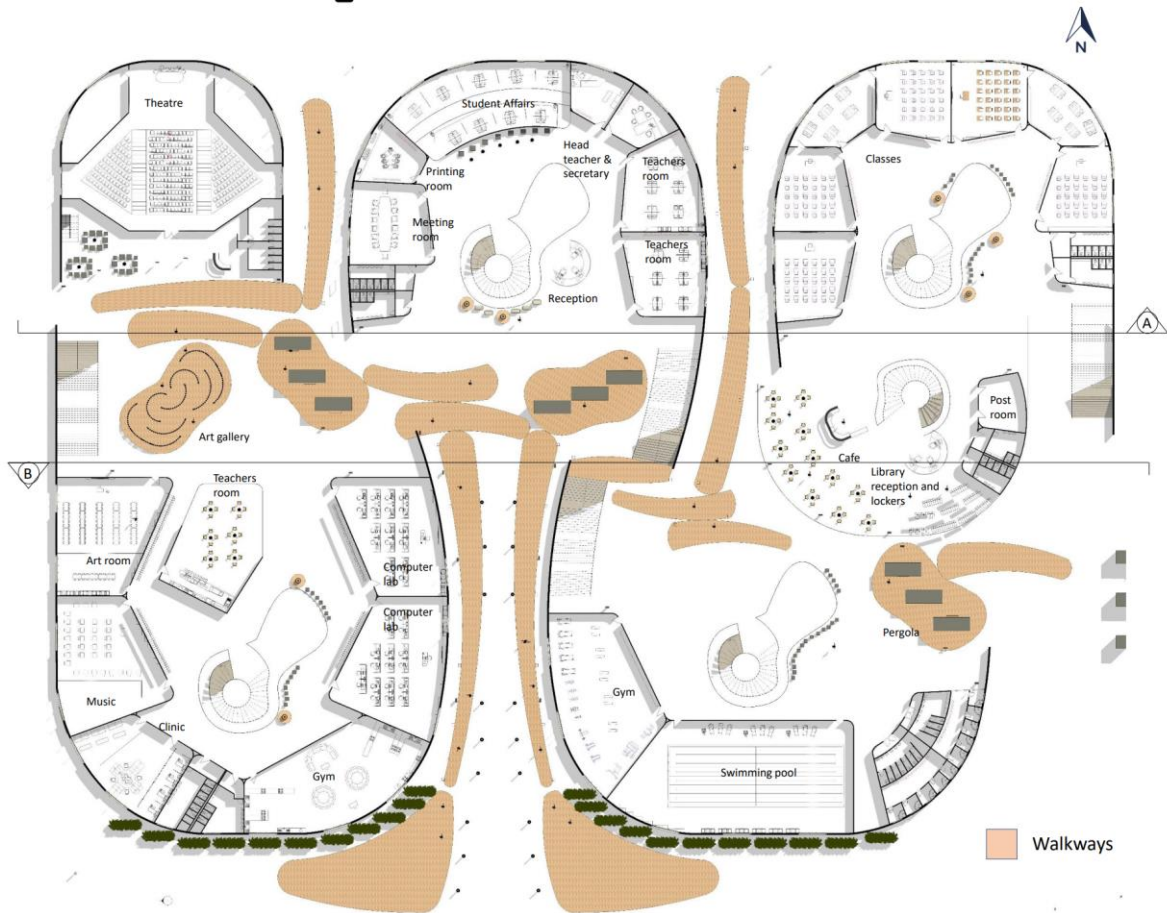


SCALE 1:200

SOUTH-EAST ELEV.
1:200

Sustainable High school

Toka Haroun 520210004



Ground Floor plan - Scale 1:200



South Elevation - Scale 1:200



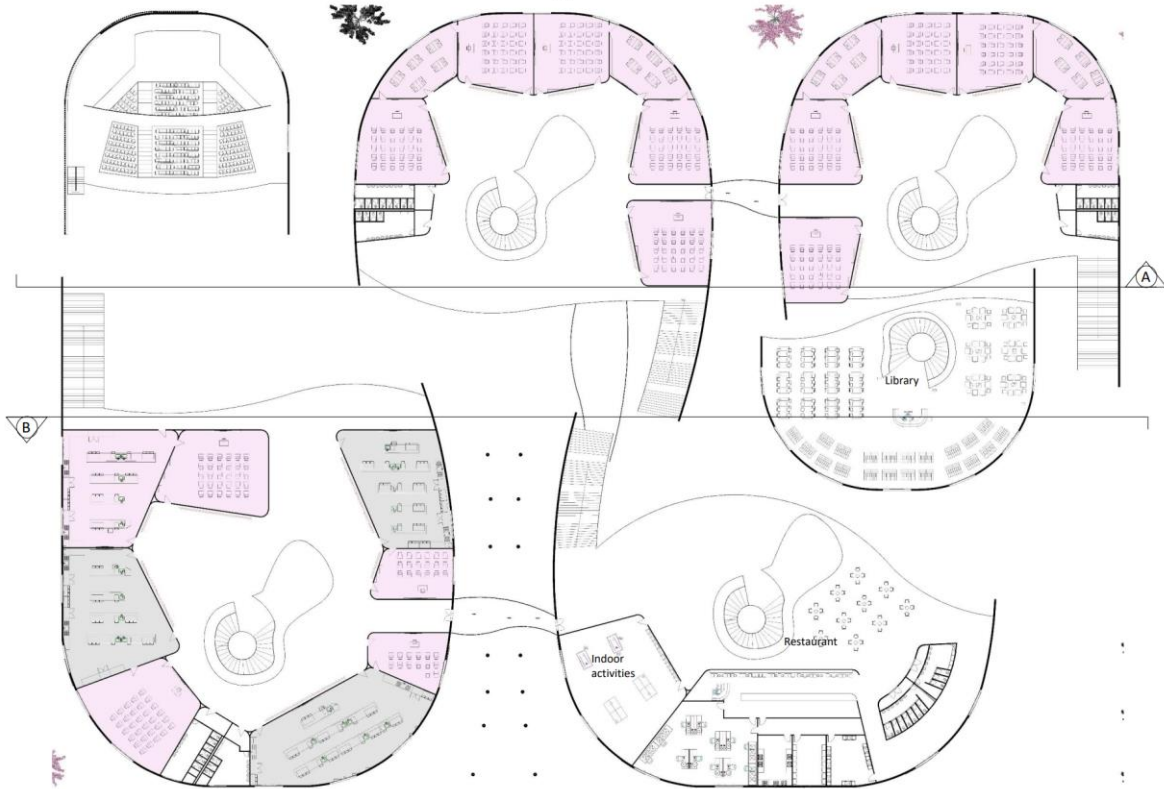
North Elevation - Scale 1:200

Sustainable High school

Toka Haroun 520210004

Site Plan - Scale 1:500

- Classroom
- Laboratory



First Floor plan - Scale 1:200



Section A-A - Scale 1:200



Section B-B - Scale 1:200

Sustainable High school

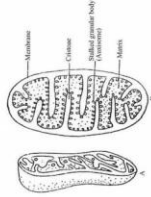
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Concept and morphology

Keywords:

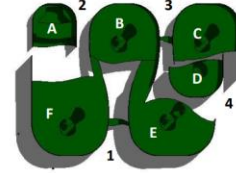
- Mitochondria
- Energy
- Growth
- Closed community
- Connected with nature
- Large surface area

A community like mitochondria; gets oxygen from the large, well-ventilated surface area, carbohydrates and nourishment from education and finally gives energy for students to learn and grow.



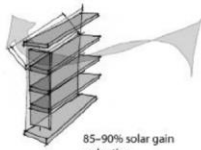
Composition:

- Buildings:**
 A: Theatre
 B: Administration
 C: Classrooms
 D: Library
 E: Activities hub
 F: Laboratories
- Entrance:**
 1: Main Students' entrance
 2: VIP entrance
 3: Staff entrance
 4: Entrance from bicycles' parking

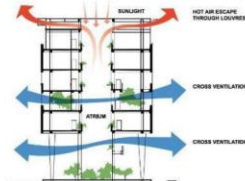
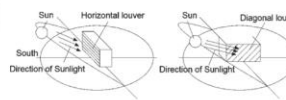


Site Analysis

Wooden louvers provide a certain amount of shade while allowing the breeze and fresh air to circulate and make the space cooler and naturally ventilated.



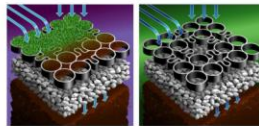
85-90% solar gain reduction



The surface area and atrium provides the best ventilation

TRUEGRID is an eco-friendly paving alternative to concrete and asphalt due to its durability and stormwater-permeability to reduce flooding in rainy places like Borg Alarab

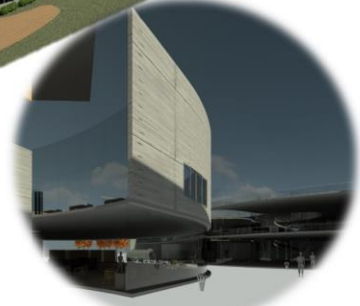
(Movable) horizontal



Library - 1st floor



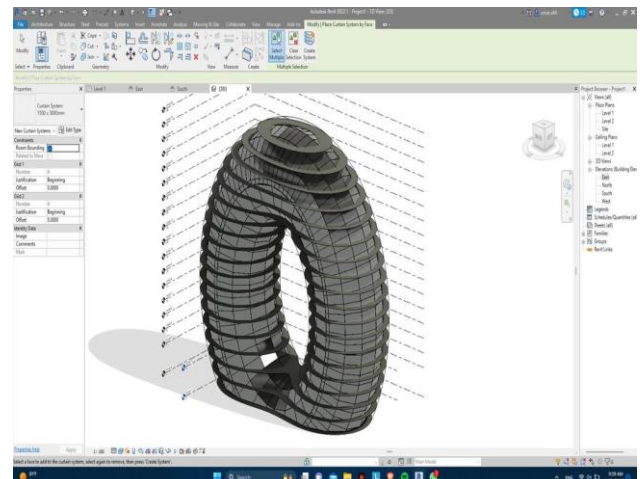
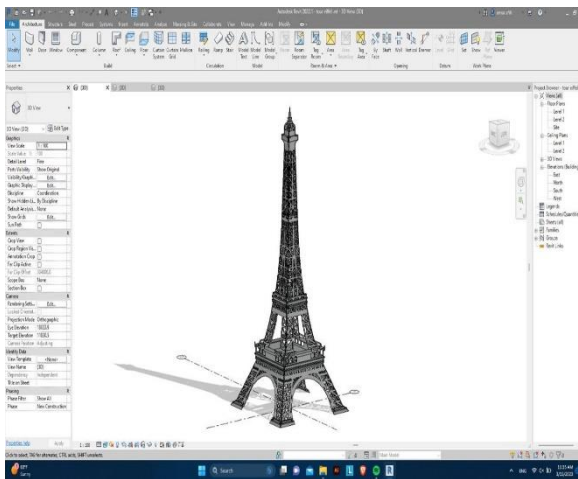
Art gallery & theatre's foyer



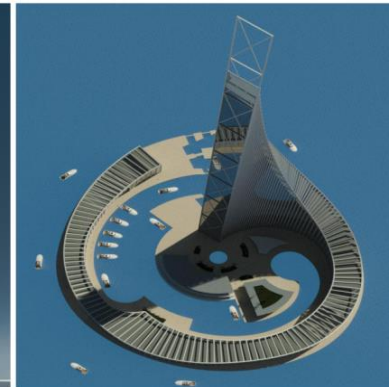
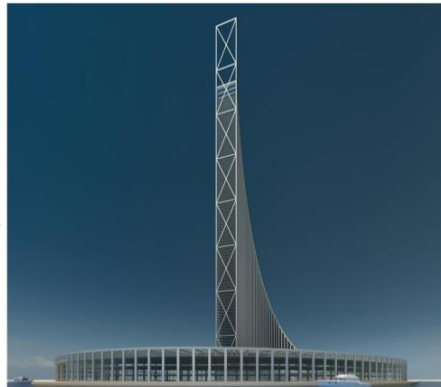
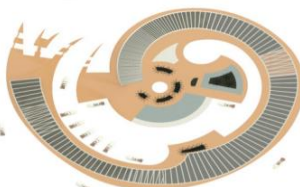
Library - ground floor

Students' main entrance

Course ARC 224: Computer Modelling



Zanzibar Domino tower
Omar Ayman Abu-Bakr Afifi
520210008



KATARA TOWERS OF LUSAIL

TOKA HAROUN
520210004

