

SHEIKH KAMAL INTERNATIONAL SPORTS COMPLEX

LABONI BEACH ROAD, COX'S BAZAR

BY

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A Thesis submitted to the Department of Architecture in partial fulfillment of the
requirements for the degree of Bachelor of Architecture

Department of Architecture

BRAC University

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DECLARATION

It is hereby declared that:

1. The thesis submitted is my own/our original work while completing my degree at BRAC University.
2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The thesis does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I/We have acknowledged all main sources of help.

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APPROVAL

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ABSTRACT

The proposed project Sheikh Kamal International Sports Complex is a recreational project with an area covering 3.5 acres, situated at the center of Cox's Bazar Sadar upazila, near the Laboni Beach Point. The aim of this project is to provide recreational activities to not only the people of Cox's Bazar but also the tourists who will visit there. It will play a vital role in accelerating local tourism and commerce. The project program includes indoor-games arena, gyms, olympic sized swimming pool, multi-court arena, and courts of futsal, volleyball, basketball, tennis, badminton, which will be available to both the local people and the tourists for recreational purposes. Many types of International sports competitions will also be held in those arenas, which will attract a large number of people in this project. For these, there will be arrangements of multiple facilities like, cafe, food courts, seating galleries, plaza space full of vendors, green terrace spaces, medical facilities, multipurpose hall, shops, parking etc. Moreover, a sports complex architecture always demands a massive bold monolithic mass with dynamism, in which there will be huge interior spaces to accommodate the sports arenas. So, this project has been visually emphasized by the use of environment-friendly materials and an aesthetically beautiful and dynamic geometric form, that will attract any sports enthusiastic people to use it.

KEYWORDS:

Sports Complex; Recreation; Monolithic Form; Metal Bracing; Plaza; Arenas.

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For the past 5 years, I have been through so many ups and downs in this journey of study in Architecture. And finally the journey ended with a massive hard work of 6 months with this project. The project was a sports complex architecture. As a sportsman, I always had a dream to give my thesis on a sports related project. So, this project just fulfilled that dream of mine as well.

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CONTENTS

DECLARATION	1
APPROVAL	2
ABSTRACT	3
KEYWORDS	3
ACKNOWLEDGEMENT	4
Chapter 01: INTRODUCTION	7- 9
1.1 Project Brief	
1.2 Project introduction	
1.3 Aims and objectives of the project	
1.4 Project rationale	
Chapter 02: LITERATURE REVIEW	10- 18
2.1 Sports	
2.2 Sports Complex	
2.3 Sporting Activities in Bangladesh	
2.4 Needs of Sporting Facilities in Cox's Bazar	
2.5 Impacts of Sports Facilities	
2.6 Sports Facility Users	
Chapter 03: SITE AND CONTEXT ANALYSIS	19- 27
3.1 Graphical characteristics of the site	
3.2 Road Networking	
3.3 Green-Blue Mapping	
3.4 Zone Mapping	

- 3.5 Wind Direction Map
- 3.6 Site Surroundings
- 3.7 Historical Development of the site

Chapter 04: CASE STUDY APPRAISAL 28- 39

- 4.1 La Fontaine Sports Complex (France)
- 4.2 IIM Sports Center, India.

Chapter 05: PROGRAM DEVELOPMENT 40- 45

Chapter 06: DESIGN DEVELOPMENT 46- 68

- 6.1 Conceptual Diagram
- 6.2 Form Generation Diagram
- 6.3 Functional Zoning Section
- 6.4 Top View
- 6.5 Ground Floor Plan
- 6.6 Other Floor Plans
- 6.7 Sections
- 6.8 Elevations
- 6.9 Structural Diagram
- 6.10 Axonometric View
- 6.11 Design Visualization

Chapter 07: CONCLUSION 69

Chapter 08: REFERENCES 70- 72

CHAPTER 01: INTRODUCTION

1.1 Project Brief

- Project Title: Sheikh Kamal International Sports Complex
- Site Location: Laboni Beach Road, Cox's Bazar.
- Site Area: 3.5 acres (1,52,460 square feet)
- Proposed Built Area: 1,68,632 square feet
- Client: National Sports Council (NSC), Bangladesh
- Proposed Program of the Project: Admin, Multipurpose Hall, Cafe, Food Court, Medical Facilities, Indoor Games, Gym, Swimming Pool, Sports Arenas, Sports Shops.

There are both indoor and outdoor sports included in the project's suggested activities, which are dependent on the project's overall scope. Consequently, there is greater diversity and more exposure to widely popular sports.

1.2 Project Introduction

People all around the world use sports and gymnastics as a form of entertainment and a profession, and regular physical activity is crucial to everyone's health regardless of age or gender. As disappointing as it may appear, the majority of people live in the 21st century under the influence of rapid urbanization and globalization, which forces the younger generation to go through a system of structured education in order to pursue a career in non-athletic fields where sports and physical activity are given much less importance. Furthermore, the development of technology is actually enabling people, particularly young people, to engage in digital entertainment more than ever before, depriving them of sports and physical activities. On the other hand, sports complexes and training facilities have traditionally contributed to a team's strength by bringing in and preparing new athletes for the big game. Sports complexes have developed into

vast, wide properties with dedicated fields and amenities for a variety of sports that are all housed under one roof, from being only playgrounds and fields in the past.

The South Asian nation of Bangladesh, which is surrounded by Burma and India, has a strong passion for sports because it is one of their primary forms of amusement. The national sport of the country is kabaddi, which originated in India but has since lost popularity due to time. Despite the fact that it is still the country's national sport, it deserves to be in the forefront. Football became the nation's favorite sport as time went on, and by the middle of the 1980s, its national team was one of the most feared in Asia. However, due to corruption and a lack of support, the growth of the team fell off the growth curve. Cricket was introduced to Bangladesh in the early 1990s, and the country took to it right away. Now that Bangladesh's cricket team is among the best, the nation is renowned as a cricketing nation. On the other hand, Bangladesh has competed in the Olympics since 1984 for various sports but has yet to win a medal, despite having given birth to Grand Master Niaz Murshed, the finest chess player in the world.

Cox's Bazar, chosen by the National Sports Council (NSC) as the location for a new projected sports complex, requires suitable training facilities for the growing number of young athletes as well as indoor games & leisure facilities for the local population. Despite the fact that there are a lot of outstanding individuals in the country, the majority of them are unable to reach their full potential due to inadequate facilities at the district level. A sportsperson or athlete starts out at the district level and works their way up to the division level before reaching the national level, which is the greatest level of competition in our nation. Each district must have at least one sports facility that gives aspiring athletes a chance to compete on a national and international level and receive the required instruction.

This paper focuses in particular on the project's elements that would facilitate district-level athletic training in sports and gymnastics as well as the creation of user-friendly, environment- and site-responsive architectural spaces.

1.3 Aims and objectives of the project

- The project's major goal is to provide people with a very limited space to exhibit their skill in various sports.
- Encourage athletes to perform better by giving them access to proper training environments and facilities and by enhancing the caliber of sports infrastructure and equipment.
- Giving prospective athletes the chance to enhance their skills and gain power.
- Allow the complex to generate income through public events by accommodating athletes and training inside the complex as well as offering Cox's Bazar residents and tourists leisure and entertainment.
- Visitor accessibility is made simple, and areas and functions are visible to one another.
- Creating a flexible design while maintaining architectural integrity.

1.4 Project rationale

The establishment of a sports complex in Cox's Bazar is necessitated by the need to meet the rising demand for sports facilities, advance tourism and economic development, improve athlete development, promote community engagement and social cohesion, support youth empowerment, and improve health and well-being. This project has the ability to significantly alter the athletic environment in Cox's Bazar, provide for the local populace, and advance the general development and well-being of the area.

CHAPTER 02: LITERATURE REVIEW

2.1 Sports

All forms of physically demanding competition that strive to preserve or improve physical ability through casual or formally structured involvement are referred to as sports in general. It also aims to amuse and entertain the audience and, in many circumstances, the participants. It is typically acknowledged as being activities that call for physical prowess or agility. The term 'Play' as written by German theorist Carl Diem, "is purposeless activity, for its own sake, the opposite of work." Play, sports, games & contests are actually inter-related, which can be categorized as spontaneous play and organized play (games) which again can be sub-categorized based on competitiveness (Thompson W.N. & Rowe D.C., 2020). In addition, the term "sports" is used to describe competitive physical activity that is often done in teams or as individual competitions, whether they are sanctioned or unofficial. Sports aim to maintain or enhance participants' physical fitness and abilities while providing entertainment for both players and spectators.

"Sport has the power to unite people in a way little else can. Sport can create hope where there was once only despair. It breaks down racial barriers. It laughs in the face of discrimination. Sport speaks to people in a language they can understand."
Mandela, N. (2010).

There are many different types of sports, from those requiring only two competitors to those involving close to hundreds; participants can compete alone or in teams. Sports are generally regulated by guidelines or rules, which help in ensuring just competition and allow reliable adjudication of the winning individual or side. (Sport Accord, n.d.)

Sports are a major source of enjoyment and entertainment for spectators. Sports broadcasting helps spectator sports, which bring large audiences to athletic events, reach a wider audience.

2.2 Sports Complex

A sports complex is a venue that can host a variety of athletic activities and events. It often includes a number of facilities and amenities that appeal to various sports and athletic interests. These complexes are built with the goal of delivering a holistic athletic experience to athletes, teams, and spectators.

A variety of indoor and outdoor amenities, such as arenas, gymnasiums, swimming pools, tennis courts, tracks, and fields, are frequently found in sports complexes. These facilities are outfitted with cutting-edge equipment and infrastructure to handle a variety of sports such as football, basketball, tennis, swimming, athletics, and others.

Aside from the principal athletic arenas, sports complexes sometimes include auxiliary amenities such as fitness centers, locker rooms, sports medical clinics, conference rooms, and concession areas. These amenities are intended to enhance the entire experience for both participants and spectators.

For both professionals and newcomers, sports complexes are crucial gathering places. They organize a broad variety of events, including league games, training camps, local and international tournaments, and leisure activities. These locations are essential for developing talent, nurturing sports and physical fitness within a community, and giving athletes a stage to display their abilities.

Additionally, sports facilities frequently serve as locations for non-sporting activities including concerts, exhibits, and cultural meetings. As a result of its adaptive design and flexible infrastructure, they may serve a variety of functions, drawing a wide range of customers and enhancing the community's general liveliness.

A sports complex, then, is a type of multi-use building that houses a variety of sports facilities and amenities. It acts as a hub for athletic endeavors, encourages physical fitness, and offers athletes a stage on which to compete and display their abilities. These complexes' adaptable infrastructure plays a crucial part in encouraging community involvement and enhancing people's general well-being.

2.3 Sporting Activities in Bangladesh

Bangladesh, a South Asian country, has a thriving sporting culture, with various popular sporting activities enjoyed by its citizens. Traditional sports in Bangladeshi culture include Boli Khela, Kabaddi, and Nouka Baich, to mention a few. Kabaddi is the national sport of Bangladesh, a contact sport with Indian origins. Kabaddi was previously utilized as a kind of entertainment by the British Army, and it was even used to attract soldiers from colonial Asian populations.

Cricket has grown in popularity among the people of this country in recent years. It is the most popular sport and has grown in popularity after Bangladesh won the ICC Trophy in 1997, allowing Bangladesh to compete in the ICC Cricket World Cup games from then on. Bangladesh even co-hosted the 2011 ICC World Cup (together with India and Sri Lanka) and will host the 2014 ICC T20 World Cup. Bangladesh Premier League (BPL) is a domestic cricket league that draws both local and foreign players.

Football is an important part of Bangladeshi sports culture. The "Red and Greens," the national football squad, participates in international events. The Bangladesh Football Premier League is the country's highest domestic football league, with popular clubs from all throughout the country competing.

Kabaddi is a traditional sport that is becoming increasingly popular in Bangladesh. The Bangladesh Premier Competition Kabaddi (BPLK) is the country's professional kabaddi competition, which exhibits the abilities of local and foreign kabaddi players.

Other prominent sports in Bangladesh include hockey, tennis, badminton, volleyball, handball, carom, wrestling, weightlifting, and even chess. In fact, Bangladesh once produced one of the world's best chess players, Niaz Murshed, who went on to become the first Grandmaster from South Asia, in 1987. However, most of these sports are overshadowed by Cricket in Bangladesh. (Sport in Bangladesh, n.d.).

In Bangladesh, efforts are regularly undertaken to foster outstanding athletes, provide facilities, and promote sports at all levels. Numerous sports teams from the public

sector, the armed services, and universities compete in district-level matches, where the majority of sportsmen and women compete. Numerous sports clubs have been established in response to the nation's passion for athletic endeavors in order to serve both the general public and the nation's athletes. Several illustrious sports organizations include Abahani Krira Chakra, Mohammedan Sporting Club, Arambagh Club, Brothers Union, Sheikh Russell, Kalabagan, Wari Sports Club, Victoria Sports Club, and the Muktijoddha Sangsad. Sports events of all kinds are frequently held at these clubs on a national and even international level. This is a major factor in why the majority of these clubs work so hard to maintain and upgrade their infrastructure and amenities to the highest standard possible.

2.4 Needs of Sporting Facilities in Cox's Bazar

Cox's Bazar is a prominent tourist destination in southern Bangladesh recognized for its gorgeous beaches and attractive terrain. While it is most known for its tourist business, Cox's Bazar also has a variety of sports facilities to accommodate both residents and visitors who love a variety of athletic activities. Sports facilities in Cox's Bazar are vital for a variety of reasons, given the region's distinct qualities and demands.

Sports facilities provide a venue for individuals to engage in physical activities, boosting general health and well-being. With the growth of sedentary lives and health difficulties, having access to sports facilities encourages people to engage in regular exercise and live a better lifestyle.

Cox's Bazar is a popular tourist attraction in Bangladesh, drawing a considerable number of people each year. Sports facilities are critical to broadening tourism offers and attracting sports fans. These facilities enable tourists to participate in a variety of athletic activities, prolonging their stay and contributing to the local economy through sports tourism.

Access to sporting facilities gives ambitious athletes a platform to enhance their abilities and compete at a higher level. Cox's Bazar can contribute to the development of athletes who can represent the region, the country, and possibly attain international prominence by developing local talent through training programs and organized contests.

The empowerment of young people depends on Cox's Bazar having sporting facilities. Young people have access to them as a healthy outlet, which helps keep them occupied and away from harmful influences. Youth can enjoy themselves in a recreational setting thanks to sports facilities, which also help them build virtues like self-control and collaboration.

Additionally, to be places for sports, athletic facilities can also be locations for medical care and therapy. They can be used for sports medical clinics, physical therapy, and rehabilitation programs, which serve people who are recuperating from injuries or need specialized treatment.

Cox's Bazar is renowned for both its rich cultural legacy and for its natural beauty. Sports arenas may be used as locations for cultural events, sporting festivals, and competitions, displaying regional customs and drawing tourists interested in both sports and culture.

It is worth mentioning that, while Cox's Bazar has sporting facilities, they may not be as vast or plentiful as those found in larger cities. However, the natural surroundings, such as beaches and stunning landscapes, give enough opportunity for outdoor sports and leisure activities. In conclusion, sporting facilities in Cox's Bazar are required for encouraging physical fitness, enhancing tourism, developing talent, building community participation, empowering youth, providing health services, and organizing events. These facilities contribute to the entire development and well-being of individuals while also promoting the region's economic growth and cultural vibrancy.

2.5 Impacts of Sports Facilities

A lot of studies have found that exercise can help with a variety of psychiatric illnesses. Exercise has also been shown in studies to have a beneficial effect on depression. Physical self-worth and self-perception, particularly body image, have been related to higher self-esteem. The evidence relating to the health benefits of physical activity primarily focuses on intrapersonal factors such as physiological, cognitive, and affective benefits; however, this does not rule out the social and interpersonal benefits of sport and physical activity, which can also produce positive health effects in individuals and communities.

Exercise, according to researchers, can also assist to alleviate several common mental diseases, such as anxiety and sadness. Nobody appreciates being an outcast or a lone wolf. Sport gives camaraderie and a sense of belonging in these situations. It also motivates children to think about others and challenges them to work in groups. Kids like feeling like they are part of a team, and sports allow them to feed off the energy and excitement of their teammates.

Indoor activities and sports have been created for thousands of years to keep people entertained while they are confined within a house or other building. These are frequently used in social or family settings, especially when darkness or poor weather prevents people from going outside.

Sports facilities have a large influence on people, communities, and society as a whole. Here are some of the major effects of sporting facilities:

Physical Health and Well-Being: Sports facilities provide places for individuals to engage in physical activities, encouraging greater health and general well-being. Regular exercise aids in the maintenance of a healthy weight, the prevention of chronic illnesses, the improvement of cardiovascular health, and the improvement of physical fitness levels. Individuals can use sports facilities to participate in a variety of sports and fitness activities, resulting in a healthier and more active lifestyle.

Mental Health and Psychological Benefits: Participating in sports and physical activities has been shown to improve mental health. Sports facilities provide opportunities for stress reduction, mood improvement, and mental well-being. Sporting activities can promote self-esteem, build resilience, reduce anxiety and sadness, and improve general mental health.

Economic Impact and Tourism: Well-developed sports facilities have the potential to have a major economic impact, particularly in terms of sports tourism. Sporting events and tournaments draw people from all over the world, producing money for local companies, hotels, restaurants, and other service providers. Sports facilities help to build the sports tourism business by producing jobs and supporting economic development in the surrounding communities.

Health Promotion and disease Prevention: Sports facilities support public health programs by encouraging physical activity and illness prevention. Regular exercise lowers the risk of a variety of health issues such as obesity, diabetes, cardiovascular disease, and some forms of cancer. Communities are encouraged to participate in physical activities by providing easily accessible and well-maintained sports facilities, which leads to improved population health outcomes.

Skill Development and Talent Nurturing: Sports facilities are important for skill development and talent nurturing. They provide a venue for individuals, particularly young athletes, to train, practice, and improve their abilities in various sports. Talent identification, training, and development to higher levels of competition are made easier by well-equipped facilities, excellent coaching, and structured tournaments. Sports facilities help athletes grow by allowing them to reach their full potential and participate at the local, national, and international levels.

Education and Youth Development: Sports facilities play an important role in promoting education and youth development. They give possibilities for physical education programs in schools and universities, promoting holistic development among students. Sports facilities provide a platform for young people to develop vital life skills such as collaboration, discipline, time management, and leadership. They also function as safe

spaces for children and young people, keeping them engaged in constructive activities and away from negative influences.

Social contact and Community Engagement: Sports facilities serve as meeting spaces, encouraging social contact and community involvement. People from many walks of life come together to participate in sports activities, cheer on teams, and watch athletic events. This fosters a feeling of community, builds social relationships, and promotes individual unity. Individuals can also volunteer, create events, and contribute to the growth of their communities by using sports facilities.

So, sports facilities have a wide range of effects on people's physical and mental health as well as their ability to learn new things and enhance their social and emotional skills. They are essential in promoting healthy, active lifestyles, developing talent, and establishing dynamic communities.

2.6 Sports Facility Users

Being physically active in any activity has advantages such as maintaining good health, preventing weight gain, preventing the development of numerous diseases, and teaching one how to lead a healthy lifestyle. In addition, playing sports gives people the chance to exercise and socialize in a healthy setting, which has a great effect on both children and adults. In a town like Cox's Bazar, the people who utilize the sporting facilities might be many different types of people from different social classes. Following are a few notable patrons of sporting venues:

Community Members: Sports facilities also serve the wider population in Cox's Bazar. Individuals of all ages and backgrounds are welcome to use the facilities for recreational reasons, leisure activities, or merely to watch athletic events held at these sites.

Students and Educational Organizations: In Cox's Bazar, schools, colleges, and universities frequently use sports facilities for physical education lessons, intramural tournaments, and practice sessions for a variety of sports. In order to encourage healthy lives and develop young potential, students and educational institutions are significant consumers of sports facilities.

Local Athletes and Sports Teams: Cox's Bazar is home to various local sports teams and athletes who use sports facilities for training, practice, and tournaments. These individuals represent various sports such as cricket, football, kabaddi, volleyball, and athletics, among others.

Tourists and Visitors: Cox's Bazar draws a significant number of both domestic and foreign tourists and visitors. Many of these visitors are sports fans who use sports facilities for enjoyment. They may participate in beach sports such as volleyball and football, as well as water sports like swimming, surfing, and jet skiing.

Sports Clubs and Organizations: Cox's Bazar is home to several sports clubs and organizations, who make use of sporting facilities for their respective sports. Leagues, competitions, and friendly games are just a few of the events that these clubs may put on that draw both players and fans. They offer chances for competition and skill improvement, as well as helping to advance the growth of sports in the area.

Fitness and Health Enthusiasts: Cox's Bazar's sports facilities draw those who place a high priority on being healthy and exercising frequently. These users might include gym members, runners, bikers, group fitness class participants, and fitness aficionados. These people can practice their favorite forms of exercise at the sporting facilities.

CHAPTER 03: SITE AND CONTEXT ANALYSIS

The project's location is tucked away in an incredibly alluring environment at Cox's Bazar. The place provides a stunning view of the Bay of Bengal due to its beachside location. The stadium is surrounded by coastal scenery that features sweeping sand dunes, swinging palm trees, and the open ocean. Both players and spectators like the tranquil and engrossing environment that this natural beauty produces. Around the stadium, there are several places to stay that may accommodate guests' needs, including hotels, resorts, and guesthouses. Both tourists and cricket lovers will have a pleasant stay at these places since they offer cozy housing and easy access to the stadium and the area's attractions. Visitors are attracted by the exquisite beachside position, coastal scenery, close access to tourist sites, pleasant lodgings, and vibrant local culture.

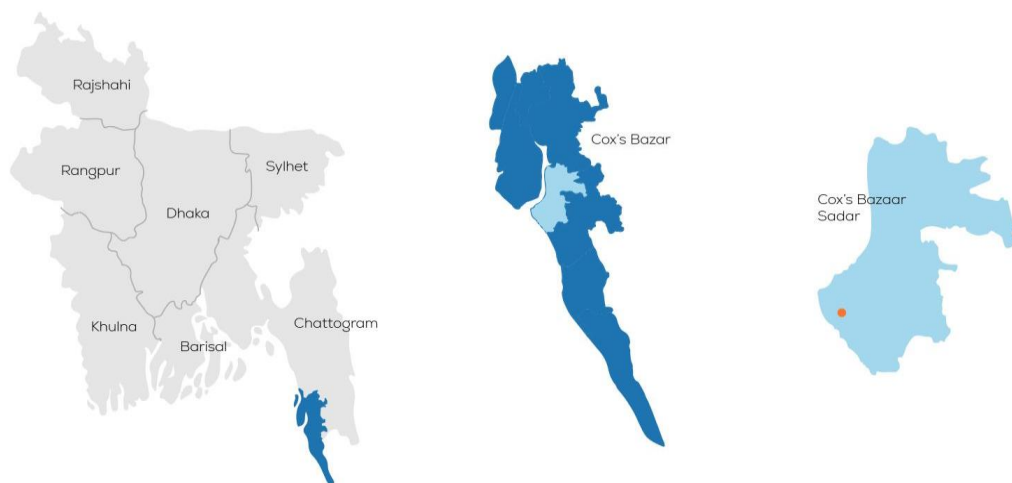


FIG 1: Site Location Map | Source: Author

3.1 Graphical characteristics of the site

The project site is situated at the center of Cox's Bazar Sadar upazila, near the Laboni Beach Point. The distance from the site to all the terminals are also considerably equal and have easy access. The aesthetic attraction of Cox's Bazar's Laboni Beach is heightened by a number of recognizable graphical features. The Bay of Bengal is bordered by a magnificent shoreline formed by kilometers of golden sand coastlines on the beach. As they wash ashore, the soft sea waves make a rhythmic pattern that adds to the hypnotic atmosphere. A breathtaking vista that captures the eye is created by the bay's vast blue waters blending smoothly with the blue sky. In contrast to the surrounding landscape, the beach is frequently decorated with bright beach umbrellas. Additionally, Laboni Beach offers stunning sunset views, as the sun slowly sinks into the water and the sky is painted with a spectrum of vivid colors. Laboni Beach is a visual paradise for tourists, offering a feast for the senses and creating long-lasting memories thanks to the mix of various graphic elements, including the sandy shoreline, turquoise waves, mesmerizing horizon, colorful umbrellas, and magnificent sunsets.

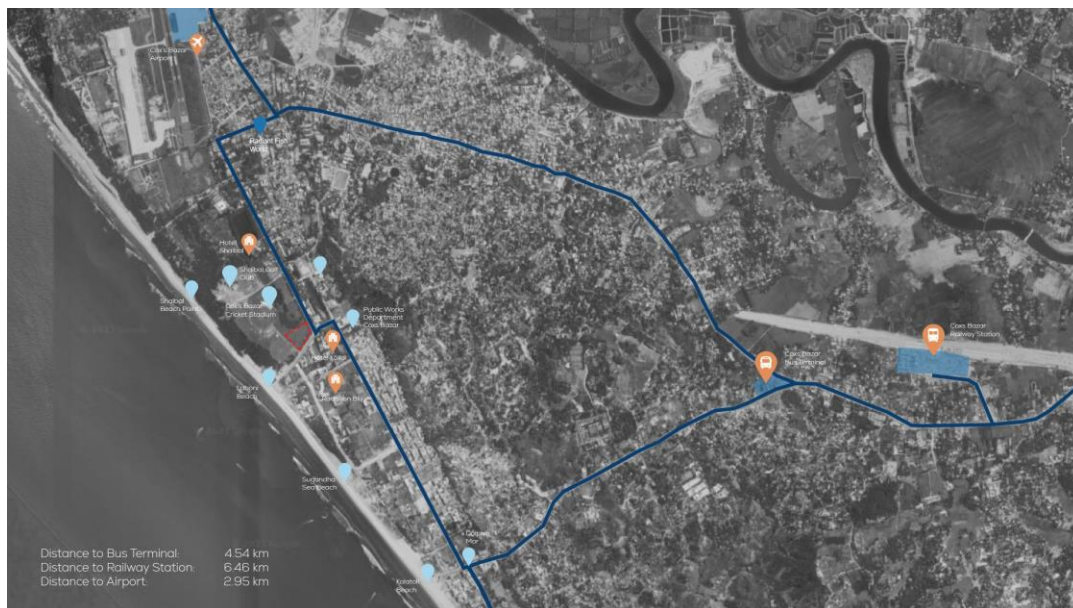


FIG 2: Location Map | Source: Author

3.2 Road Networking



FIG 3: Road Networking Map | Source: Author

3.3 Green-Blue Mapping



FIG 3: Green-Blue Map | Source: Author

3.4 Zone Mapping

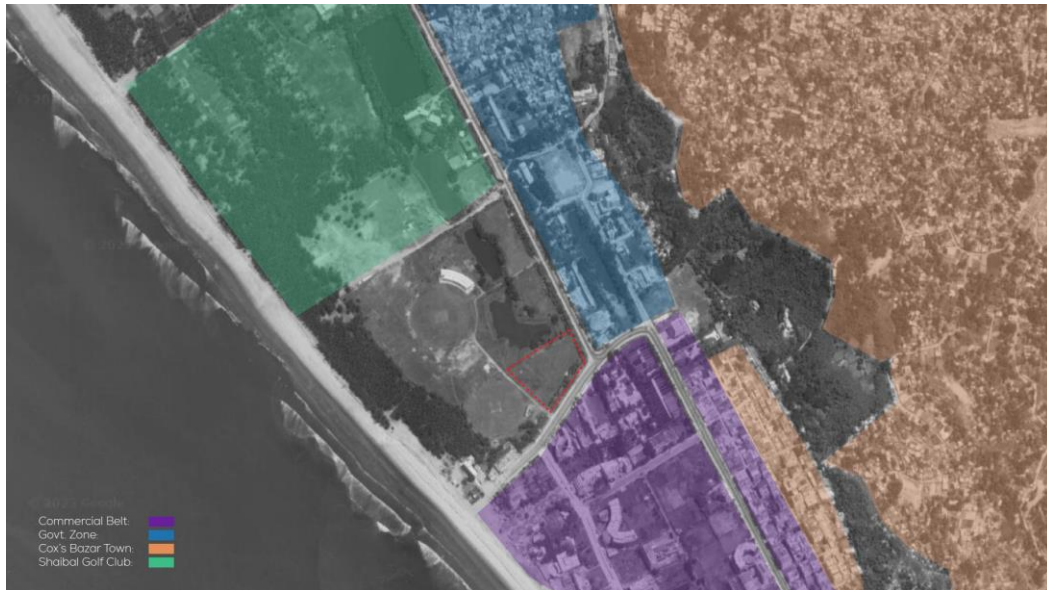


FIG 4: Zoning Map I Source: Author

3.5 Wind Direction Map



FIG 5: Wind Direction Map I Source: Author

3.6 Site Surroundings



FIG 6: Site Surroundings Map | Source: Author



FIG 7: Site Surroundings Map | Source: Author



FIG 8: Site Surroundings Map | Source: Author

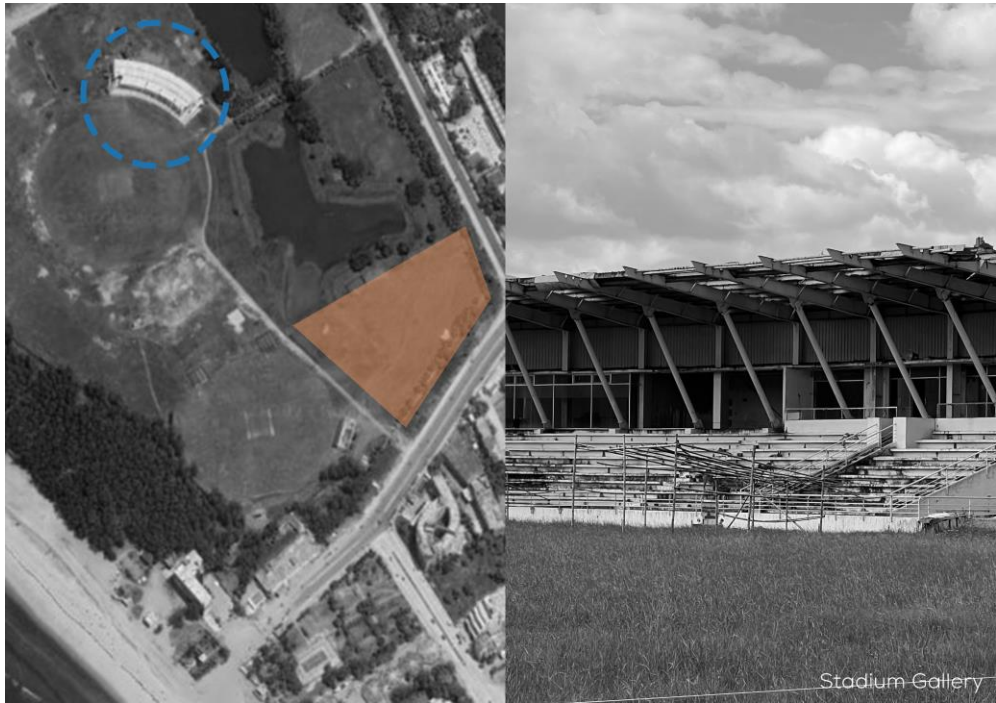


FIG 9: Site Surroundings Map | Source: Author



FIG 10: Site Surroundings Map | Source: Author

3.7 Historical Development of the site

Bangladesh's Laboni Beach, located in Cox's Bazar, has an interesting historical background that has aided in making it a popular tourist destination. When Cox's Bazar grew into a thriving port and commerce hub during the British colonial era, the neighborhood, which had been a little fishing town called Palongkee, began to undergo change. As the British came to appreciate the region's natural beauty, Laboni Beach began to draw tourists, particularly British officers and traders looking for a break from the hustle and bustle of the city. Construction of guesthouses and basic services to support the growing number of guests signaled the start of the growth of tourism in the early 20th century. The government engaged in infrastructure initiatives to boost tourism after Bangladesh gained its independence in 1971, which resulted in a major increase in the popularity of Laboni Beach. With its magnificent sandy shoreline, expansive vistas of the Bay of

Bengal, a variety of water sports, and a lively local environment, the beach is a popular destination for domestic and foreign tourists today. The sustained appeal of Laboni Beach is guaranteed for future generations by initiatives to encourage eco-friendly and sustainable tourist practices. Also, there is a waterbody just beside the site, which was very long two decades ago. But due to massive urbanization, that waterbody is cut down to several small water bodies by creating roads in between them.



2004



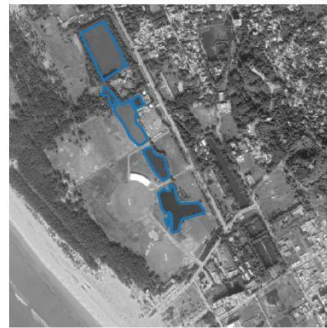
2007



2011



2014



2019



2022

FIG 11: Historical Map I Source: Author

CHAPTER 04: CASE STUDY APPRAISAL

The case studies chosen were focused on the urban setting in which sports facilities are built. The chosen case studies' plans, structure, materials, microclimate, parking, form and function, circulation, and landscape are all studied.

The case studies were also chosen based on how similar functions were built in such regions. One of the case studies is international, while the other is Indian, which are similar to our climatic conditions.

4.1 La Fontaine Sports Complex (France)

Location: Antony, France.

Area: 5200 sqm.

Architects: Archi5 + Tecnova Architecture.

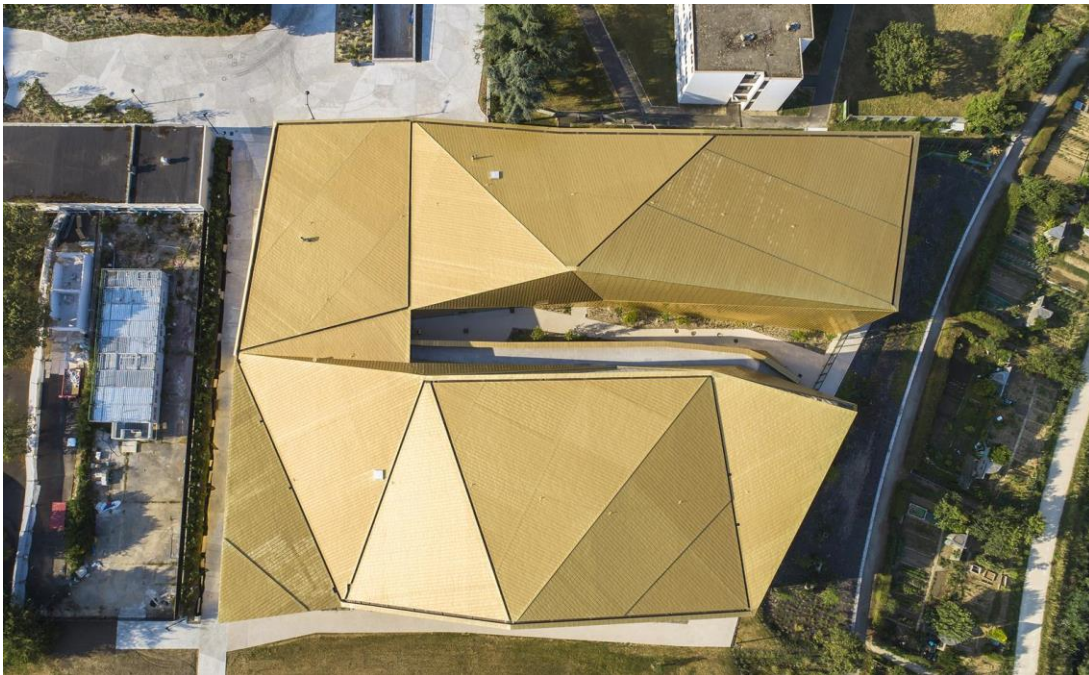


FIG 12: La Fontaine Sports Complex | Source: Arch Daily



FIG 13: La Fontaine Sports Complex | Source: Arch Daily



FIG 14: La Fontaine Sports Complex | Source: Arch Daily

4.1.1 Project Brief

The multi-sport complex created by "Archi5 + Tecnova Architecture" was chosen as the winning entry because it included elements of a new urban ambition for the neighborhood as well as exceptional form and geometrical features that blended with the landscape and context to provide a theme for each function, including gathering, meetings, sports activities, and events. The project serves as an appealing landmark for the locals, maintaining its own language of public space that complements the urban landscape components. It is flanked by a linear housing zone on one side and a botanical garden on the other.

4.1.2 Project Program

(Furuto, A. 2012) The project program include:

- A sports center for the College La Fontaine,
- Two gymnasiums,
- A climbing wall,
- Dojo,
- Boxing gym,
- Multipurpose room,
- Administrative offices, and
- Parking for 100 cars.



FIG 15: La Fontaine Sports Complex | Source: Arch Daily



FIG 16: La Fontaine Sports Complex | Source: Arch Daily



FIG 17: La Fontaine Sports Complex | Source: Arch Daily

4.1.3 Design inspirations (Form and structure):

The main lesson to be learned from this project is how the form and geometry can support the surrounding aspects and provide a visually appealing and useful experience. It not only upholds the principles of athletic goals but also strikes a balance between formal expression and nature, resulting in a modern and poetic architectural form. Additionally, it is organized by a series of views, allowing for the connection between interior and outdoor areas. The primary framework of the building is built of steel, and the skin that covers it is an oxidation-resistant alloy of copper, aluminum, and titanium that gives it a matte bronze appearance. The general design has ensured that light and air may enter in sufficient amounts.

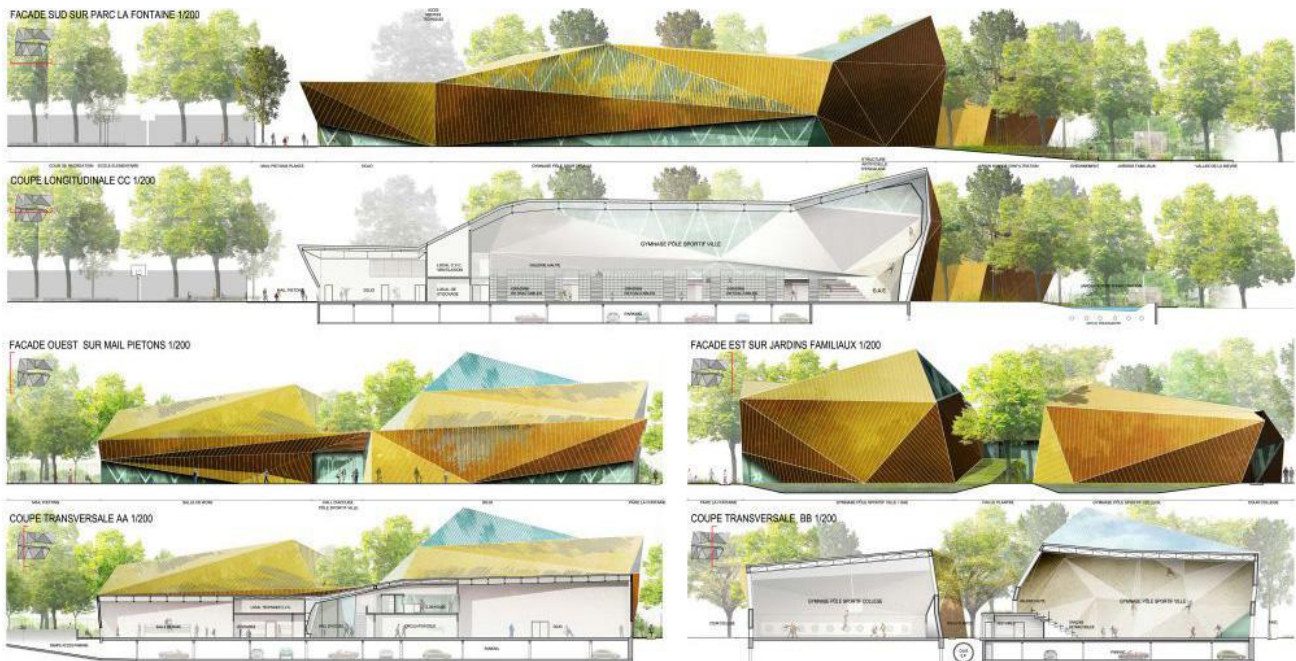


FIG 18: La Fontaine Sports Complex | Source: Arch Daily



FIG 19: La Fontaine Sports Complex | Source: Arch Daily

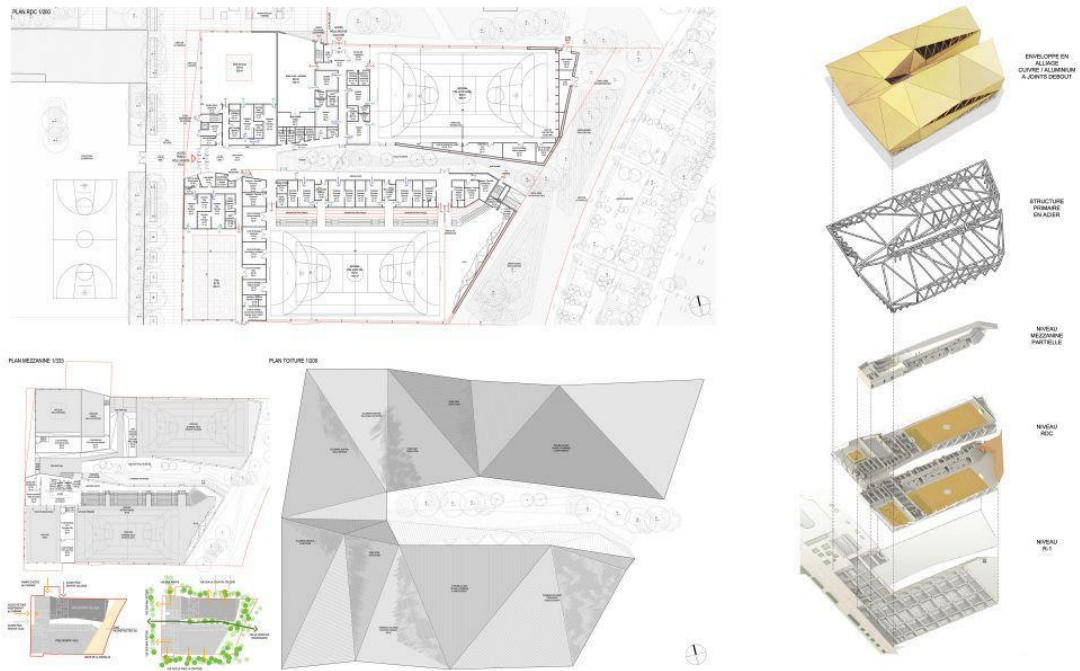


FIG 20: La Fontaine Sports Complex | Source: Arch Daily

4.2 IIM Sports Center, India

Location: Bengaluru, India

Area: 3438 sqm.

Architects: Mindspace.



FIG 21: IIM Sports Center | Source: Arch Daily



FIG 22: IIM Sports Center | Source: Arch Daily

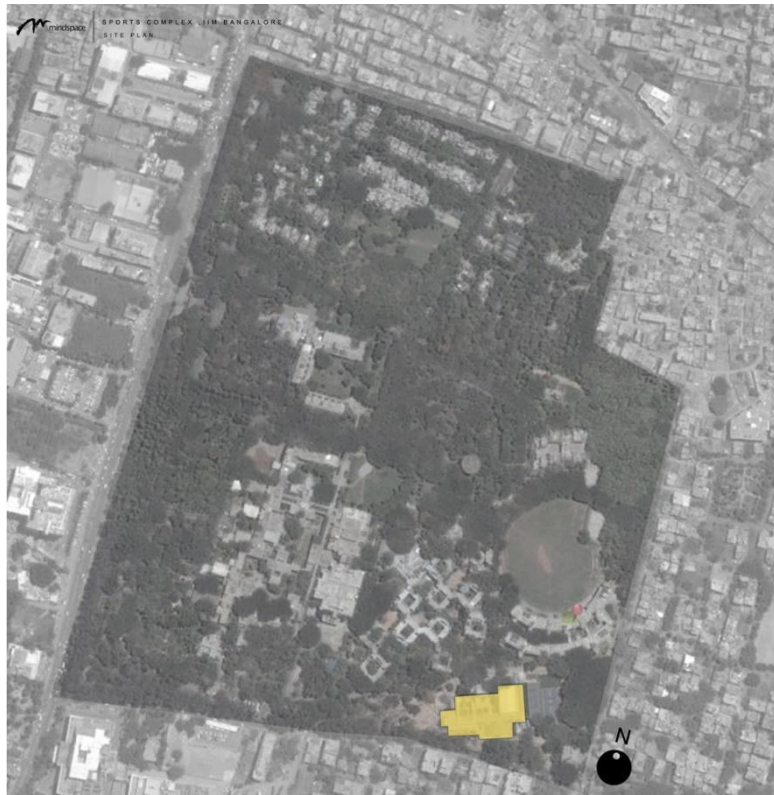


FIG 23: IIM Sports Center | Source: Arch Daily

4.2.1 Project Brief

The intended location of the sports center is near the hostel buildings already in place. Existing trees on the property have to be considered during design. Trees are used as focus points to construct main access and minor access spines. The project has a built-up area of roughly 110,000 square feet, or 3,438 square meters (40,000 square feet) in total.

4.2.2 Climate

The two floors of the sporting facilities were designed in response to the topography of the area. The building is intended to look like it is growing out of the surrounding vegetation. A progressive change occurs: from the double height pergola-covered space that serves as the major circulation spine, up to the semi-open verandah, and finally to the enclosed sports hall. The athletic facility's large stairs and platforms serve as venues for cultural events and serve to link the structure to the surrounding

environment. The planned design attempts to create a peaceful connection between the building, people, location, and environment. The usage of common areas for employees and students promotes formal and informal connection.



FIG 24: IIM Sports Center | Source: Arch Daily



FIG 25: IIM Sports Center | Source: Arch Daily

4.2.3 Design inspirations (Form and structure)

The project is an illustration of a south Asian contextual project, and when developing in the site, the shape melds into the environment and the trees are respected. There are public amenities like a canteen and a library, along with the functions that are necessary to operate a sporting event.

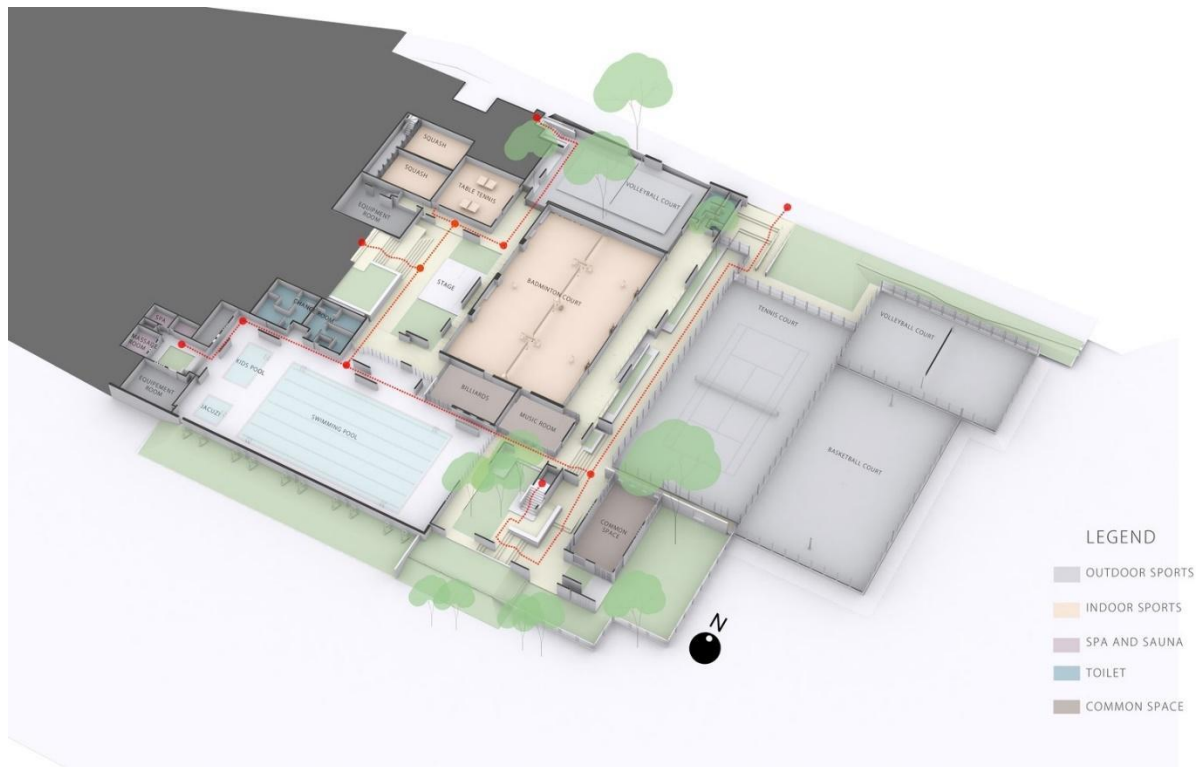


FIG 26: IIM Sports Center | Source: Arch Daily

Every serviced location is connected to via a horizontal link from the plaza level through a set of steep stairs. It comes in like a spine and spreads out into places that are served or have services. The movement is not difficult, but it is also not monotonous because there are some interesting twists.

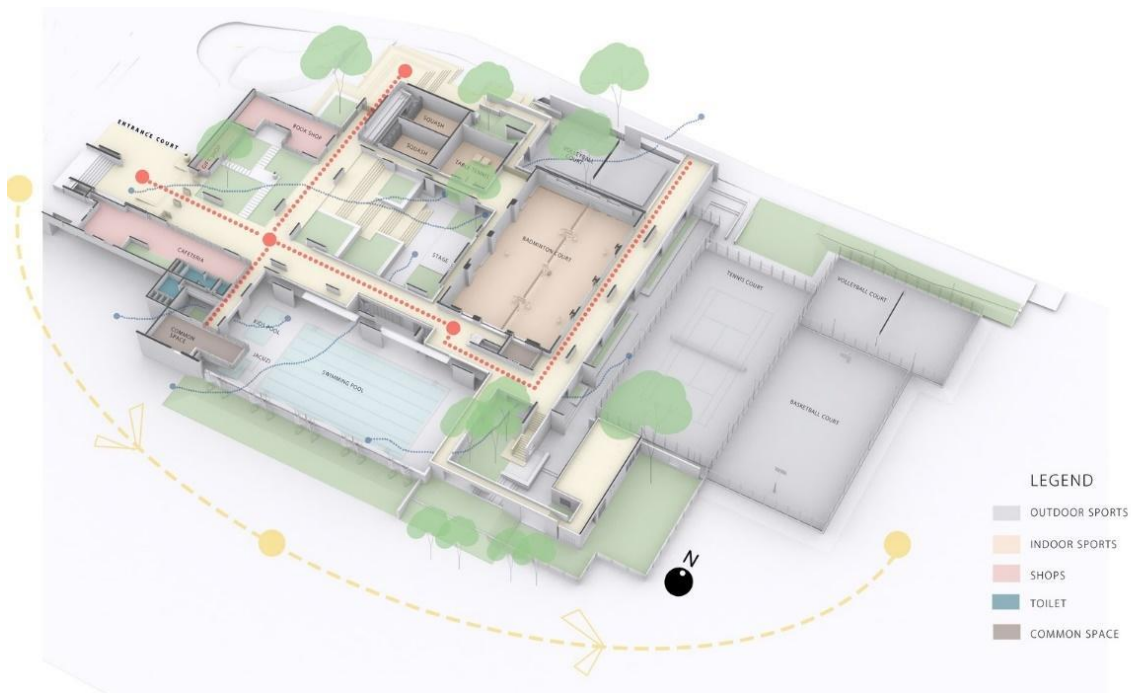


FIG 27: IIM Sports Center I Source: Arch Daily

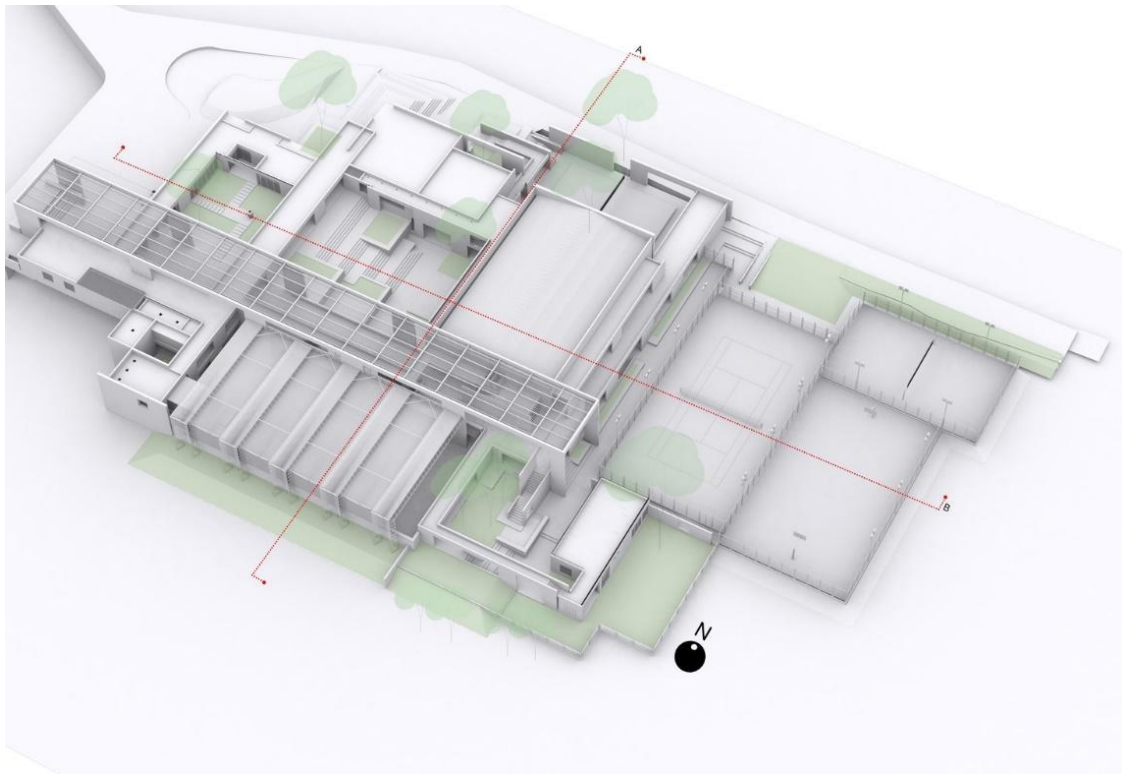


FIG 28: IIM Sports Center I Source: Arch Daily

The project's greenery blends with the contour of the land and is honored by the design, which also takes into account the local vegetation.

The project's framework is made out of a concrete wall with columns and, where necessary, space frames. Due to its modest height, no beam or column construction is necessary; instead, the weight is supported by the wall structure.

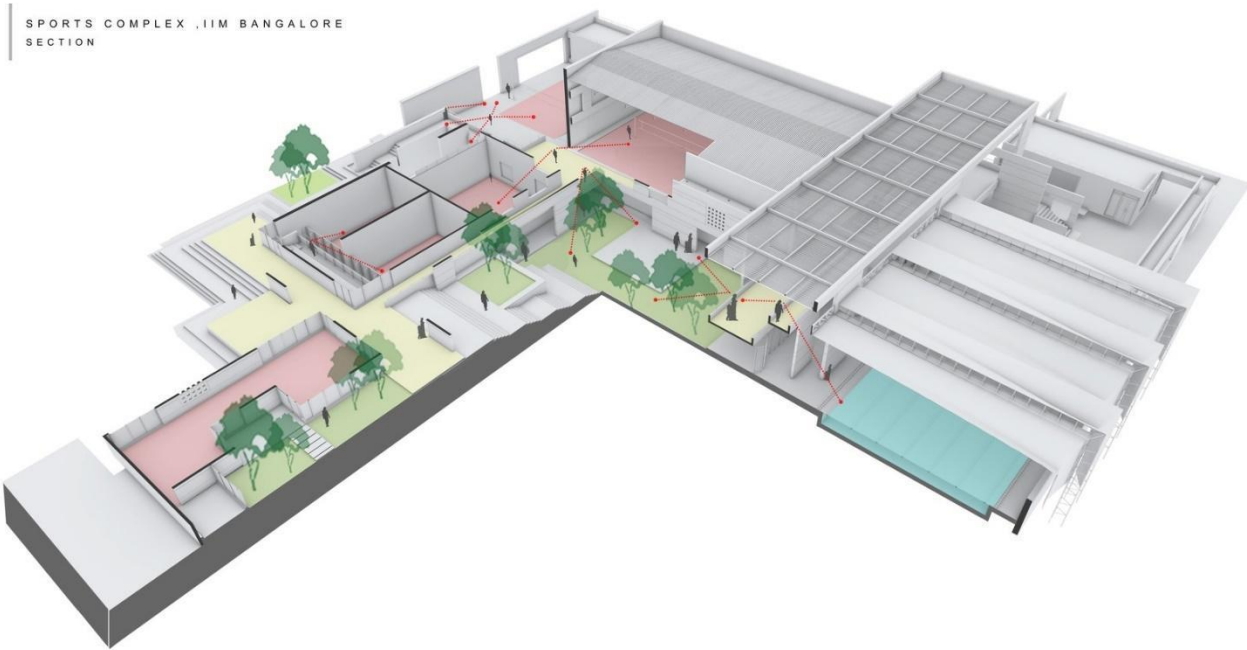


FIG 29: IIM Sports Center | Source: Arch Daily

CHAPTER 05: PROGRAM DEVELOPMENT

The total build area of the project is 1,68,632 sqft and the main functions that are included in the project are multipurpose hall, food courts, admin, medical services, indoor games, sports activities like futsal court, volleyball court, multi court, basketball court, tennis court, badminton court, gym and a olympic competition sized swimming pool. There are other service spaces as well like storage, shops, parking, terraces etc.

The breakdown of the functions per square foot is shown below:

ENTRANCE: 2550 sqft

Zone	Quantity	Area (sq. feet)	Total Area (sq. feet)
Lobby	1	2500	2500
Receptionist	1	50	50

PARKING: 5200 sqft

Zone	Quantity	Area (sq. feet)	Total Area (sq. feet)
Car Parking		3200	3200
Bicycle Parking		800	800
Bus Parking		1200	1200

ADMINISTRATIVE FACILITIES: 5850 sqft

Zone	Quantity	Area (sq. feet)	Total Area (sq. feet)
Lobby		1000	1000
Conference Room	2	1000	2000
Lounge	1	300	300
Admin	5	150	750
Prayer Space	1	1000	1000
Washrooms		300	300
Storage		500	500

MULTIPURPOSE HALL: 7000 sqft

Zone	Quantity	Area (sq. feet)	Total Area (sq. feet)
Lobby	1	1000	1000
Washrooms	2	300	600
Seatings	1	3500	3500
Back Stage			
- Lobby	1	400	400
- Rehearsal	1	600	600
- Storage	1	300	300

- Stage		500	500
- Washrooms	1	100	100

Food Court: 5300 sqft

Zone	Quantity	Area (sq. feet)	Total Area (sq. feet)
Kitchen	1	750	750
Dining	1	2500	2500
Outdoor space	1	1000	1000
Store	1	500	500
Cold Store	1	250	250
Washrooms		300	300

MEDICAL FACILITIES: 2700 sqft

Zone	Quantity	Area (sq. feet)	Total Area (sq. feet)
Treatment Room	2	300	600
Emergency Room	1	300	300
Waiting Room	1	500	500

Doctor's Office	1	1000	1000
Washrooms	2	150	300

INDOOR GAMES: 34250 sqft

Zone	Quantity	Area (sq. feet)	Total Area (sq. feet)
Lobby	1	300	300
Tennis	3	2000	6000
Table Tennis		1000	1000
Chess		400	400
Carom		350	350
Cricket Net Practice	4	750	3000
Badminton Court	3	800	2400
Squash Room	3	600	1800
Storage	1	1000	1000
Multi-Court	2	9000	18000

Sports Facilities: 74205 sqft

Zone	Quantity	Area (sq. feet)	Total Area (sq. feet)
Futsal Court and services		16775	16775
Volleyball Court and services		8180	8180
Multi-court and services		14800	14800
Tennis Court and services		15900	15900
Basketball Court and services		12050	12050
Badminton Court and services	3	6500	6500

GYM: 12250 sqft

Zone	Quantity	Area (sq. feet)	Total Area (sq. feet)
Lobby	1	300	300
Gym	2	3000	6000
Spa	2	2000	4000
Locker Room		850	850
Shower Place		500	500
Washrooms		300	300
Storage		300	300

SWIMMING: 23500 sqft

Zone	Quantity	Area (sq. feet)	Total Area (sq. feet)
Lobby	1	300	300
Swimming Pool (Adults)	1	18000	18000
Swimming Pool (kids)		2000	2000
Shower		600	600
Washrooms	2	300	600
Storage		1000	1000
Maintenance		1000	1000

A detailed study of each program area is provided in the table above, and the primary program typology and summary are displayed above.

CHAPTER 06: DESIGN DEVELOPMENT

6.1 Conceptual Diagram:

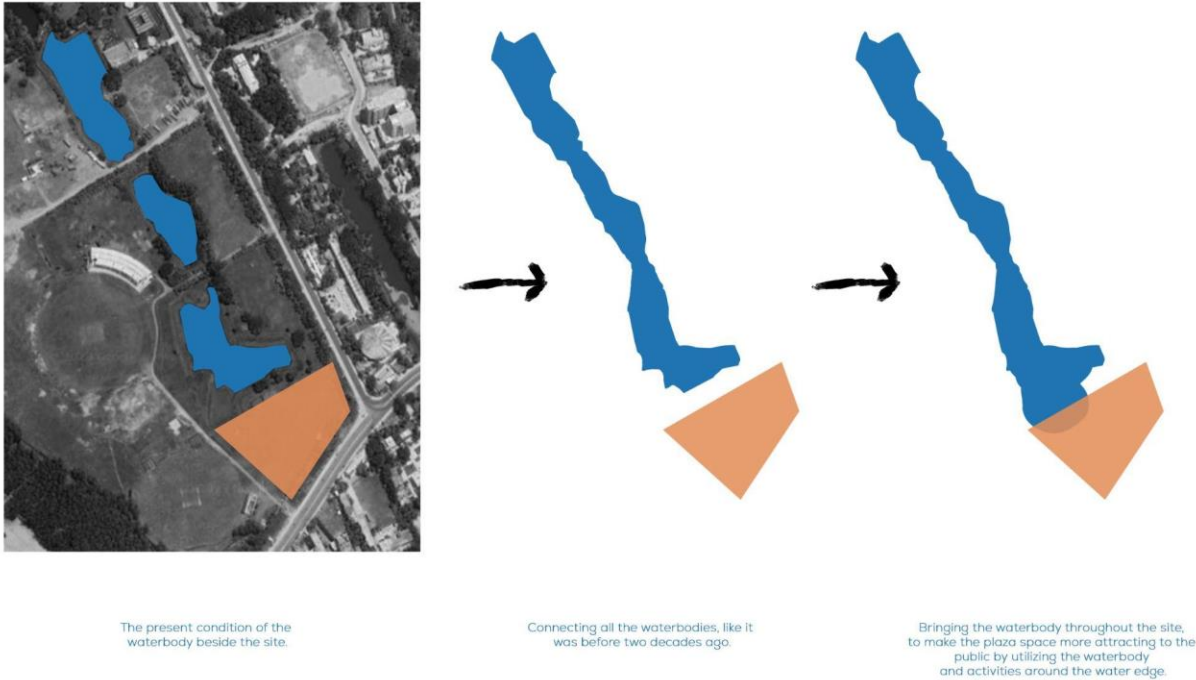


FIG 30: Conceptual Diagram | Source: Author

The Current condition of the existing waterbody is shown in the left diagram, where we can see that the waterbody is divided into several parts due to the road connection. In this project, we will try to reconnect all the water bodies like it was two decades ago, by creating bridges over the waterbody instead of road connections. Then we will try to bring the waterbody throughout the site to make the plaza space more attractive to the public by utilizing the waterbody through boat ride and by other activities around the water edge. This will also provide passive cooling inside the project, by cooling down the west wind.

6.2 Form Generation:

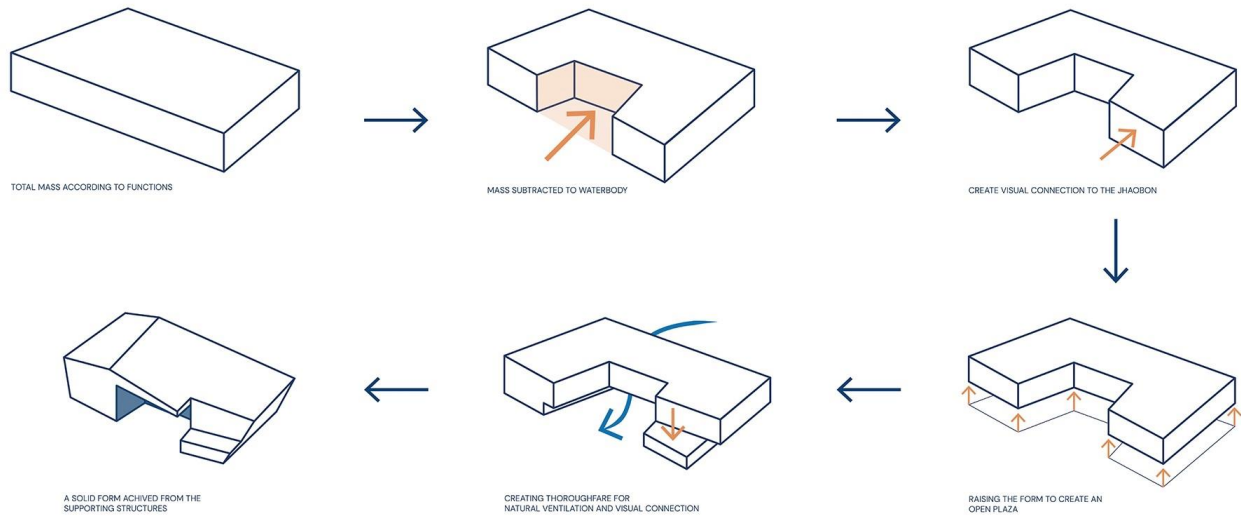


FIG 31: Form Generation Diagram | Source: Author

6.3 Functional Zoning Section

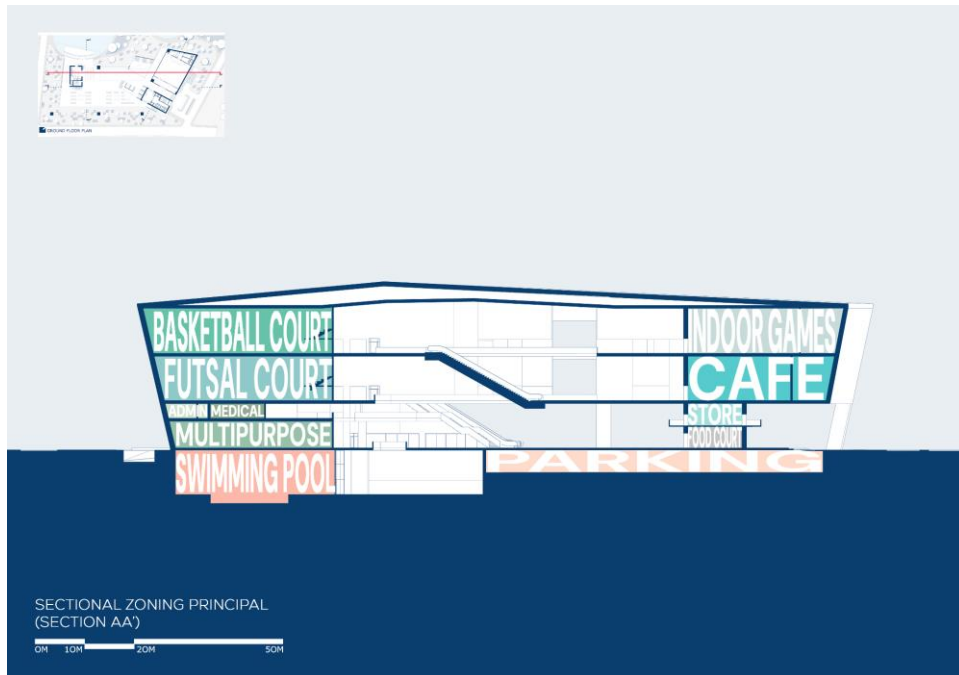


FIG 32: Sectional Zoning Principal (Section AA') | Source: Author

6.4 Top View

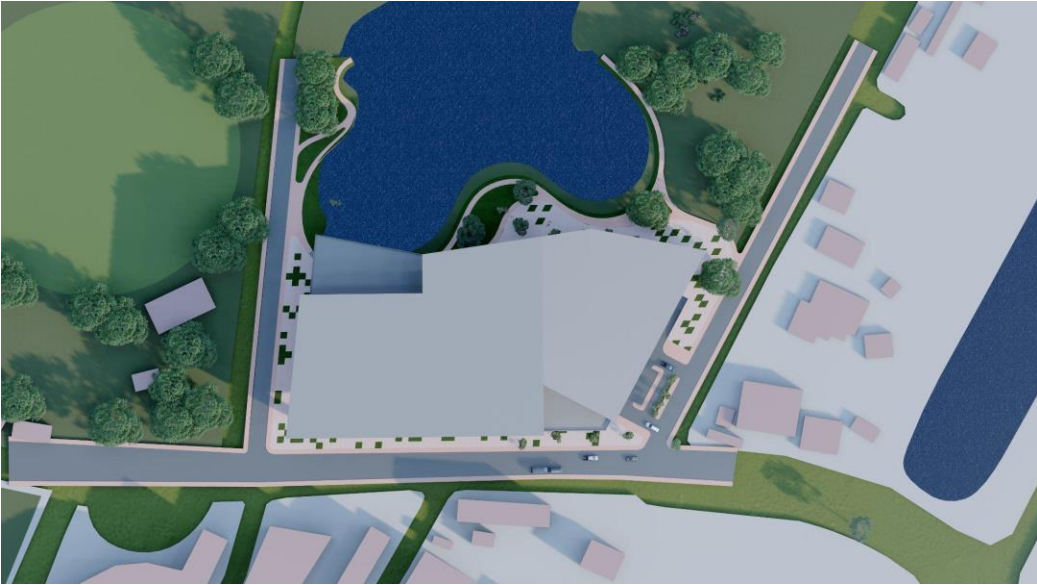


FIG 33: Top View | Source: Author

6.5 Ground Floor Plan

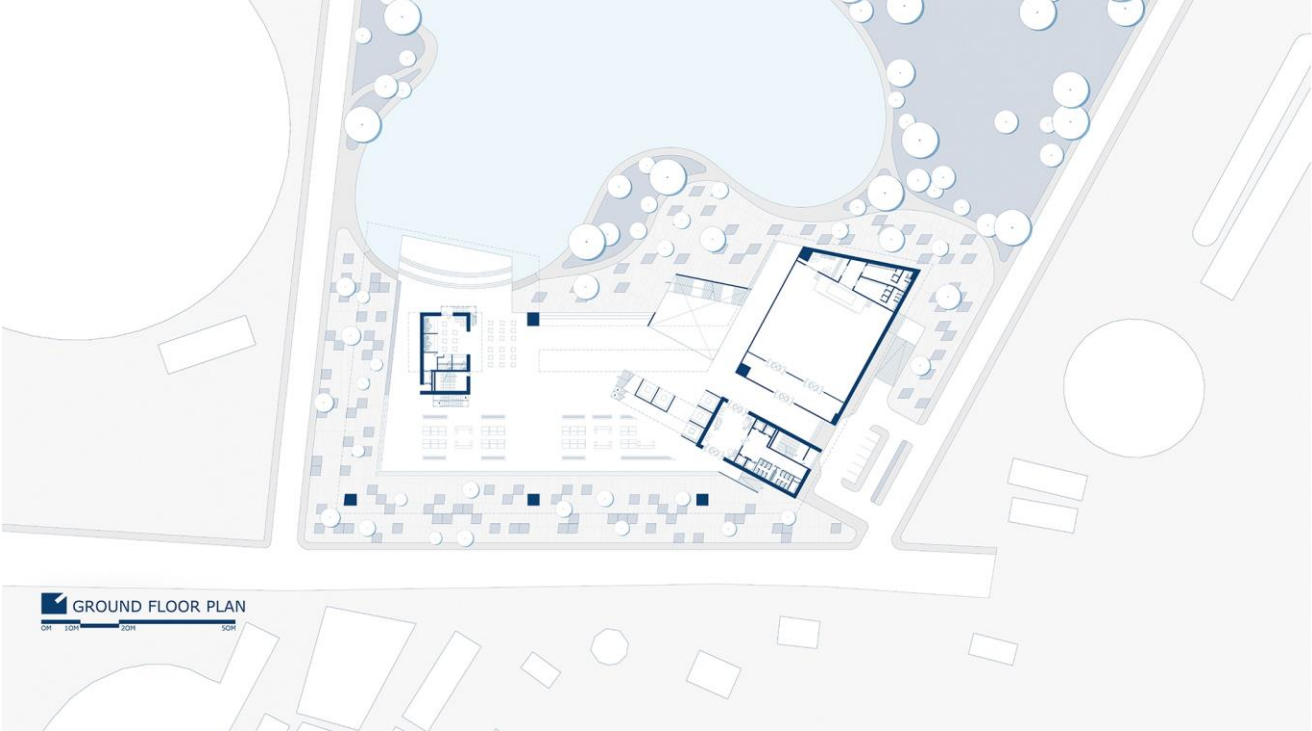


FIG 34: Ground Floor Plan | Source: Author

6.6 Other Floor Plans

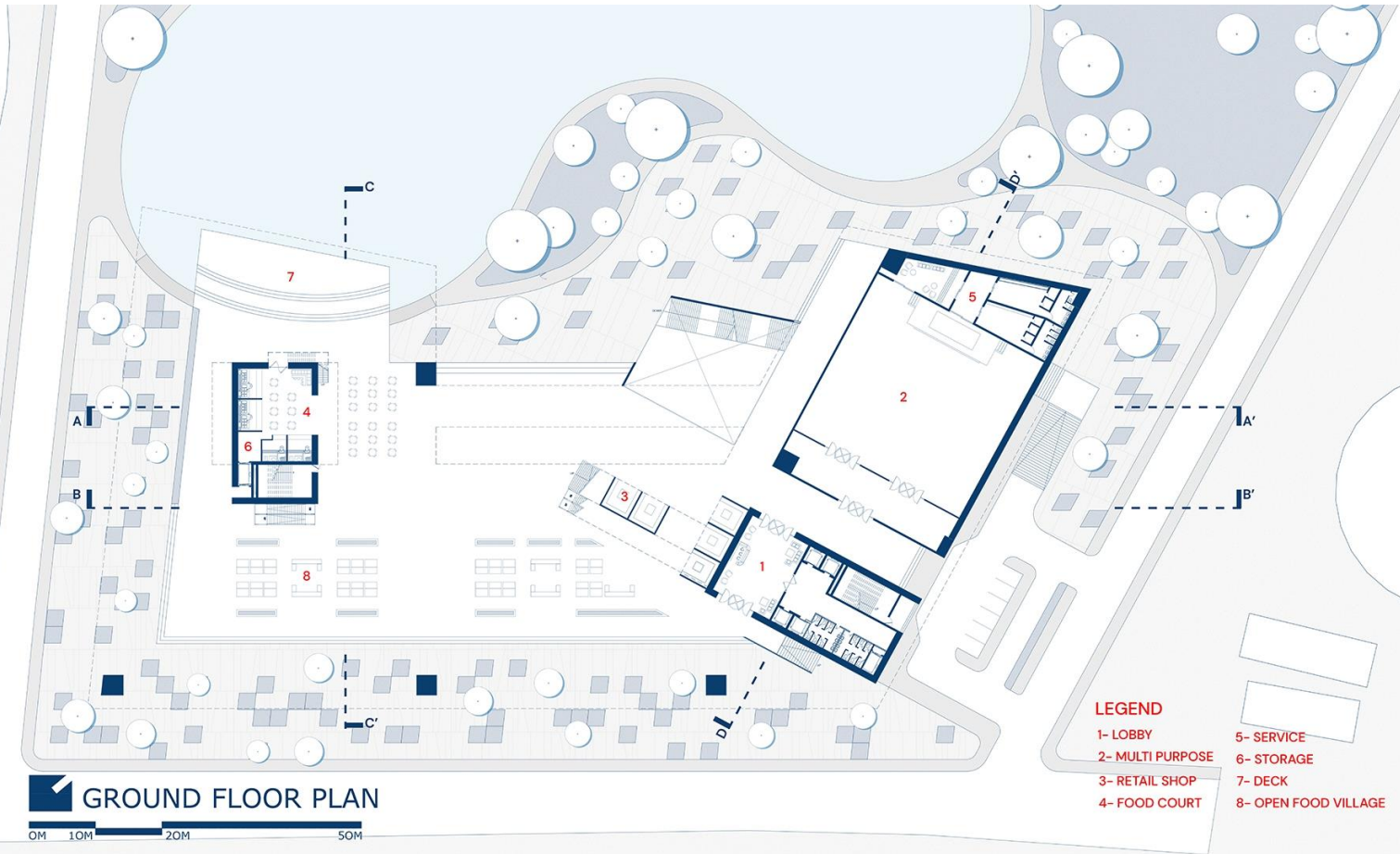
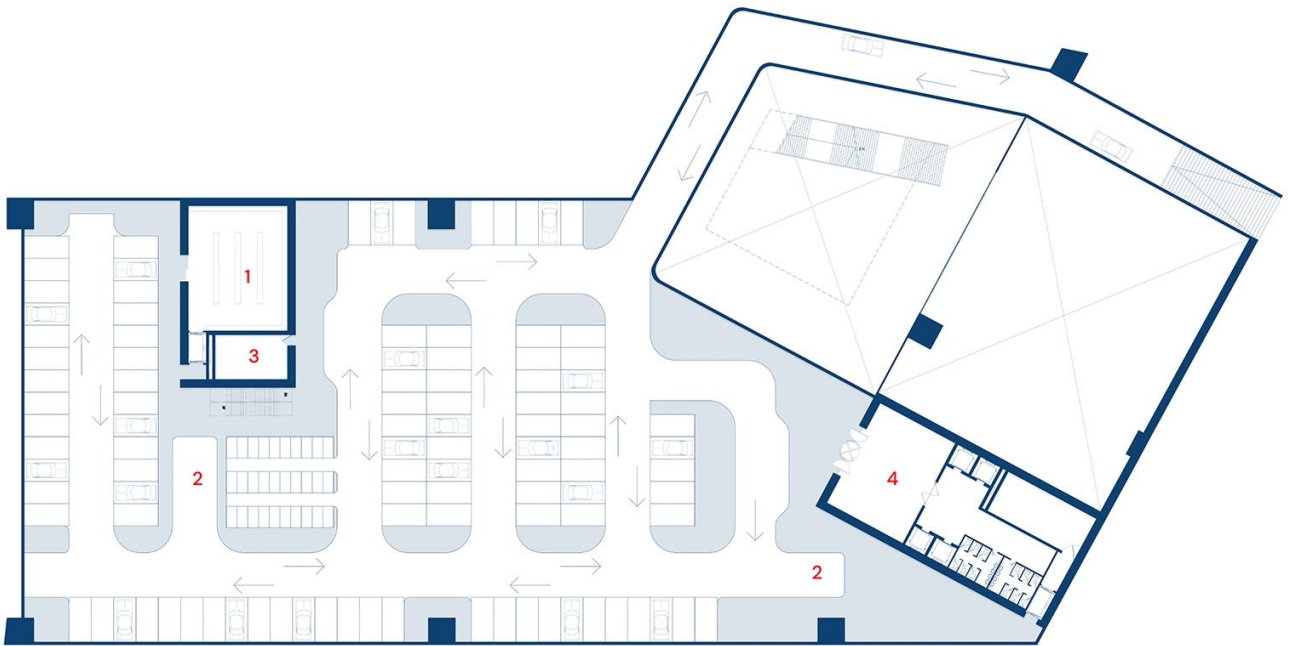


FIG 35: Ground Floor Plan Blow up I Source: Author



- LEGEND**
- 1- STORAGE
 - 2- SERVICE DROP OFF
 - 3- GENERATOR ROOM
 - 4- LOBBY

FIG 36: Basement Plan 1 | Source: Author

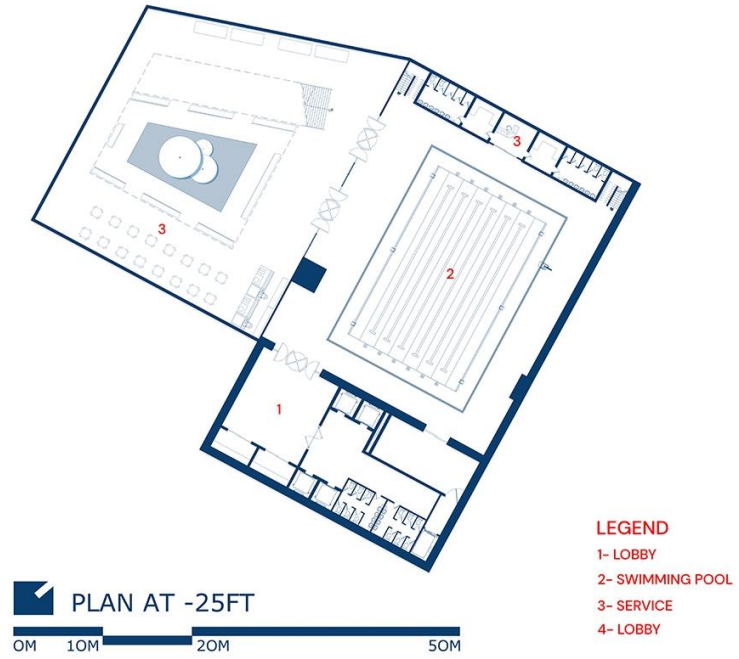
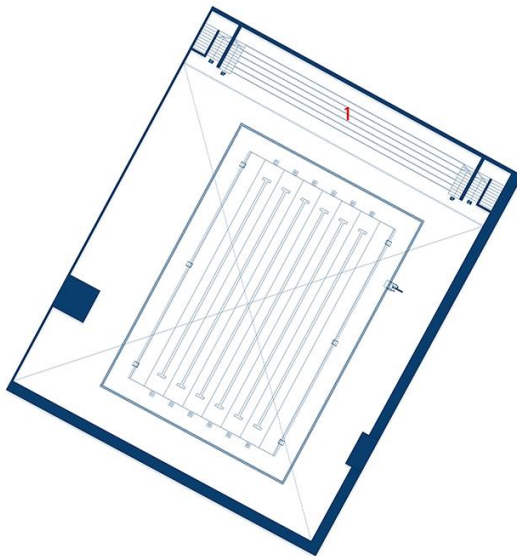


FIG 37: Basement Plan 2 | Source: Author



KEY PLAN



PLAN AT -15FT

LEGEND
1- BLEACHERS

FIG 38: Basement Plan 2 Blow up | Source: Author

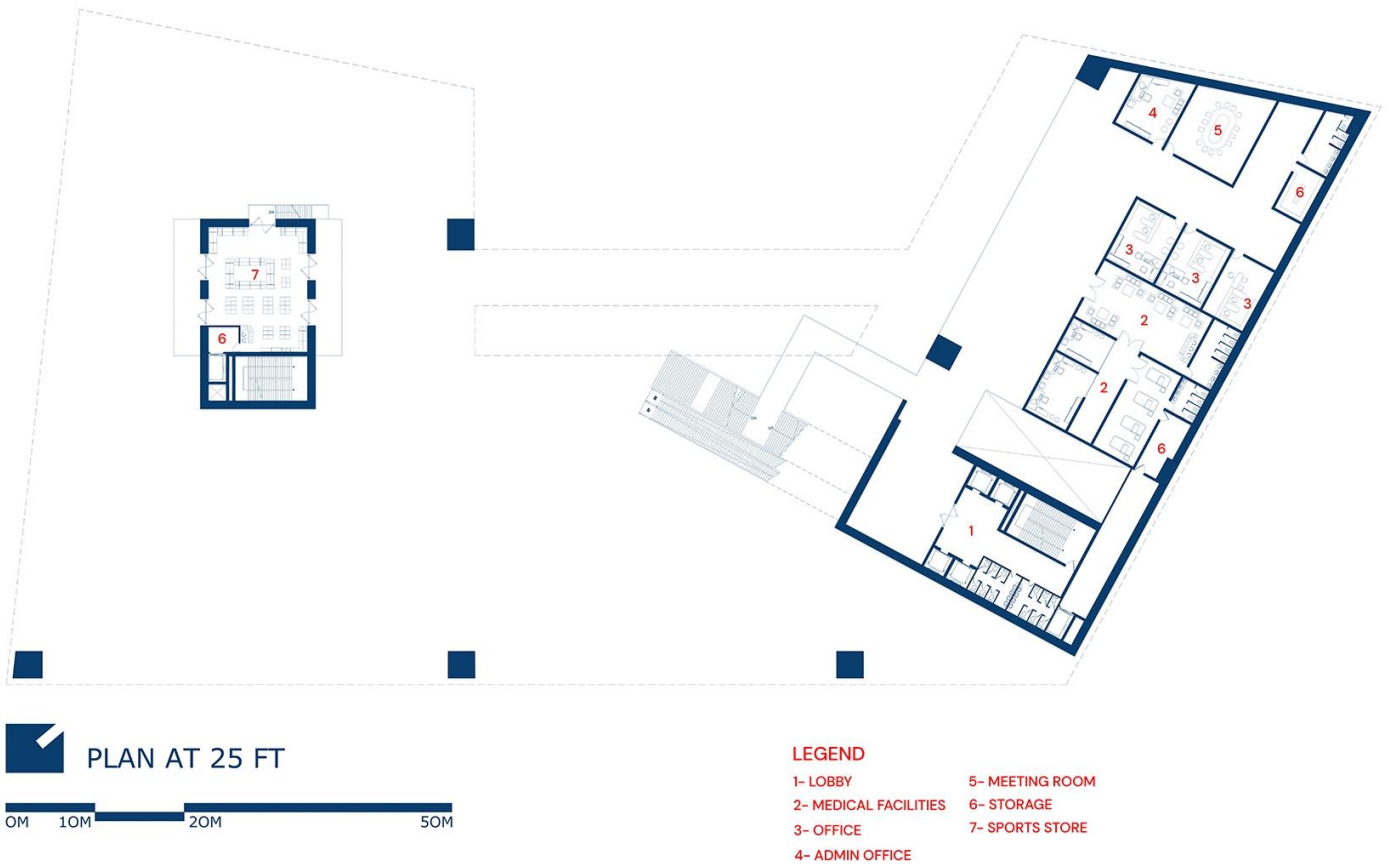
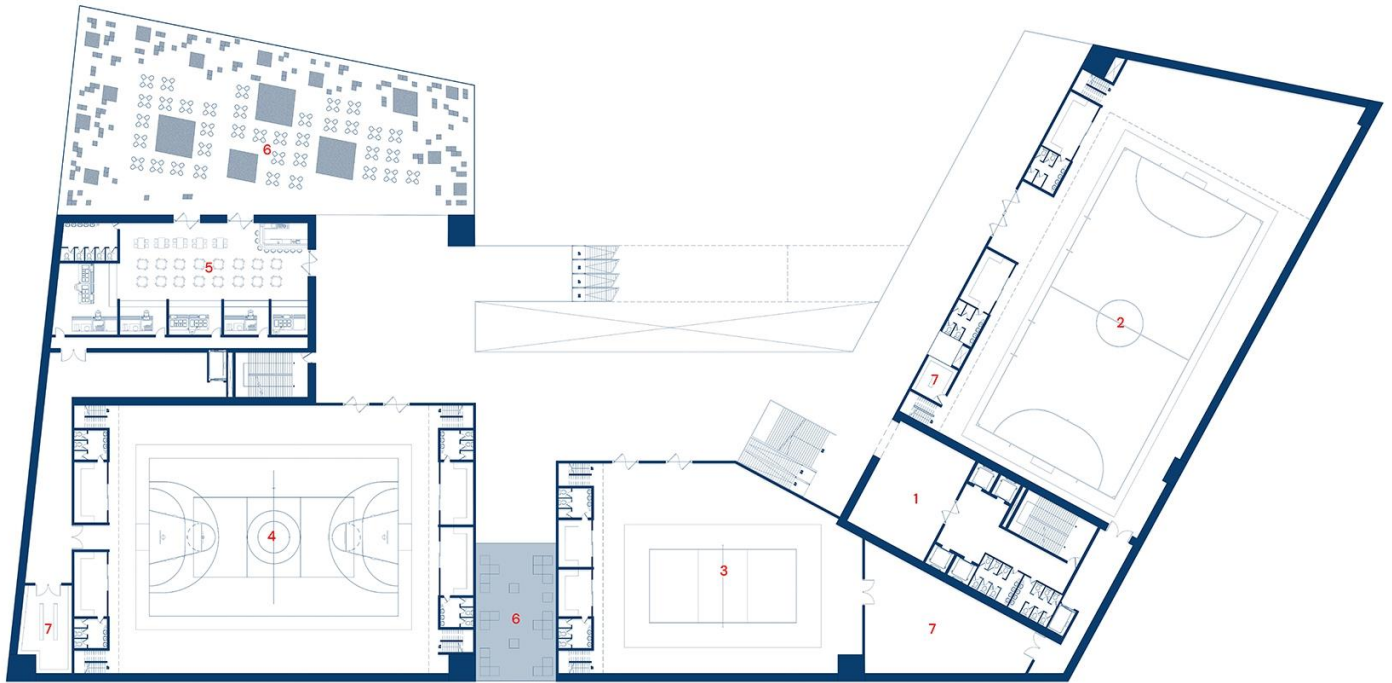


FIG 39: First Floor Plan I Source: Author

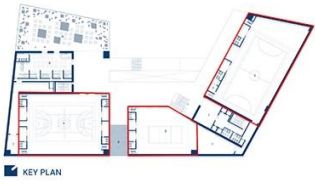


PLAN AT 37 FT

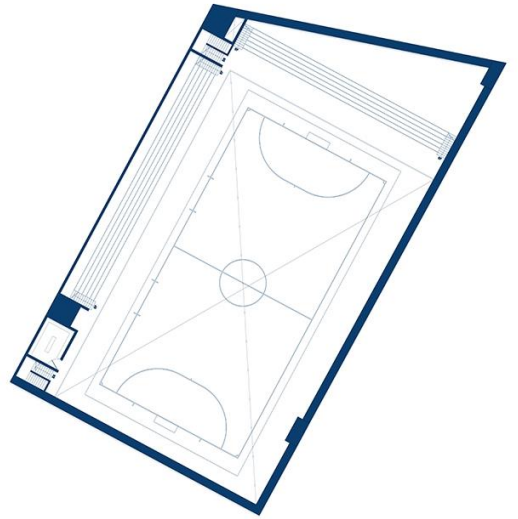
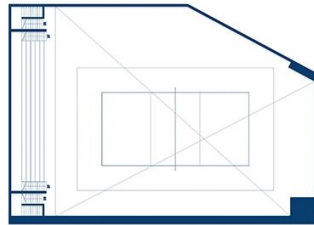
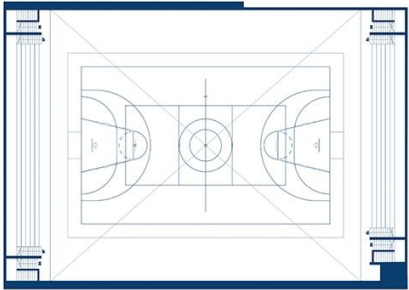


- LEGEND**
- 1- LOBBY
 - 2- FUTSAL FEILD
 - 3- VOLLEYBALL COURT
 - 4- MULTI COURT
 - 5- FOOD COURT
 - 6- TERRACE
 - 7- STORAGE

FIG 40: Second Floor Plan | Source: Author



KEY PLAN



PLAN AT 50FT



LEGEND
1- LOBBY

FIG 41: Second Floor Plan Blow up | Source: Author

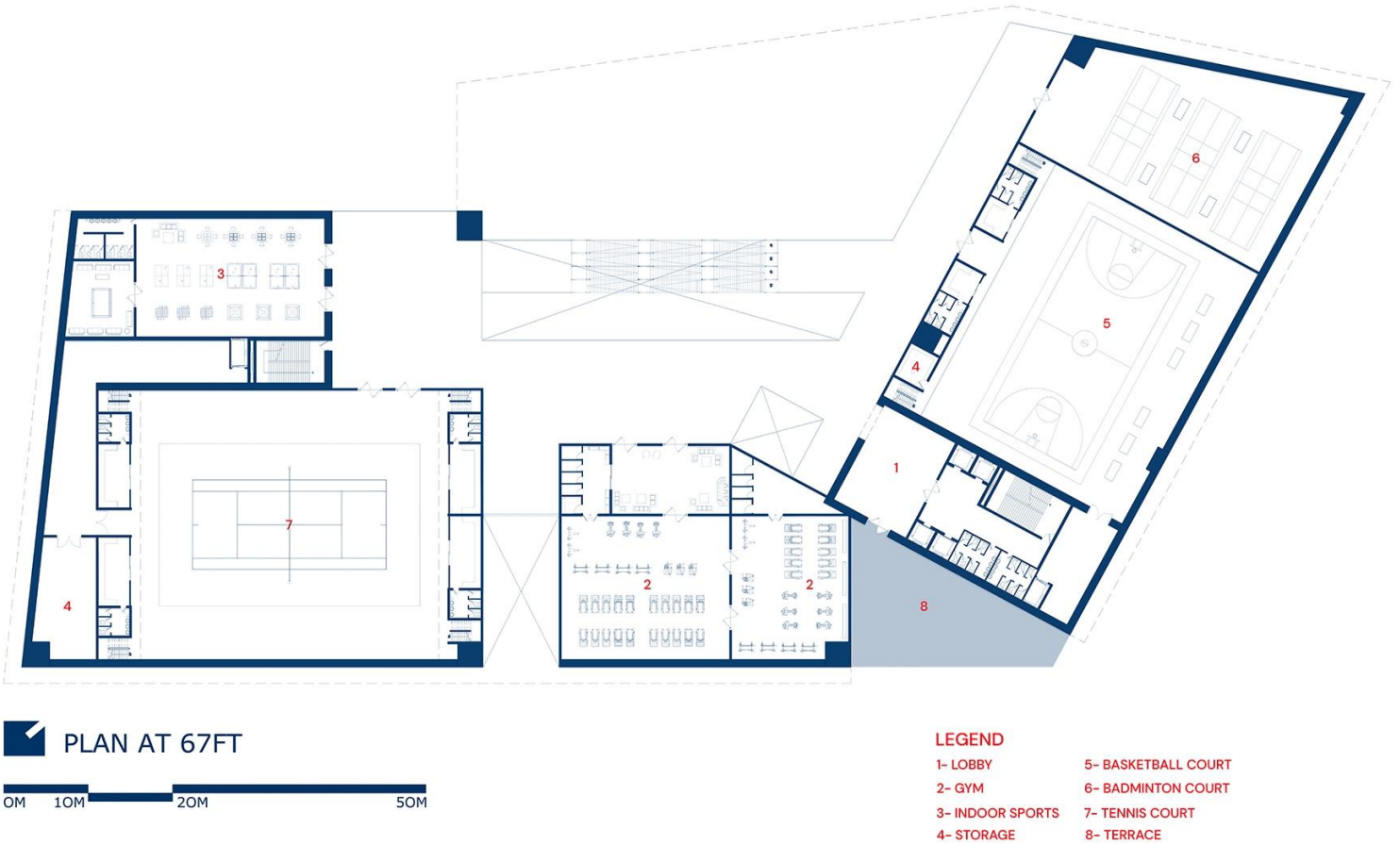
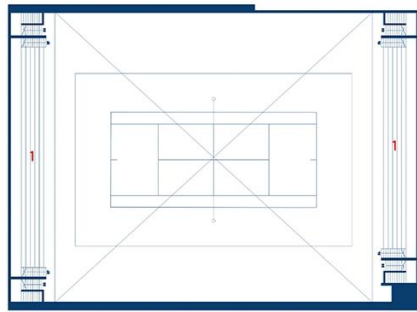
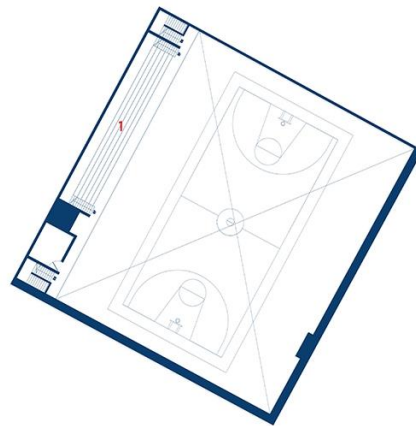


FIG 42: Third Floor Plan I Source: Author



 PLAN AT 80 FT

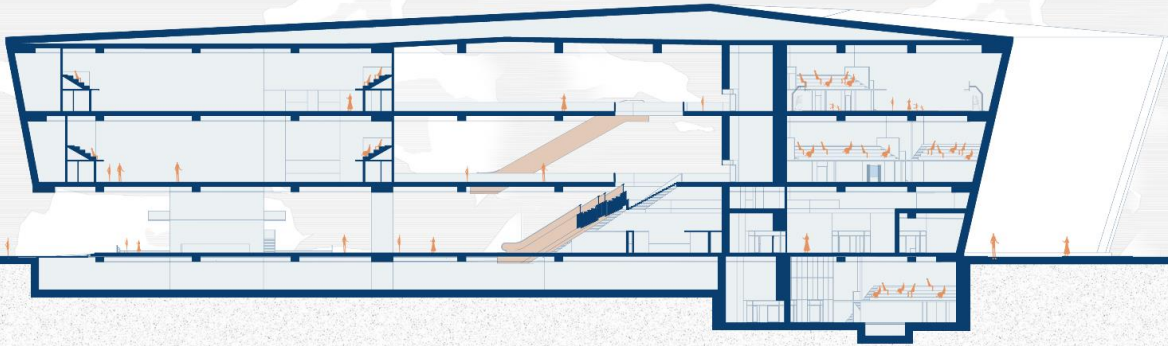


LEGEND

1- BLEACHERS

FIG 43: Third Floor Plan Blow up | Source: Author

6.7 Sections



SECTION BB'



FIG 44: Section BB' | Source: Author

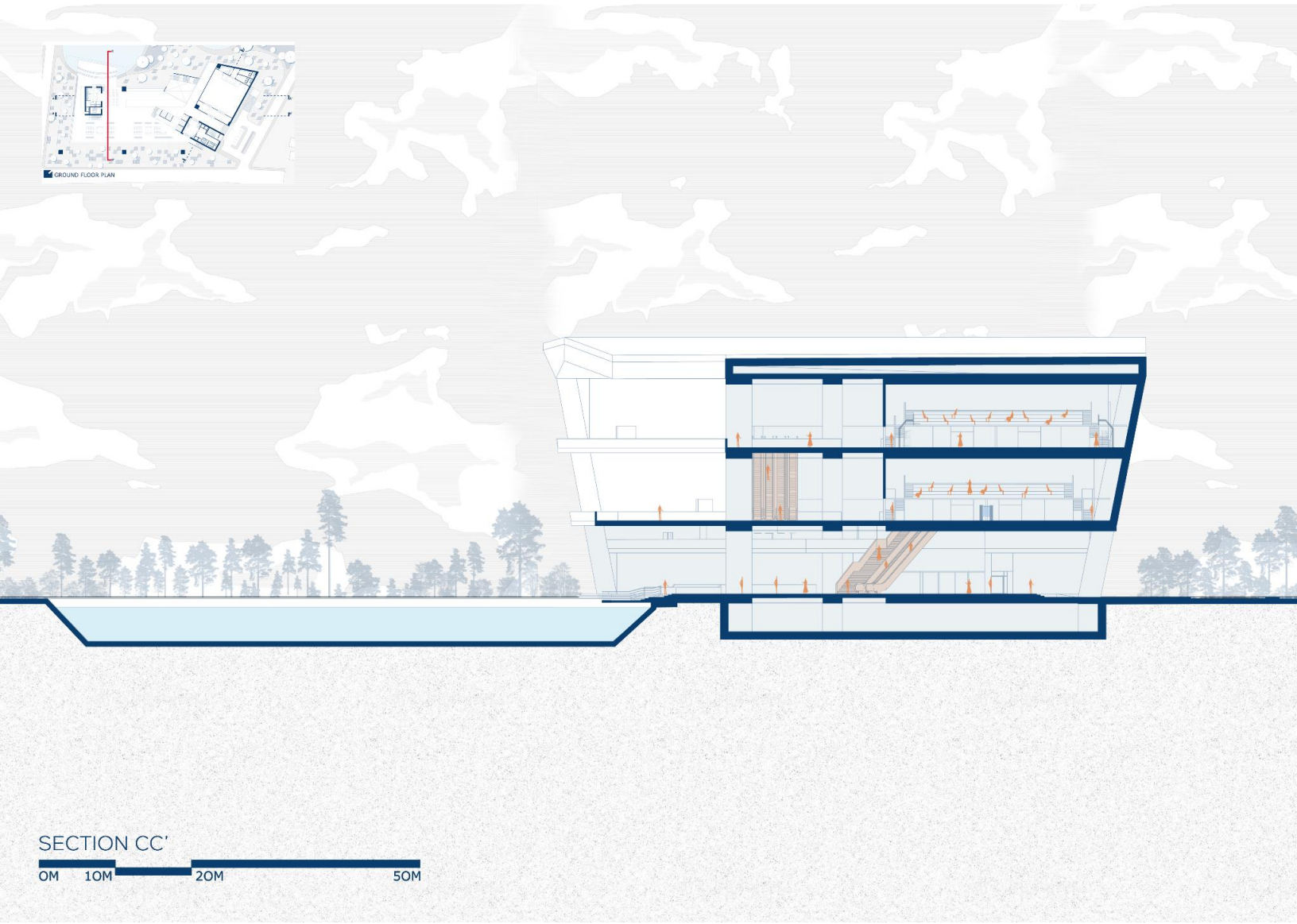


FIG 45: Section CC' | Source: Author

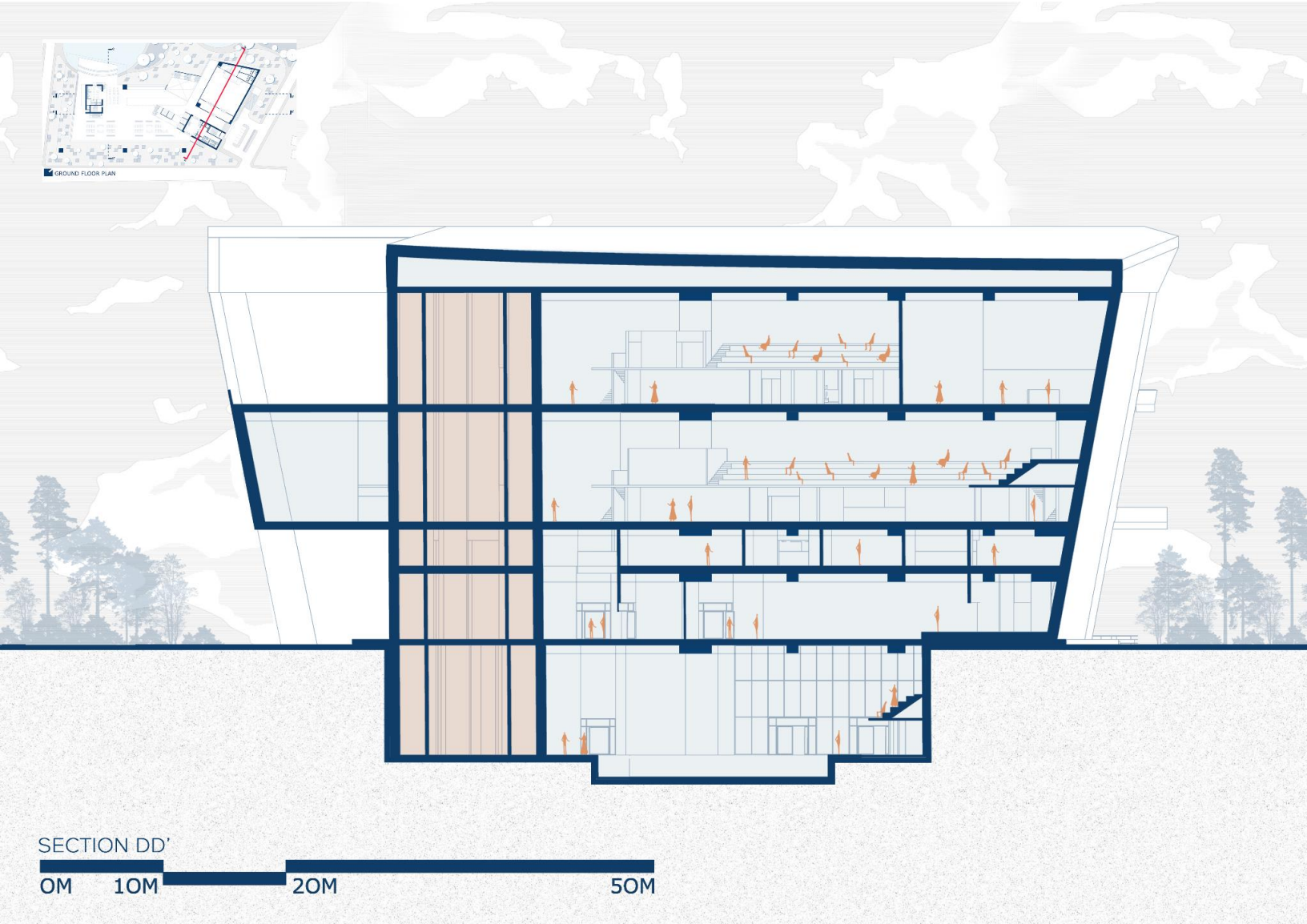


FIG 46: Section DD' | Source: Author

6.8 Elevations

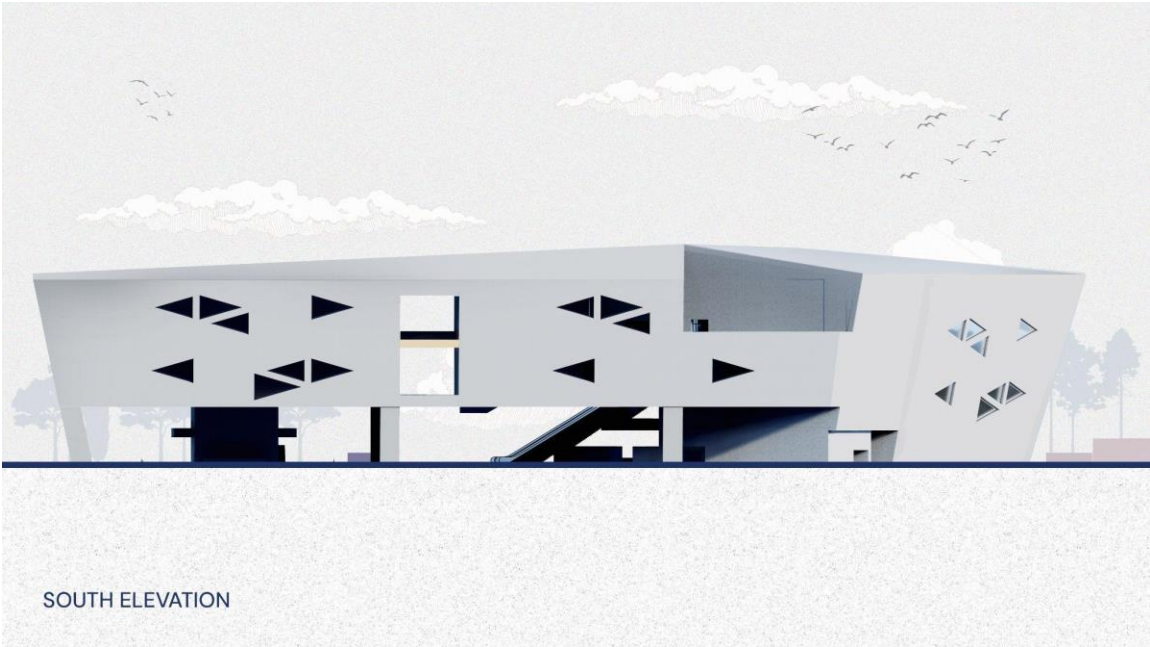


FIG 47: South Elevation | Source: Author



FIG 48: North-East Elevation | Source: Author

6.9 Structural Diagram

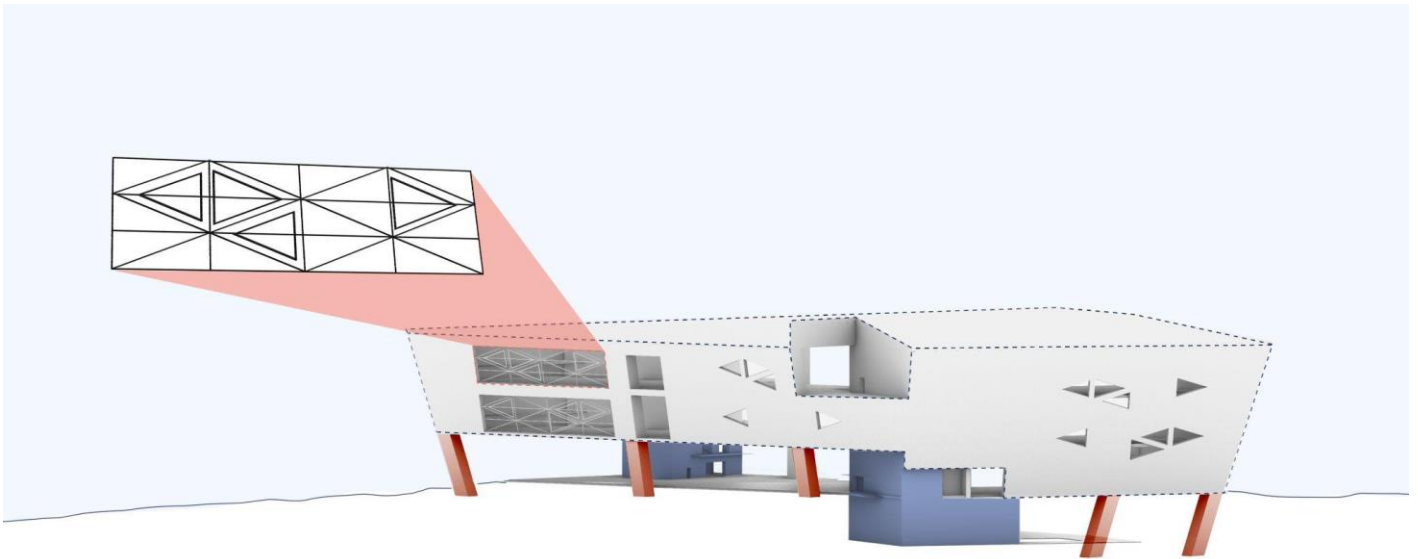


FIG 49: Structural Diagram | Source: Author

In this architecture, the exterior facade is fully structural, like a shell. The wall is made up of concrete infilled structural elements. There are metal bracings through triangulation within the concrete wall. Moreover, at some spaces, in between the triangulated metal bracings there are void spaces created for ventilation purpose.

6.10 Axonometric View

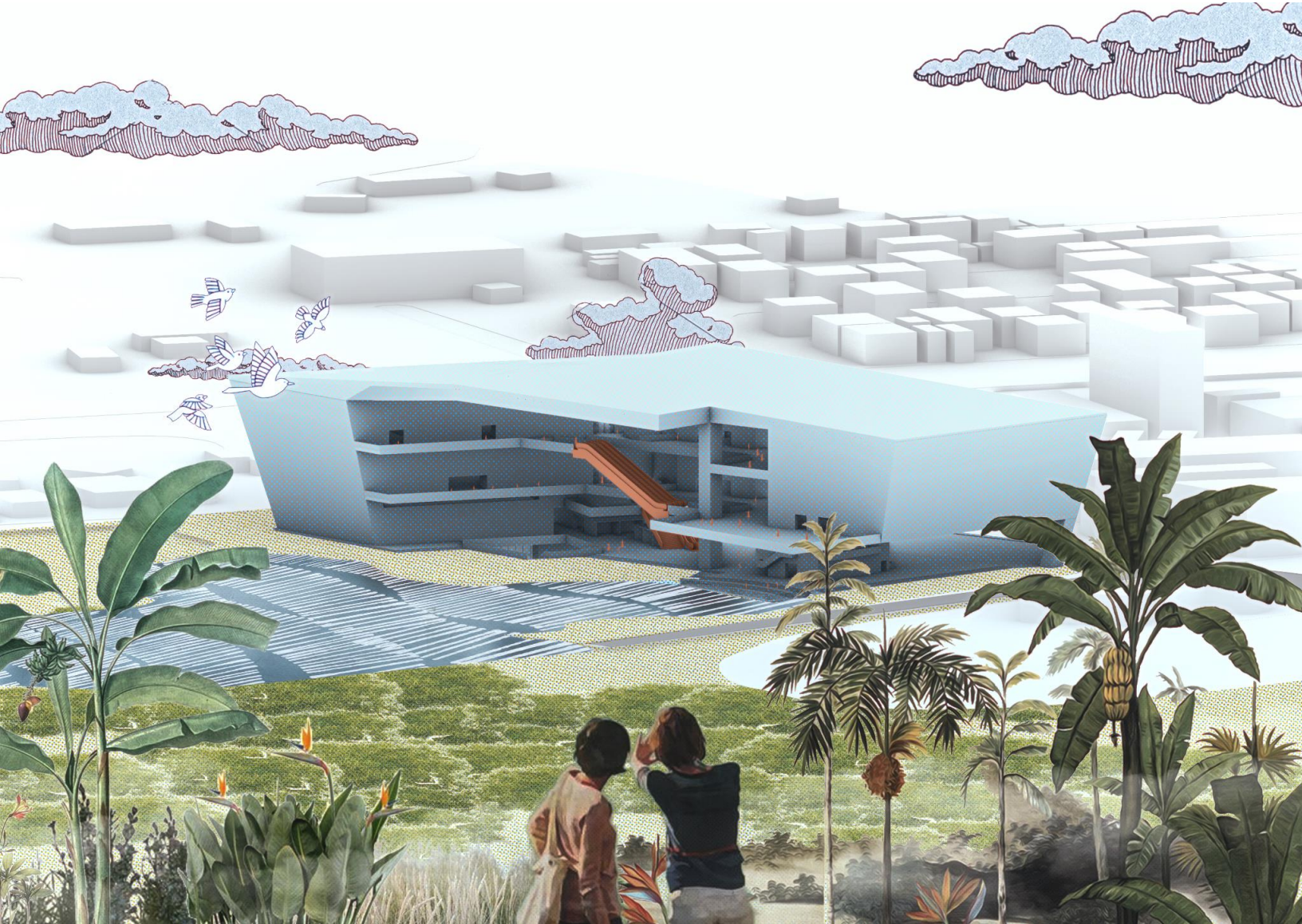


FIG 50: Axonometric View | Source: Author

6.11 Design Visualization



FIG 51: View from Waterbody I Source: Author



FIG 52: Deck View I Source: Author



FIG 53: View from the entry point | Source: Author

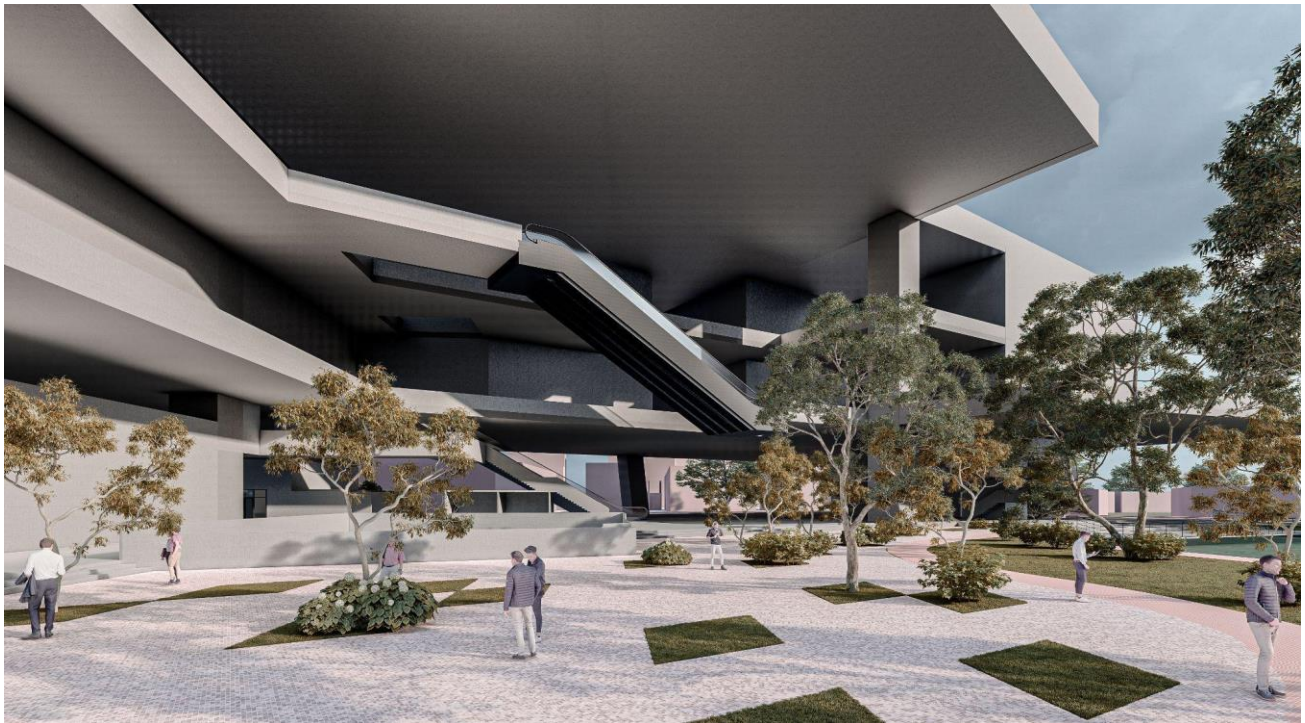


FIG 54: Plaza space view | Source: Author



FIG 55: View from second floor corridor | Source: Author



FIG 56: View of escalator from second to third floor | Source: Author



FIG 57: Multi-court view I Source: Author



FIG 58: Tennis court view I Source: Author

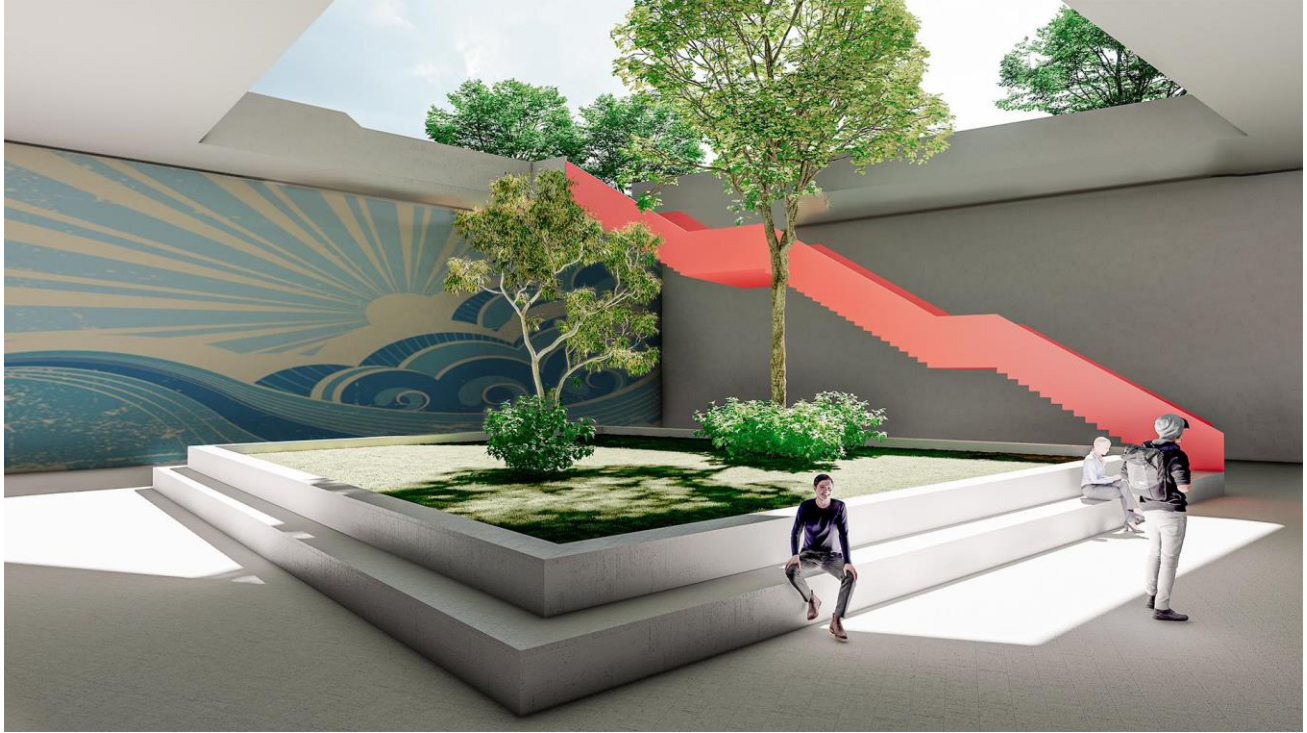


FIG 59: Sunken Plaza in front of swimming pool | Source: Author

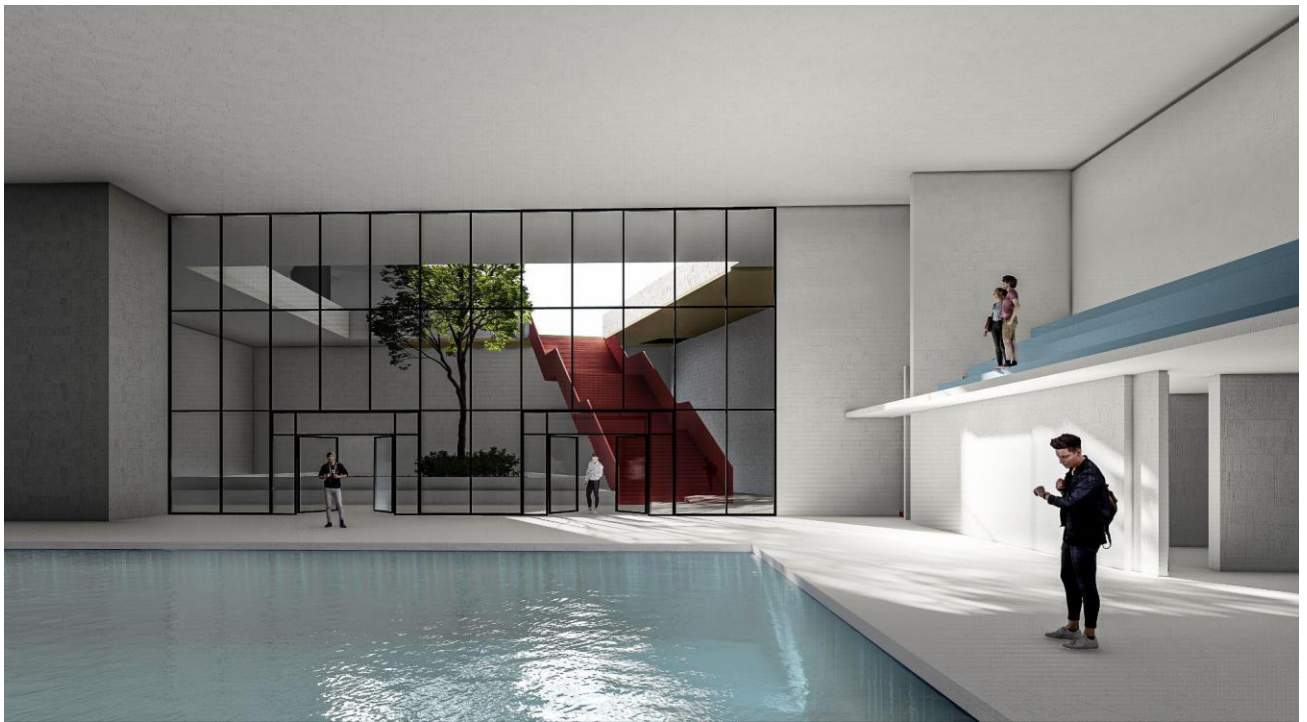


FIG 60: Swimming pool view | Source: Author

CHAPTER 07: CONCLUSION

In conclusion, by offering various levels of sporting activities and public events alongside it, this project aims to benefit the local community instead of creating a large field for competition. Sports are a natural and fundamental part of life. It not only has a physical impact, but it also has a mental impact.

The initiative promotes a complete design approach by digging into basic ideas, adopting smart technology integration, taking socioeconomic effects into account, and giving environmental sustainability first priority. Sports complexes may become dynamic venues that not only support athletic greatness but also make a substantial contribution to the well-being of the community. This is made clear by looking at successful case studies through a lens of transcendence.

The challenge behind this proposed project is on how a fully integrated public sports area may serve as both a significant civic space and a competitive arena. So, in designing the project, considering urban context, I decided to open the ground floor, to get a huge shaded plaza space. Vendors will be moving freely there, beside the waterfront. Moreover, this project seeks to use politics, methods, and design to reach individuals from various socioeconomic backgrounds in a number of ways.

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