Sports Center

Bhatiary, Chittagong

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Contents

Chapter 1

Chapter 1: Introduction

Project brief

Most people regardless of age fitness wealth or location can do outdoor activities. Working class people living in north or hilly area are more fit than the urban people. For many participants simple activities such as off road cycling or walking are great for general well-being. In outdoor activities people relax and take their mind-off things, they encourage relaxed and deep breathing and allow people to appreciate the natural world. As we travel along the spectrum and begin to take on more active and skilled activities such as climbing or skiing. The importance of these outdoor activities has been recognized but the public sector and in many parts of the country, including urban area, efforts have been made to improve access and quality provision. Outdoor activities should be enjoyable, they are also associated with self-development. Outdoor activities by their nature constantly put us in situations that we are unfamiliar with or which can frighten us. If we can overcome these, there is automatically a great feeling of achievement.

The project that is proposed by youth and sports ministry has offered sports mostly outdoor to keep their physic fit and to get a recreation center among urban area. The sports and fitness industry consists of three areas of work.

- Sport, fitness and leisure facilities, e.g. Local authority leisure centers, Swimming pools, sports and fitness clubs
- Stadia and arenas, e.g. football stadia field and track stadia facilities for outdoor and indoor sports event
- Professional sport, e.g. athletes and players, coaches and officials.

In this project I am going to work on the first area of the project. Mostly the project will include a area to keep young generation physically fit with sports and to involve leisure facilities in a urban area. A place where a wide range of athletic activities occur or activities that generate their creative curiosity should be dedicated for them. Skating, surfing, cycling, bowling and even indoor rock climbing can be introduced to give the youths that extra push

1.3Aims and objectives of the project

The aims of the sports center is to retrieve the lost sports ethic and that, apart from the health and social benefits of sports, there is a chance that the pool from which sporting excellence springs is drying up. The ministry have proposal are designed to rekindle the spark of sporting enthusiasm.

- Main aim of the project is to provide urban people a recreational space where the purpose will not be only relaxation but also to keep them physically fit.
- A break from urban life and a space for sports enthusiastic people to practice it more fruitfully.
- A change in sporting values with completive sport in particular becoming politically non-correct
- A change in physic and to change the mentality for hiking or mountaineering to the wild.
- Sports can be fun or explored too, rather than competition.
- To enhance a sense of national cohesion and common interest this would act as a major building force in society as a whole.
- It is tending to sample more activities and often prefer to take up non-competitive activities for their health benefits.
- The result in drift towards recreational playing.
- Recreational facilities also for older adults and for toning and relaxing after a workout.
- Creating a working facilities or a way for employment to the society. 7y62w2ww2

Proposed programs

- Rock climbing
- Cycling track
- Running track
- Gymnasium
- Swimming pool
- Sports hall (badminton,basketball,volleyball)
- Lecture/workshop classrooms

- Food court, Sports Shops, Medical facility, Skating track, Car parking
- Karate
- Skateboardin

Chapter 2

Site analysis

Site location

Youth and sports has several proposals for sports center around the country. Among them the main urban cities like Chittagong and Dhaka they require a site near to the city or inside the city. The location of this site is near Chittagong city it takes 30mins in car to reach the lake. The site consists of rolling hills, deep valleys, vatiari lake, jungle and spectacular view towards the lake and the hills. Its 14km southwest from the commercial area of chittaong. There are three airports near bhatiari. The closest airport is Shah amarat international airport with a distance of 20.9 km south of the city center of bhatiari. The land surrounding of the site representes one of the undeleveped areas of Chittagong's unique hilly landscape. Locating the sports center within the city limits, but in an undeveloped area where its closest neighbors are a golf course and a military training camp and Bhatiari's late natural to the south offers a degree of separation from the activities of the city center and crown or chaos, and in a sense a greater degree of security and seclusion. Recreations activities and the sports that is needed to refresh a mind, is available in the site with the natural resources and the context of the area supports the project to be more sophisticated.

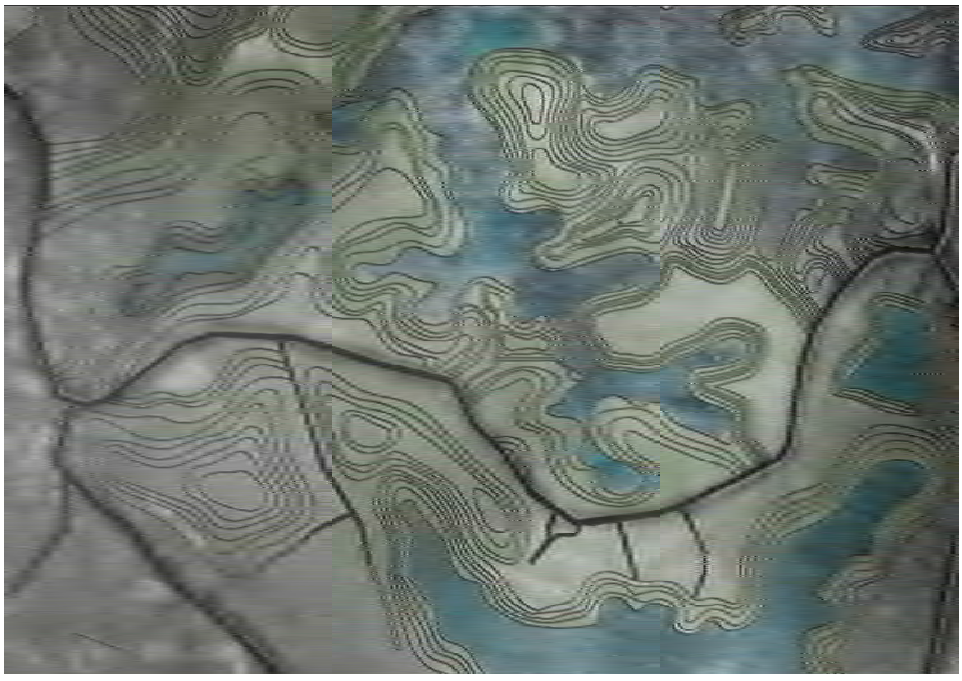


Figure 1.1

Site location

Figure 1.2

Figure 1.3

Figure 1.4

Figure 1.5

As seen in the pictures the nature itself has its own character with various geographical variation in accordance with site in vegetation; giving it an exotic ambience on its own.

2.1 Site surroundings (macro scale)

The site lies 14km on the south west of Chittagong. It usually takes 30mins from Chittagong commercial area to bhatiari by road. There are 3 aipors near bhatiari. The closest is Shah amarat international airport with a distance of 20.9km south of the city center of bhatiari. On the east part or other side of the highway road lies bhariai ship breaking yard along with the sea.

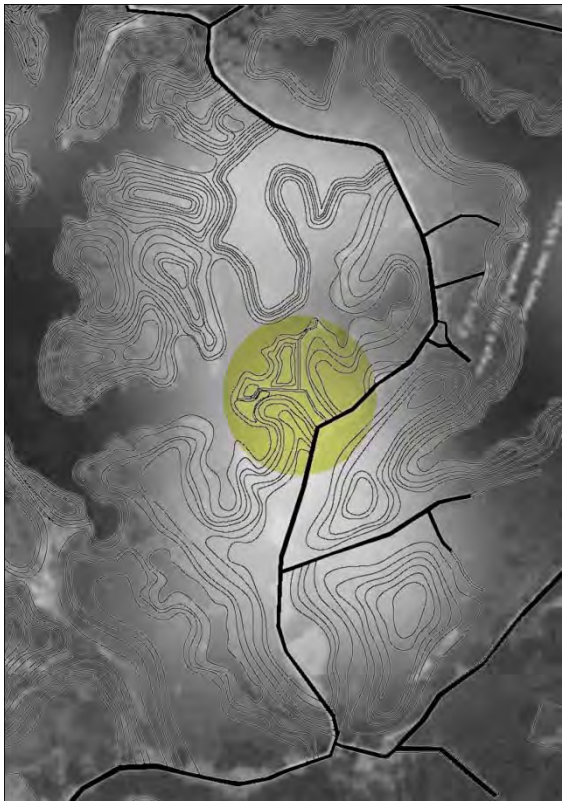


Figure 1.6

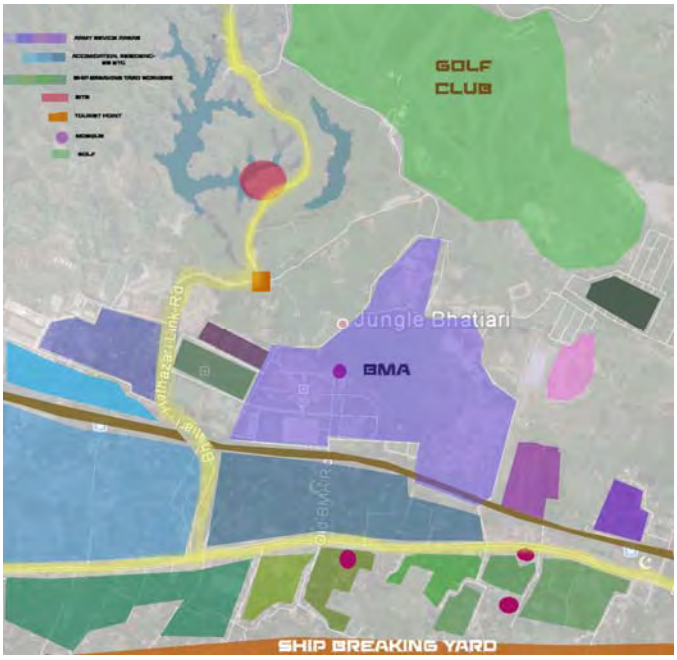


Figure 1.7

But the site is a little bit isolated from the surrounding, as main and busy roads are little far from the site. But the vehicular road goes directly along with the lake. Though this location provides a lush, natural setting, it poses some formidable challenges: thin, fragile ridges articulate the deep. Presented with little available land on which to build.

2.2 Climate (specific to site)

It's covered with low hill ranges ans the soil is is very much fertile as the lake is always full with rain water. There is ship breaking yard a bit far away from the site and adjacent to the sea. There is costal mangrove plantation which reduces the cyclone and other storms. The site was initially unstable, rapid sediment accretation stablised the soil provisind the coast some protection. Annual average temperature is between 32.5 °C (91 °F) and 13.5 °C (56 °F), with an annual rainfall of 2,687 millimetres (106 in).Along with Chittagong and Hathazari, in June 2007 Sitakunda was badly affected by mudslides caused by heavy rainfall combined with the recent practice of hill-cutting. Delicate flora covers the slopes, which become extremely lush following the rains of monsoon season. The root systems of these plants are important in stabilizing the topsoil from eroding. Local harvesting of vegetation, hillside bench cutting and the cutting of city road have left the soil and downhill slopes un-stabilized and therefore prone to continual erosion and further degradation. With no restoration, re-vegetation or protection program of the place, the site will undergo massive erosion during heavy monsson rains. In monsoon the water level rises and the lake becomes livelier to the site. And you will be able to watch the sun going down in the Bay of Bengal. By locating the sports center in one of Bangladesh's unique and endangered landscapes, and by applying local buildings traditions coupled wuth new technologies and design innovations Civic sports center has an opportunity to offer the country and region a new, sustainable building paradigm.

Figure 1.8 (Contour map)

2.3 Social background of the site

Chittagong District is a district located in the southeastern region of Bangladesh. The port city of Chittagong, second largest city in Bangladesh, is located in this district. Being a port city from early times, Chittagong attracted people from various regions of the world. These international contacts left a lasting impact on the language, religion and culture of the city. Chittagong used to be under rule of Arakan kingdom. Then the Arabs came. Al Idrisi, writing in 1154 AD, states that Arab merchants from Baghdad and Basrah frequently visited an area near the mouth of the Meghna, which is now generally believed to be Chittagong. Other travelers and historians have recorded Arab contacts with Chittagong as far back as the ninth century AD. Apart from the merchants, many sufis and saints also visited and settled in Chittagong. The conquest of Bengal by BAKHTIYAR KHALJI in 1204 led to large-scale Muslim settlement in Chittagong. Of the Europeans, the descendants of the PORTUGUESE are still to be seen in Chittagong. Most of them married local women and are known as Kala Firinghis or Matia (earth colored) Firinghis. They are mostly Roman Catholic Christians. The frequent intercourse with people of different races, religions and cultures, which trade and settlement entailed, left a permanent mark on the physical features, dialect, culture and religion of the people of Chittagong.
The vast majority of the people of Chittagong are Muslims; a small percentage of Hindus and Christians also live in the city. The people of Chittagong are very enterprising and since its history of 1400 years, they have always been found ready to leave their hearth and home in search of better opportunities.
The city has its own culture and history, which is different from the other cities, as a site the topography, is also very different and hilly. The society here is very varied and colorful but a bit conservative, which is changing and they are welcoming all the positive things in their city.

Apart from the Bengali majority, there are a number of small communities of ethnic minorities in the area. Many of the resident Rakhine people are believed to have settled here during the Arakanese rule of Chittagong (1459–1666), though the event is not historically traceable.[64] The Rakhine population in Khagrachari District migrated from the surrounding area and built up their permanent abode at Ramgarh in the 19th century.[64] Other ethnic groups include the recently migrated Tripuri people.[65] In the District of Chittagong that includes Sitakunda, the population ratio by religion in 2001 was Muslim 83.92%, Hindu 13.76%, Buddhist 2.01% and Christian 0.12%, with 0.19% following other religions. In 1981, it was Muslim 82.79%, Hindu 14.6%, Buddhist 2.23% and Christian 0.21%, with 0.19% following other religions.[66] Chittagonian, a derivative of Bengali spoken by 14 million people mainly in the Chittagong district,[67] is the dominant language.

As this civic sports center, different people will come from different places and have their leisure time in here. This is place where a person can take a break from urban life and relax. The

site is obviously a small part of the city, but a significant part and the main center of city is little far, but a very suitable place for a university.

2.4 Reason for choosing the site

The main site was given in the city near CRB area. But the site area is filled up with unplanned settlement and irregular activities. For a sports center it needs minimum 3-4lakh sq.ft. space. But the proposal is in 12thousand sq.ft. So I choose this site a bit outskirt from the city and less crowed so the center doesn't get disturbed for urban area. Bhatiari has a lake adjacent to the site and the water body can be used to the project.

2.5 SWOT analysis

Strength

- The site is located in the outskirts of Chittagong, so there is less chance of chaos/crowd.
- The hills and the lake make the site view more vibrant and appealing.
- Golf club of bhatiari and cantorment are near the site. So the site represents a relaxing and calm area.
- The natural beauty of the site is magnificent.
- City view from hill top.
- One of the major tourist attraction spots in Chittagong

Weakness

- Ship breaking yard is near the site. So the pollution can effects the water.
- In monsoon season the lake water rises and causes trouble to the land.
- Landslides often occur for unplanned settlement
- It's a bit far away from the city.
- No settlement near the site.

Opportunities

- The couture/hills have the scope to design something different.
- A sports center from out of the city makes a recreation space and break from the urban and busy life.
- A sports center in such a location can help the army people and others to use it more usefully.

Threats

- Lack of security as the location is far away from any settlement.
- Landslides during monsoon can cause major distruction.

Chapter 3

Literature review

> *"Incorporated into the definition of 'sport' are all forms of physical activity that contribute to physical fitness, mental well-being and social interaction. These include: play; recreation; organized, casual or competitive sport; and indigenous sports or games."*
>
> **- United Nations Inter-agency Taskforce on Sport for Development and Peace**

There is no universally accepted definition of sports and exercise medicine (SEM). The nature of the discipline has changed over time and continues to do so as SEM begins to clarify its scope more clearly and delineates itself from the traditional medical specialties.

This lack of a universal concept of SEM raises a number of dangers for the future development of the specialty that is starting to become apparent. By its very nature, the process of recognition of SEM as a new medical specialty means that the scope of the field has to be defined in government regulations.

This formalized definition then has the potential to be hijacked by competing priorities between clinical SEM practitioners who have evolved the specialty over time and health department civil servants who are looking for ways and means to obviate the growing public health burden associated with inactivity. Although the two views share common ground, the underpinning philosophy is fundamentally different and this subtle burocratic re-focussing directly influences training and how the field of SEM evolves in the future.

3.1 Adventure sports

Adventure sports completely differ from the traditional sports due to the extreme risk factor involved and also the thrill which is experienced in these types of sports. In some countries, these sports are also called "extreme sports."

These games gained the popularity in the 90s when some marketing companies started to promote them. These sports include a huge variety of sports which ranges from wind surfing,

aero sports, kite surfing, bungee jumping, skydiving, scuba diving, paragliding, parasailing and many more to extreme sports like for instance rock climbing, cave diving and mountain biking.

Unlikely the traditional sports, the adventure sports are administrated by a number of uncontrollable factors like for instance mountains, snow, water, wind and many more depending upon the type of sport. These offer thrill and excitement to viewers as well as the participants. The sports are designed to satiate the thirst for adventure of many adventure-loving, challenge-seeking athletes and sportsmen.

IMPORTANCE OF SPORTS

The importance of sports and games in encompasses more than just the benefit of physical activity. Increases in self-esteem and mental alertness make school sports and games necessary for every school age child. Although the benefits of school sports abound, with a diminishing economy, many schools are cutting out sports and physical education programs to the detriment of students nationwide. Benefits According to Theodore Hesburgh, author of "The Importance of School Sports and Education," it is imperative for school age children to have access to sports and games. Not only does it empower youth and promote higher self-esteem, it also motivates students, enables them to earn better grades, especially in schools where obtaining certain grades is a pre-requisite to staying on the team. Numerous physical benefits include maintaining a healthy weight, preventing chronic diseases and learning the skills necessary to maintain a healthy lifestyle after graduating. Considerations Promoting physical activity should start from the nursery room, according to Jean Zimmerman and Gil Reavill, authors of "Raising Our Athletic Daughters." Promoting athletics as a parent is a crucial factor in determining whether your child will be interested in participating in sports. Playing with your child, whether throwing a football or baseball with your son, or teaching your daughter how to swim, teaches them the importance of being active. Encouraging your schoolage child to participate in a sport of their choice may be the reason they continue to play when they enter school.

A number of factors influence the way in which sport and physical activity impacts on health in different populations. Sport and physical activity in itself may not directly lead to benefits but, in combination with other factors, can promote healthy lifestyles. There is evidence to suggest that changes in the environment can have a significant impact on opportunities for participation and in addition, the conditions under which the activity is taking place can heavily impact on health outcomes. Elements that may be determinants on health include nutrition, intensity and type of physical activity, appropriate footwear and clothing, climate, injury, stress levels and sleep patterns.

Sport and physical activity can make a substantial contribution to the well-being of people in developing countries. Exercise, physical activity and sport have long been used in the treatment and rehabilitation of communicable and non-communicable diseases. Physical activity for individuals is a strong means for the prevention of diseases and for nations is a cost-effective method to improve public health across populations.

Physical activity and psychosocial health

The WHO has estimated that “one in four patients visiting a health service has at least one mental, neurological or behavioral disorder, but most of these disorders are neither diagnosed nor treated”. A number of studies have shown that exercise may play a therapeutic role in addressing a number of psychological disorders**.** Studies also show that exercise has a positive influence on depression. Physical self-worth and physical self-perception, including body image, has been linked to improved self-esteem. The evidence relating to health benefits of physical activity predominantly focuses on intra-personal factors such as physiological, cognitive and affective benefits, however, that does not exclude the social and inter-personal benefits of sport and physical activity which can also produce positive health effects in individuals and communities.

Social Benefits

There are a wide range of social benefits of children playing sport. The value of having young people participating in physical activity can often be overlooked. Yes, they want to have fun and be active and healthy, but what about the importance of making friends, feeling as if they fit in and limiting their amount of free time with no direction.

Involvement in sport is one way young people can develop self-confidence and high self-esteem. Participating in sport and other forms of physical activity can assist in building your child's confidence as well as allowing them to gain a sense of achievement. For a lot of kids sport is their chance to shine, but others can get demoralised. So remember to make sure the sport your child plays is the one they're best suited so that they can maximise their own potential.

Researchers have also suggested that exercise can help to ease some common mental illnesses such as anxiety and depression. No one enjoys to be left out of the pack, or be a loner. That’s where sport provides bonding and a sense of belonging. It also challenges them to work in a group, and encourages them to think of others. Kids like to feel part of a team and with sport they can feed off the energy and enthusiasm of their team-mates.

Providing young people with fun activities has proved to be a way to lessen boredom, which can sometimes lead to anti-social behaviour and activity. Studies by the Australian Institute of Criminology show that youth crime can be prevented and the likelihood of re-offending to be reduced by involving them in sport – simply by reducing boredom and decreasing the amount of unsupervised leisure time.

3.2 Benefits of extreme sports

The Rush

Many who participate in extreme sports claim they do it for the rush -- adrenaline rush, that is. Being in a dangerous situation triggers a release of adrenaline as a part of the fight or flight response, naturally intended to keep you out of harm's way. The adrenaline rush is marked by an elevated heart rate, dilated pupils and a change in breathing patterns. This surge of adrenaline is also accompanied by a release of endorphins and dopamine, which are associated with feelings of euphoria and pleasure. Those who participate in extreme sports chase this feeling, which they believe makes the sport more fun, and see this pleasure response as an advantage of participating in the activity.

Fun Plus Fitness

Extreme sports also provide an intense workout. Many extreme sports require you to use your full body, and as a result, can exercise multiple muscle groups at once. Extreme sports also push your body's limits, so they can help you burn calories and lose weight. For example, skateboarding for an hour can burn up to 500 calories while also improving your balance, flexibility, endurance and muscle strength. Because extreme sports are exciting, they are an easy way to get in a workout without feeling the dread of going to the gym.

Getting involved with an extreme sport is a great way to have fun while maintaining a healthy body weight. Regardless of the extreme sport you participate in, with regular riding practices you'll be able to burn excess calories and tone a multitude of muscles. Performing aerial jumps on a BMX bike will allow you to strengthen your bicep and triceps. Riding your snowboard down a mountain slope will target your quadriceps and lower leg muscles. Advantage of extreme sports is that you will be in shape. Exercising has always been great for the human body, and you don’t have to do it in the conventional way. Try something innovative instead and feel that you are alive. Being in a good shape is a sign of a healthy lifestyle based on a healthy diet and lots of exercising, or in this case, extreme sports. Even the psychologists have studied extreme sports, mainly because they were curious why people would engage in dangerous activities, putting their life at risk. As they have found out later, overcoming the fears, people are able to experiment some transformational changes, being more confident and self-aware. Therefore, practicing extreme sports is healthy not only for the body, but also for the soul. In this way people are able to find their limits, trying to overpass them. However, even if these are amazing benefits, there is only a small number of people practicing these sports. Extreme sports photography has a great impact on many people’s lives, and therefore there is an increasing number of individuals who declare that they would like to try extreme sports because they have seen some amazing pictures that made them curious. Looking around, you will realize that the best pictures taken are the ones were the humans are engaged in various extreme sports. Some of these images are quite unearthly, and there is no wonder that they attract many passionate people who are eager to try something new. Some of them want more adrenaline, others want to get over certain fears, while others want to have the adventure of their lives. No matter the reason, they took the best decision, and they dared to get out of the comfort zone.

There isn't anything as bad as killing time doing nothing, when actually time is starting to kill you.

Looking around, you will see that extreme sports practitioners look amazing, and not only in the extreme sports photography, but also in real life. This happens because they have an increased self-esteem and they are well aware about their real value. In some way the world belongs to those who dare something more.

Self Confidence
Studies have shown that extreme sports can boost your mood and your confidence (yes, actual scientists have studied extreme sports. They were Australians, obviously). This is because extreme sports help you overcome your fears *and* show you that you are capable of doing way more than you ever dreamed of. It's hard not to feel on top of the world when you have done something that scares the hell out of you and lived to see another day. You'll be stronger, more confident, and ready to take on a new and even more challenging task.

Transform Yourself
Above all, extreme sports can change you in profound ways. It will change your how outlook on life. You will be able to appreciate life in a much more meaningful way because flirting with death allows you to truly appreciate what it means to be alive. You will be better able to enjoy everything else in your life if you start doing extreme sports.

This transformation also means a transformation in how you see yourself. What you once thought you could never do now seems completely possible. You will discover new things about yourself and your own capability.

Push Your Limits
Because extreme sports can be pretty scary, especially when things don't go quite as planned, they help you overcome your fears. What you once thought was the most terrifying thing imaginable will suddenly seem lame. You will conquer your fears in more ways than one. Once you have overcome a physical fear of say, heights or drowning, you will also overcome more emotional fears such as anxiety about public speaking or fear of rejection.

Pushing yourself to the absolute edge and living to tell the tale gives you the confidence that you can do anything. And with that kind of confidence, you really *will* be able to do anything.

3.4 Different sports and requirements

Rock climbing

Rock climbing is an activity in which participants climb up, down or across natural rock formations or artificial rock walls. The goal is to reach the summit of a formation or the endpoint of a usually pre-defined route without falling. Due to the length and extended

endurance required and because accidents are more likely to happen on descent than ascent, Rock Climbers do not usually climb back down the route. It is very rare for a climber to downclimb, especially on the larger multiple pitches (class III- IV and /or multi-day grades IV-VI climbs). Professional Rock climbing competitions have the objectives of either completing the route in the quickest possible time or attaining the farthest point on an increasingly difficult route. Scrambling, another activity involving the scaling of hills and similar formations, is similar to rock climbing. However, rock climbing is generally differentiated by its sustained use of hands to support the climber's weight as well as to provide balance.

Rock climbing is a physically and mentally demanding sport, one that often tests a climber's strength, endurance, agility and balance along with mental control. It can be a dangerous activity and knowledge of proper climbing techniques and usage of specialised climbing equipment is crucial for the safe completion of routes. Because of the wide range and variety of rock formations around the world, rock climbing has been separated into several different styles and sub-disciplines. A rock climbing wall is an artificial structure comprised of shaped climbing holds that are attached to the surface both randomly and in specific routes. Before starting, a climber is secured with a safety harness to a climbing rope. It is then travels to the second person on the ground called a belayer. The belayer ensures the safety of the climber by controlling the tension, giving or taking as the climber ascends to the top. As climbers improve their climbing technique they usually purchase their own equipment. The basic items to get started include a pair of rock climbing shoes, a climbing harness, a belay device, and achalk bag.

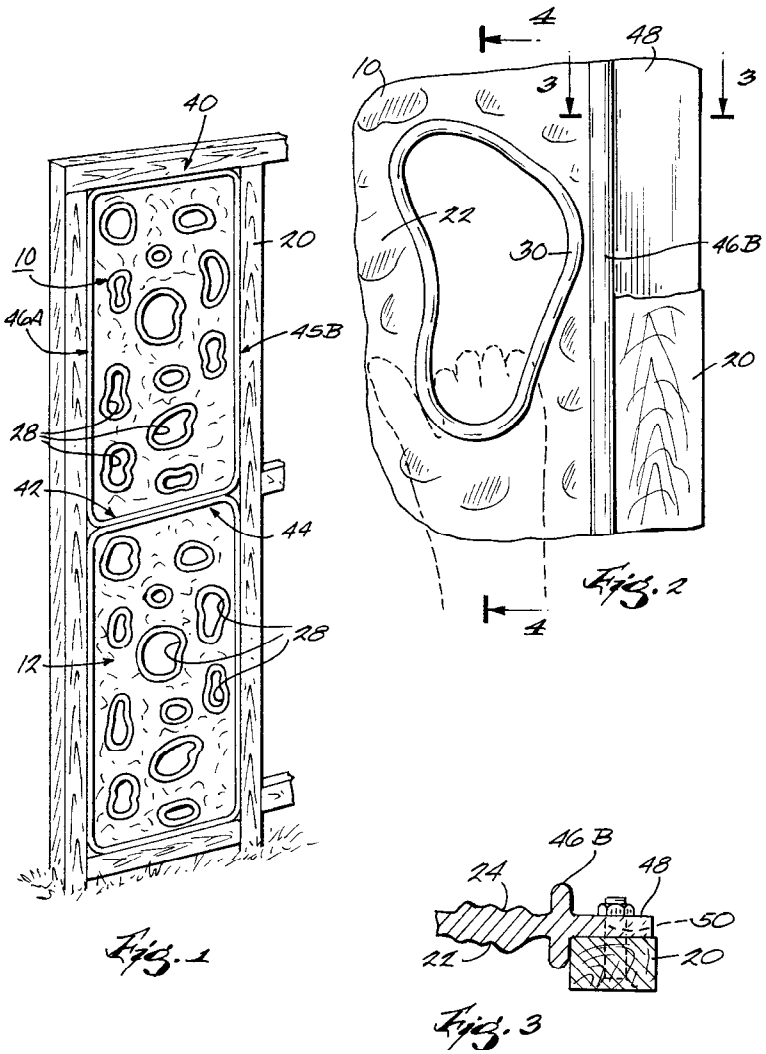


Fig. 1 Fig. 2 Fig. 3

Figure 2.1

Cycling track

Track Cycling is a bicycle racing sport usually held on specially built banked tracks or velodromes (but many events are held at older velodromes where the track banking is relatively shallow) using track bicycles. Sticking to the tracks, country lanes and cycle paths doesn't mean missing out on our county's

great biking opportunities. Road cyclists, tourers and those who just want to take it easy and take in the view are well catered for too. Quiet country roads, byways and a network of cycle paths, there's a lot to see and do. Cycling touring is a great way to discover the county - travelling larger distances and absorbing more of the landscapes and surroundings. Whether you live close by or are on a visit to sample the famous great Yorkshire outdoors, getting on a bike is a safe and swift way of exploring. After such exertion you can be fully justified in stopping for a slab of cake or a pint of locally brewed beer at any one of the many fine cafés or village pubs. If you're planning to cycle a long distance route and prefer to organise your own accommodation, find out how here.

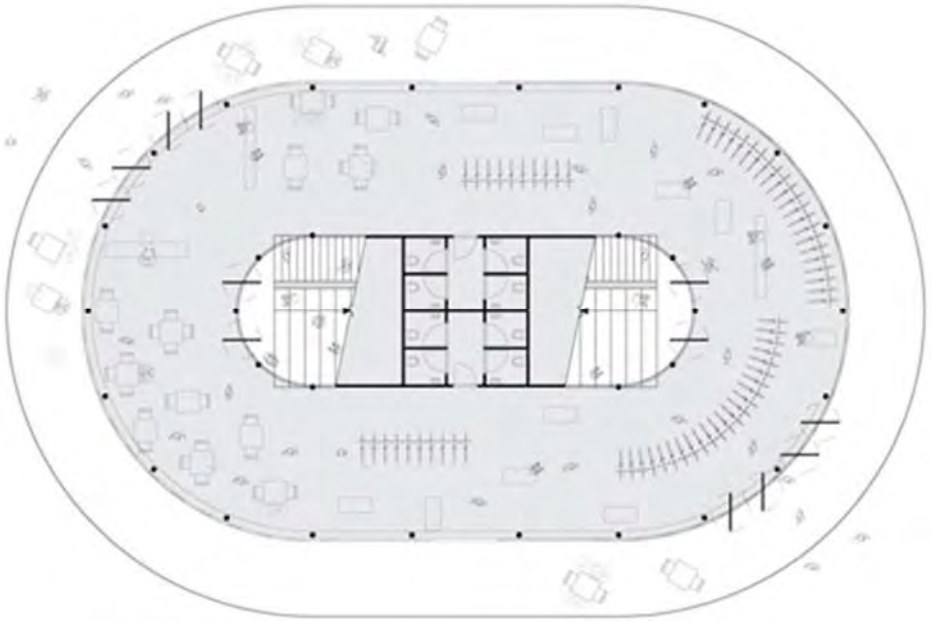


Figure 2.2

A revolution is occurring in street design. New York, arguably the world's bellwether city, has let everyday citizens cycle for transport. They have done that by designating one lane on most Avenues to bicyclists only, with barriers to protect them from traffic.

Now hundreds of cities are rejigging to be bicycle-friendly, while in New York there is a sense that more change is afoot. Many New Yorkers would prefer if their city were more like Copenhagen where 40% of all trips are by bike. But then Copenhagen wants more as well.

If you consider that we are talking about a mode of transport that whips our hearts into shape, funnels many more people down streets than can be funneled in cars, has no pollution, and costs governments and individuals an absolute pittance, you wont ask where it stops, but how close to 100% the bike modal share can possibly go and what we must do to achieve that.

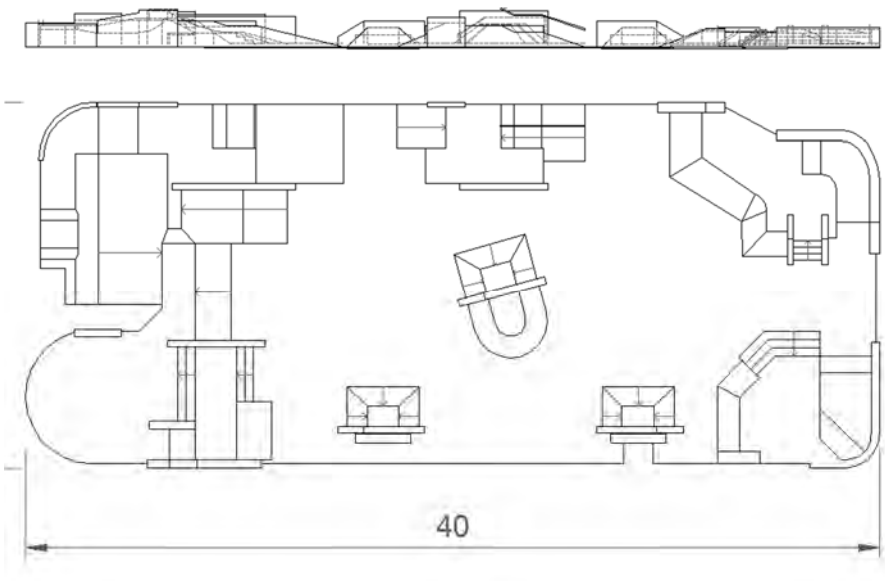
much bike theft could be prevented if only we realised that bikes aren't caked in manure. They may have been in the days of the horse, but these days wheelchairs and children's strollers go from the street into buildings and nobody minds. So why don't we take our bikes inside too?

Imagine the advantages to a parent. He or she would be able to ride from inside their apartment directly to the cold food aisle at the back of the supermarket. With a cargo bike they could take their sleeping baby along for the ride and use their bike as a trolley.

Or what if an office worker's bike accompanied them like a briefcase? They could dock their bike at their office desk, then their home office desk, then the table at the café where they like to check emails. Their pannier bag could open out like part of a portable office.

Skate boarding

Skateboarding is an action sport which involves riding and performing tricks using a skateboard. Skateboarding can also be considered a recreational activity, an art form, a job, or a method of transportation. Skateboarding has been shaped and influenced by many skateboarders throughout the years. With the evolution of skateparks and ramp skating, the skateboard began to change. Early skate tricks had consisted mainly of two-dimensional freestyle manoeuvres like riding on only two wheels ("wheelie" or "manual"), spinning only on the back wheels (a "pivot"), high jumping over a bar and landing on the board again, also known as a "hippie jump", long jumping from one board to another, (often over small barrels or fearless teenagers), or slalom. Another popular trick was the Bertlemann slide, named after Larry Bertelemann's surfing manoeuvres.



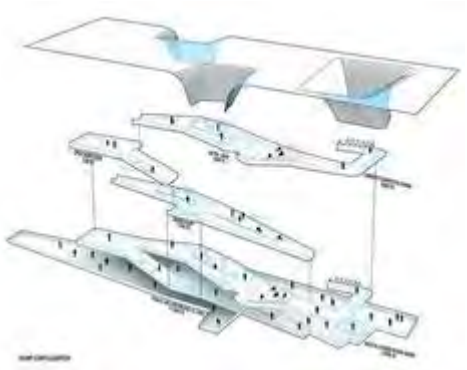


Figure 2.3

In 1976, skateboarding was transformed by the invention of the ollie by Alan "Ollie" Gelfand. It remained largely a unique Florida trick until the summer of 1978, when Gelfand made his first visit to California. Gelfand and his revolutionary maneuvers caught the attention of the West Coast skaters and the media where it began to spread worldwide. The ollie was adapted to flat ground by Rodney Mullen in 1982. Mullen also invented the "Magic Flip," which was later renamed the kickflip, as well as many other tricks including, the 360 kickflip, which is a 360 pop shove-it and a kickflip in the same motion. The flat ground ollie allowed skateboarders to perform tricks in mid-air without any more equipment than the skateboard itself, it has formed the basis of many street skating tricks.

Sports hall (volleyball, basketball, badminton)

Basketball Basketball is a team sport. Two teams of five players each try to score by shooting a ball through a hoop elevated 10 feet above the ground. The game is played on a rectangular floor called the court, and there is a hoop at each end. The court is divided into two main sections by the mid-court line. If the offensive team puts the ball into play behind the mid-court line, it has ten seconds to get the ball over the mid-court line. If it doesn't, then the defense gets the ball. Once the offensive team gets the ball over the mid-court line, it can no longer have possession of the ball in the area in back of the line. If it does, the defense is awarded the ball.

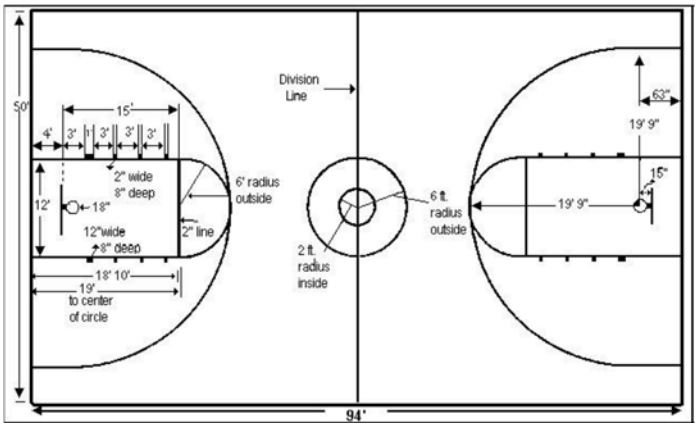


Figure 2.4

Volleyball

The volleyball court specifications require the court to be 18 meters (60 feet) long and 9 meters (30 feet) wide.
The volleyball court has a centerline that divides each teams side into a 9 by 9 meter area of court space.The volleyball net is one meter wide and is placed in the center of the court running sideline to sideline.
For men's volleyball competition, the height of the net measures 2.43 meters (about 7 feet, 11 5/8 inches) from the court ground at the center.
For women's volleyball competition, the net is placed at the height of 2.24 meters (about 7 feet, 4 ¼ inches).

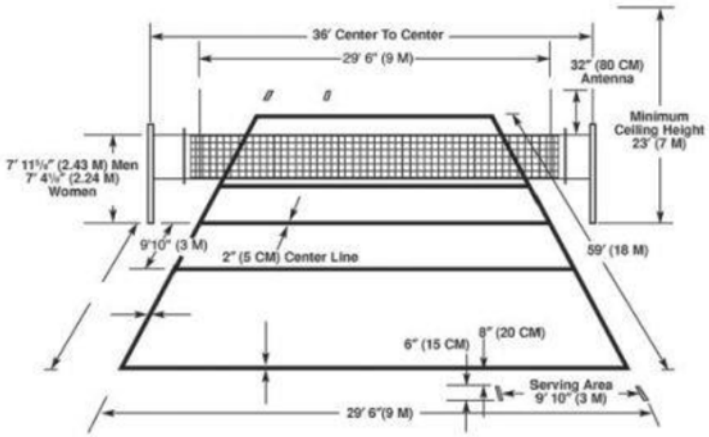
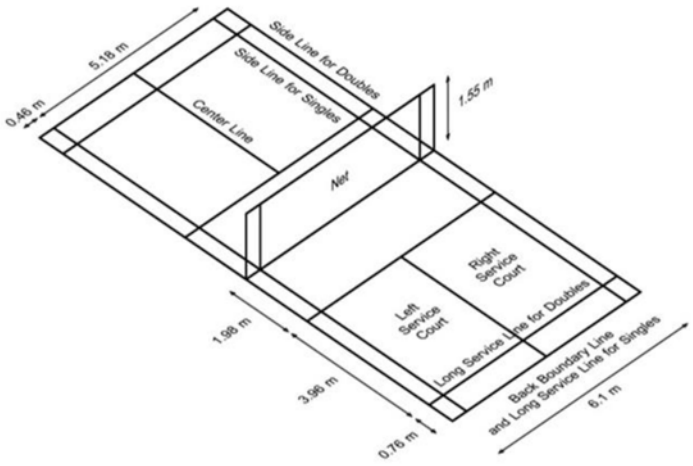


Figure 2.5

BADMINTON

The Badminton Court shall be a rectangle laid out with lines of 40mm wide, preferably in white or yellow color. The Badminton Court Dimensions are of 13.4m in length and 6.1m in width. The post shall be 1.55m in height from the surface of the court and shall remain vertical when the net is strained. The net shall be made of fine cord of dark color and even thickness with a mesh of not less than 15mm and not more than 20mm. The net shall be 760mm in depth and at least 6.1m wide.



The top of the net shall be edged with a 75mm white cloth. The top of the net from the surface of the court shall be 1.524m (5ft) at the centre of the court and 1.55m (5ft 1in) over the side lines for doubles. There shall be no gaps between the ends of the net and the posts. If necessary, the full depth of the net should be tied at the ends.

Figure 2.6

Swimming pool

A swimming pool, swimming bath, wading pool, or paddling pool is an artificial container filled with water intended for swimming or other water-based recreation. Such artificial pools can be built either above or in-ground, and be constructed from materials such as concrete (also known as gunite), metal, plastic or fiberglass. They can be decorative or custom shape and size, or they may be of a standard size, the largest of which is the Olympic-size swimming pool.

Many health clubs, fitness centers and private clubs, such as the YMCA, have public pools used mostly for exercise or recreation. Many hotels have pools available for their guests to use at their leisure. Educational facilities such as schools and universities occasionally have pools for physical education classes, recreational activities, leisure or competitive athletics such as swimming teams. Hot tubs and spasare pools filled with hot water, used for relaxation or hydrotherapy, and are common in homes, hotels, clubs and massage parlors. Special swimming pools are also used for diving and other water sports,

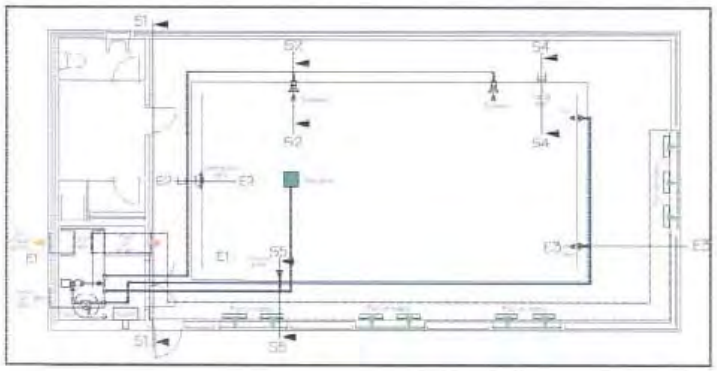


Figure 2.7

as well as for the training of lifeguards and astronauts.

Track and field

Track and field is a sport which combines various athletic contests based on the skills of running, jumping, and throwing. The name is derived from the sport's typical venue: a stadium with an oval running track enclosing a grass field where the throwing and jumping events take place.

The running events, which include sprints, middle and long-distance events, and hurdling, are won by the athlete with the fastest time. The jumping and throwing events are won by the athlete who achieves the greatest distance or height. Regular jumping events include long jump, triple jump, high jump and pole vault, while the most common throwing events are shot put, javelin, discus and hammer. There are also "combined events", such as heptathlon and decathlon, in which athletes compete in a number of the above events. Most track and field events are individual sports with a single victor, but a number are relay races.

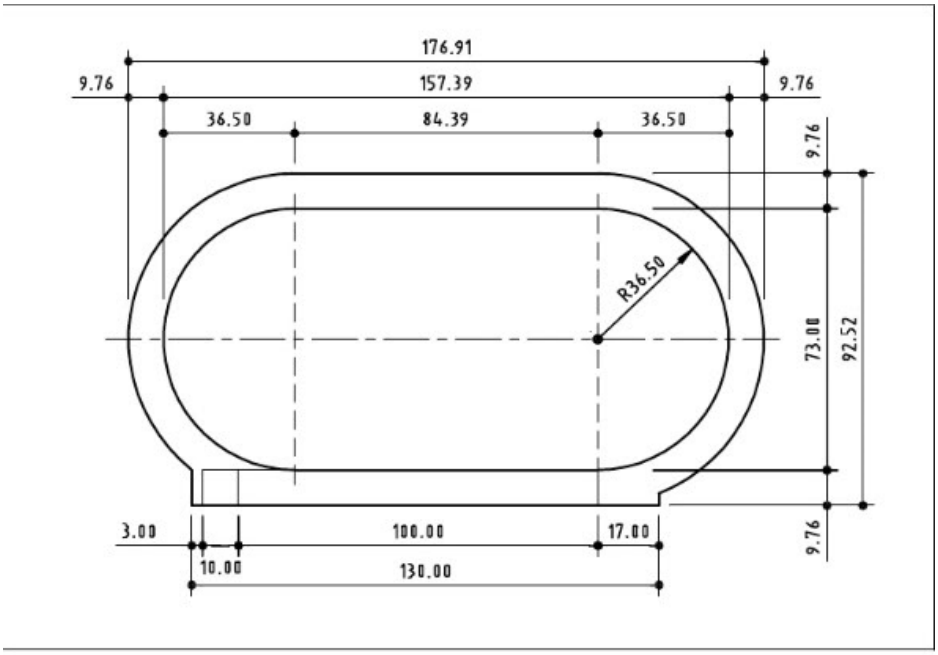


Figure 1.2.3a - Shape and dimensions of the 400m Standard Track (Radius 36.50m)
(Dimensions in m)

Figure 2.8

Events are almost exclusively divided by gender, although both the men's and women's competitions are usually held at the same venue.

Track and field is categorized under the umbrella sport of athletics, which also includes road running, cross country running, and race. At the international level, the two most prestigious international track and field competitions are athletics competition at the Olympic Games and the IAAF World Championships in Athletics. The International Association of Athletics Federations is the international.

When considering the construction of a playing field and/or track much must be planned out ahead of time to create a well functional and ascetical area. The more experience a contractor and or consultant has in this area is very beneficial. Make sure to read the guidelines and rules (IAAF, NCAA, etc.) carefully that your track and or field will be governed by, so your facility will

be up to date and compliant when an athletic event is held. This will help you begin with the basic planning for a facility. Another thing you must consider are all aspects of the athletic sport(s) being played in this area and how the and where the spectators will be involved in the event.

Gymnasium

The gymnasium in Ancient Greece functioned as a training facility for competitors in public games. It was also a place for socializing and engaging in intellectual pursuits. The name comes from the Ancient Greek term *gymnós* meaning "naked".

Athletes competed nude, a practice said to encourage aesthetic appreciation of the male body and a tribute to the gods. Gymnasia and palestrae (wrestling schools) were under the protection and patronage of Heracles, Hermes and, in Athens, Theseus. Gym workouts are one of the best ways to turn healthy and fit, and increase your energy levels. A good workout fights obesity and heart problems by improving blood circulation to your heart. It also does the same for your brain, making you mentally fit and reducing the degeneration of your central nervous system, which controls coordination. It also lowers the chances of a stroke. Gym workouts can scale your energy levels and improve blood circulation to your heart. Your self-esteem is often linked to your appearance. Gym workouts can help you lose weight and ensure better posture, revealing a fitter, healthier version of you. In turn, this transformation can boost your self-esteem and confidence to no end.Gym workouts are also known to lower stress levels, as exercise releases increased amounts of endorphins, an endogenous (internal) opiate, and calming hormones like serotonin and dopamine, which regulate anxiety levels. Another major advantage of gym workouts is that the gym instructor puts together the appropriate fitness plan for you, tailored towards your specific needs. This ensures that you get the maximum benefits from your workouts.

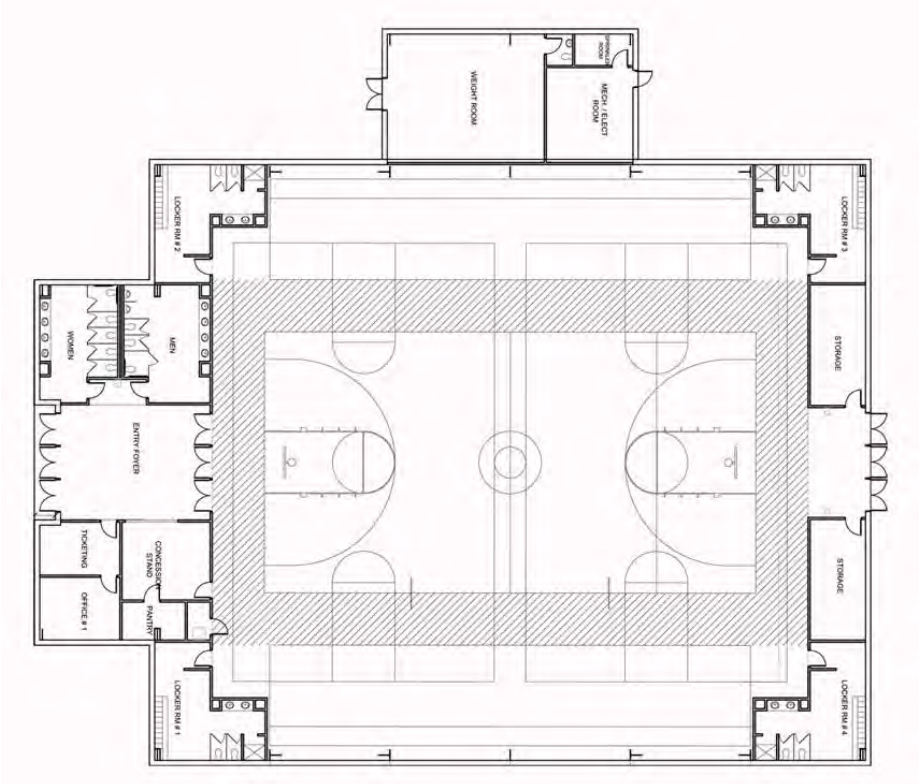


Figure 2.9

Indoor games

For thousands of years people have invented Indoor games and sports to amuse themselves when confined within a house or other building. Often these are played in social or family situations, or when darkness or bad weather prevent people from moving outside.

Such amusements have been developed throughout the world. Others require a great deal of skill on the part of the players.

Perhaps the most famous indoor game is basketball, which was created as an active sport to be played in the winter time.

There are different types of indoor games. They are: Card games, Board games table top games. Etc. Indoor sports complexes are springing up around the country. These complexes often provide a Turf Field that allows a wide variety of typically outdoor sports to be played indoors. These turf fields are large and has a grassy texture to it without the maintenance required to keep it green and plush. Many sports are being played on this type of service, such as soccer, baseball, flag football, softball, lacrosse, rugby, and many others.

Chapter 4

Contextual analysis

4.1 Social Context

Bhatiari is under sitakunda upazila. The legends of the area state the sage Bhargava created a pond (*kunda*) for Sita to bathe in when her husband LordRamchandra visited during his exile in the forests. Sitakunda derived its name from this incident.

Sitakunda has been occupied by humans since the Neolithic era; tools associated with the prehistoric Assam group have been found throughout the area. In 1886, shouldered celts manufactured from petrified wood were discovered, as reported by Indian archaeologist Rakhaldas Bandyopadhyay in his book *Banglar Itihas*, or *History of Bengal*, (volume I, 1914). In 1917, British mineralogist Dr. J. Coggin Brown uncovered more prehistoric celts. Large quantities of pebbles have also been found, but archaeologists have not determined whether they were used in the construction of prehistoric tools.

During the 6th and 7th centuries CE, the Chittagong region was ruled by the Kingdom of Arakan. In the next century, it was briefly ruled by Dharmapala (reign: 770–810) of the Pala Empire. The area was conquered in 1340 by SultanFakhruddin Mubarak Shah (reign: 1338–1349) of Sonargaon, who founded the first dynasty of the Sultanate of Bengal. When Sultan Ghiyasuddin Mahmud Shah (reign: 1533–1538) of the last dynasty of the Sultanate of Bengal was defeated in 1538 by Sher Shah Suri of the Sur Dynasty, the Arakanese captured the region again. Batsauphyu (reign: 1459–1482) of theMrauk U dynasty took advantage of the weakness of Sultan Barbak Shah of Bengal to lead the invasion. In this period, Keyakchu (or *Chandrajyoti*), a prince of Arakan, established a monastery in Sitakunda. Between 1538 and 1666, Portuguese privateers (known as *Firinghis* or *Harmads*) made inroads into Chittagong and ruled the region in alliance withArakanese pirates. During those 128 years, the eastern coast of Bengal became a home to pirates of Portuguese and Arakanese origins. For a brief period in 1550, it was taken over by Pagan invaders. In 1666, Mughal commander Bujurg Umed Khan conquered the area.

Along with the rest of Bengal, Sitakunda came under the rule of the British East India Company after the company's defeat of the Nawab of Bengal at the Battle of Plassey in 1757. Rapid growth in the Bengali population since then resulted in an exodus of non-Bengali people from Sitakunda and its vicinity to the Chittagong Hill Tracts. During the *Ardhodaya Yog*movement, a part of the Swadeshi Indian independence movement, the governance of Sitakunda was briefly in the hands of Indian nationalists when, in February 1908, they took over the central government in Kolkata. In 1910, Indian Petroleum Prospecting Company drilled here for hydrocarbon exploration, the first such activity in East Bengal. In 1914, the first onshore wildcat well in Bangladesh was drilled at Sitakunda anticline to a depth of 762 metres (2,500 ft). By 1914, however, all four of the wells drilled had proven to be failures.

After the Indian Rebellion of 1857, the British colonial government (British Raj) replaced the governance of the East India Company. When the British withdrew in 1947, after creating the independent states of India and Pakistan, Sitakunda became a part of East Pakistan. The potential for a ship breaking industry first appeared in 1964 when Chittagong Steel House started scrapping *MD Alpince*, a 20,000 metric tons (19,684 long tons) Greek ship that had been accidentally beached near Fouzdarhat by a tidal bore four years earlier. During the Bangladesh Liberation War of 1971, Sitakunda was part of Sector 1, led by Ziaur Rahman and Major Rafiqul Islam of the Mukti Bahini, the forces fighting for the independence of Bangladesh. The ship breaking industry began in earnest in 1974 when Karnafully Metal Works started scrapping *Al Abbas*, a Pakistani ship damaged in 1971, and flourished in the 1980s. As of 2007, Sitakunda had overtaken the ship breaking industries of India and Pakistan to become the largest in the world.

Economy of sitakunda is very good. The ship breaking industry in Sitakunda has surpassed similar industries in India and Pakistan to become the largest in the world. As of August 2007, over 1,500,000 metric tons (1,476,310 long tons) of iron had been produced from the scrapping of about 20 ships in the 19 functional ship yards scattered over 8 square kilometres (3 sq mi) along the coast of Sitakunda 8–10 kilometres (5–6 mi) from Chittagong, near Fouzderhat. Local re-rolling mills, as well as similar mills, process the scrap iron. Bangladesh, with no local metal ore mining industry of its own, is dependent on ship-breaking for its domestic steel requirements; the re-rolling mills alone substitute for import of about 1,200,000 metric tons (1,181,048 long tons) of billets and other raw materials. There are 70 companies registered as ship breakers in Chittagong, employing 2,000 regular and 25,000 semi-skilled and unskilled workers. Organized under the Bangladesh Ship Breakers Association, (BSBA), these include companies within large local conglomerates that sought ISO certificates.

The industry has come under threat, both from a decline in the number of ships scrapped annually – down from 70–80 to about 20 – and because of environmental and work safety concerns. There have been complaints that journalists andhuman rights activists are being barred from the ship breaking yards. The ship breaking industry is purportedly damaging the local ecology as well, taking a toll on the fish population and soil quality. Safety standards in the industry are low; between 1995 and 2005, 150 workers were killed and 576 were maimed or injured. The main causes of death were fire or explosion, suffocation and inhaling CO_2. These old ships also contain hazardous substances like asbestos, lead paint, heavy metals and PCBs. The workers are paid US$1.75 a day and have little access to medical treatment. Among the workers, 41% of are aged between 18 and 22 years, and many are reported to be as young as 10 years of age. There have also been allegations of large quantities of steel and non-ferrous items, such as bronze, aluminum, copper, and bronze-amalgam recovered from ship breaking being smuggled out of Bangladesh. There also are reports of pirates targeting tugboats pulling ships in.

Figure 4.1

Employment of local people is low in the industrial facilities. The main occupations of the local people by industry are service (28.76%), commerce (21.53%), and agriculture (24.12%). Out of 12,140.83 hectares (30,000.64 acres) of cultivable land 25.46% yield a single crop, 57.95% yield double and 16.59% a treble crop annually. Bean, melon, rubber and betel leaf are the main agricultural exports. Fishing has traditionally been an industry restricted to low caste Hindus belonging to the fisher class, although since the last decades of the 20th century an increasing number of Muslims have joined the sector. Due to the introduction of engine-powered boats and gill nets, there was a rise in fish catches between the 1970s and 1990s, especially in the major fishing season (mid-July to mid-November). Over-fishing, however, has depleted the fish population and some fish species are facing extinction in the area, leading to seasonal food insecurity (February to April). According to a 2001 survey, 4,000 people in Sitakunda were engaged in wild shrimp fry collection, harvesting an average of five-and-a-half million fries a year.

Sitakunda has a cement factory, 12 jute mills, 6 textile mills, 10 re-rolling mills, and 79 functional and defunct shipyards. Two of the operational jute mills are run by the Bangladesh Jute Mills Corporation, and one has been sold to a private sector company. To protest against privatization, workers of Hafiz Jute Mill, Gul Ahmed Jute Mill, MM Jute Mill and RR Jute Mill blocked the Dhaka–Chittagong Highway for seven hours in September 2007. As early as 1953, Sitakunda was described as the location for one of only five poultry farms in East Pakistan, along with Tejgaon (Dhaka), Narayanganj (Dhaka), Jamalpur (Bogra), andSylhet. Some mining for sand from agricultural lands is carried out along the eastern side of the Dhaka–Chittagong road. Operators of local brick kilns are engaged in illegal hill cutting, a practice that was responsible along with heavy rainfall for the 2007 Chittagong mudslide. The rural poor are supported byGrameen Bank and NGOs such as CARE, BRAC and ASA.

The people of the city are diverse and multi-ethnic, and the native Bengali and Tibeto-Burman populations have had significant influence from Arab, Afghan, and Mughal traders and settlers, all of whom had travelled in the city after arriving on its shores many hundreds of years ago. The descendents of Portuguese settlers, known as the Firingi, also continue to live in Chittagong, as Catholic Christians, in the old Portuguese enclave of Paterghatta.

Figure 4.2

Chittagong is also home to several of the most renowned universities of Bangladesh, Chittagong University of Engineering and Technology (CUET), the International Islamic University Chittagong, the Chittagong University, established in 1966, the Chittagong College being notable examples. It also contains many madrasas (Islamic educational centres) within its borders.

4.1 Physical Context:

Bhatiari is linked with sitakunda. Environment of sitakunda and bhatiri of sitakunda is same. Sitakunda Upazila occupies an area of 483.97 square kilometres which includes 61.61 square kilometres (23.79 sq mi) of forest. It is bordered by Mirsharai to the north, Pahartali to the south, Fatickchhari, Hathazari and Panchlaish to the east, and the Sandwip Channel in the Bay of Bengal to the west. The Sitakunda range is a 32-kilometre (20 mi) long ridge in the center of the upazila, which reaches an altitude of 352 metres (1,155 ft) above sea level at Chandranath or Sitakunda peak, the highest peak in Chittagong District. Part of Sitakunda is covered by the low hill ranges, while the rest is in the Bengal flood plain To the north, Rajbari Tila at 274 metres (899 ft) and Sajidhala at 244 metres (801 ft) are the highest peaks in this range, which drops abruptly to a height of less than 92 metres (302 ft) in the vicinity of Chittagong City to the south. About 5 kilometers (3 mi) north of Sitakunda Town is the Labanakhya saltwater hot spring, which has been proposed as a source of geothermal energy. There are two waterfalls in

the hills: *Sahasradhara* (thousand streams) and *Suptadhara* (hidden stream). Both have been identified as sites requiring special attention for protection and preservation by the National Heritage Foundation of Bangladesh.

An area prone to cyclones and storm surges, Sitakunda was affected by cyclones in 1960, 1963, 1970, 1988, 1991, 1994 and 1997; the cyclones of 29 May 1963, 12 November 1970, 29 April 1991 made landfall. The intra-deltaic coastline is very close to the tectonic interface of the Indian and Burmese plates, as well as the active Andaman–Nicobar fault system, and is often capable of generatingtsunamis. Cyclone preparedness measures are inadequate for the 200,000 residents of Sitakunda who were estimated to be living in high risk areas after the 1991 cyclone. For every 5,000 people, Sitakunda has only one cyclone shelter, each of which is capable of holding 50 to 60 people. Syedpur Union has eleven, Muradpur eight, Baraiyadhala seven, and Kumira five. Sitakunda municipality, Barabkunda, Bhatiary and Bansbaria have four shelters each. Salimpur has three and Sonaichhari Union has two shelters.

The Chittagong Coastal Forest Department developed the river bars (*char* in Bengali) on the bank of the Sonaichhari channel adjacent to the Sitakunda coast into a kilometer-wide coastal mangrove plantation during 1989–90, to reduce the impact of cyclones. Although the site was initially unstable, rapid sediment accretion stabilised the soil, providing the coast with some protection. The cyclone of 1990 smashed about 25% of a 2-kilometre (1 mi) sea-wall built using two-ton steel-reinforced concrete blocks, some of which were carried up to 100 metres (328 ft) inland. In contrast, a mangrove plantation just south of the sea-wall sustained damage to less than 1% of its trees, most of which recovered within six months. The planted mangrove forest that helped Sitakunda to escape as one the least damaged areas during the devastating 1991 Bangladesh cyclone is under threat from illegal tree-cutting by ship-breakers in the area.

The most important thing that happens is landslide. Indiscriminate deforestation, hill cutting and unplanned human settlements are causing many landslides in Chittagong. Most landslides in the area are reported after torrential rains. Thousands of people remain stranded in low-lying areas and many communities in the Chittagong Hill Tracts are still unreachable due to the landslides. Many areas are cut off from the rest of the country as roads and railway tracks are unusable due to the floods and landslides. Displaced people in the affected districts of Cox's Bazar, Chittagong, Bandarban, Feni, Sylhet, Habiganj and Sunomganj are residing on road sides, schools and colleges, and need shelter, food, clean water and medical care. The risk of certain water-borne diseases is high. The rail authorities have restarted passenger traffic in and out of the Chittagong region after restoring one of the tracks on the broken rail bridge in the Bhatiari

area. Authorities said that rail freight traffic will remain suspended in the region until the line is repaired, which will take another 15 days. It may take several Information Bulletin Bangladesh: Floods and Landslides days, or even weeks, before all of the debris is cleared and streets are fully reopened. Telecommunication and utility disruptions will probably continue in hard-hit areas for at least several days until crews are able to repair the lines. Over the gighway road there is ship breaking yard which is very harmful for the environment. Over twenty ship-breaking yards dot the 16 miles of coastline. It is an industrial wasteland of epic proportions, where thousands of workers are forced to scratch their meager existence out of these hulking steel ruins, working with rudimentary protection, risking injury and illness, poisoned by toxic fumes and exposure to asbestos and other hazardous materials.

. Environmental groups such as Greenpeace have tried to raise awareness of the threat that these ship-breaking yards pose to both the people employed in them and to the environment. The labourers lack basic equipment. When a new ship arrives, there are containers, chambers and tanks, which contain oil, petroleum and poisonous gases. One method used for checking the level of danger in these parts of the ship is to lower down chickens in a string to check whether there are dangerous gases. If the chickens survive, the first workers will enter to clean for oil, petroleum and other flammable substances. The flammable substances are often burned off before the cutters enter to rip the ship apart. Gas explosions is a common phenomenon.

Chapter 5

Case Studies

Case study 1

Location: Artashat, Armenia
Architect: Aram Shahoyan, Lusine Baghdasaryan
University: Yerevan State University of Architecture and Construction
Adviser: Emilya Sargsyan
Year: 2014

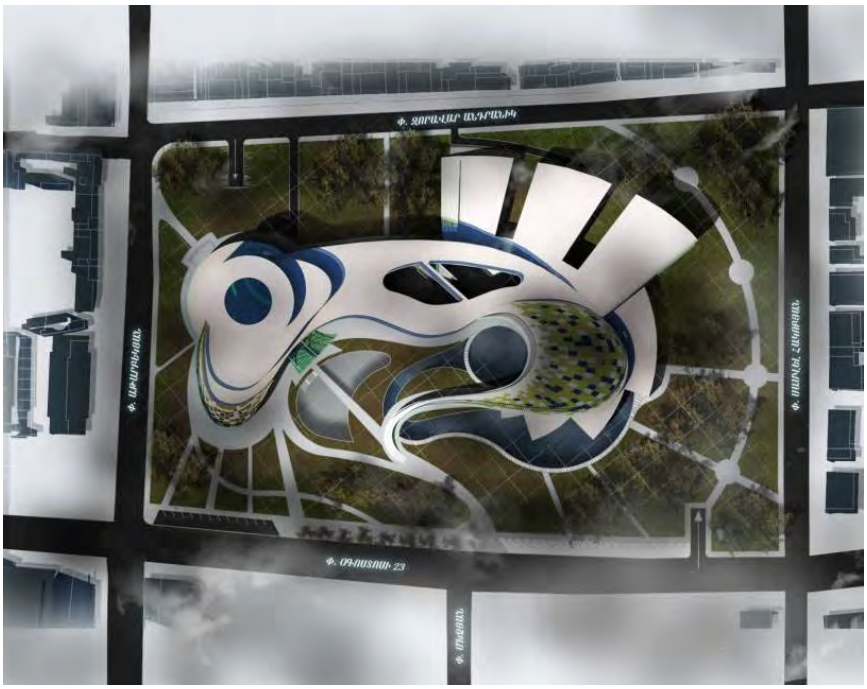


Figure 5.1

I chose the theme of the project, because I'm a citizen of the city Artashat and know the major problems of the city, of which the most important are the residents with great scarcity of jobs and the development of young people.

While for the project area selection, were taken into consideration these factors benefits, such as the proximity of the stadium of the city, and the secondary school № 3, the large surface area in poor

Figure 5.2

Figure 5.3 condition not used, the sight of Mount Ararat as background, now hidden by some existing buildings.

Another important aspect is that the main road linking the capital Yerevan Artashat. The project pays attention to the climate which is quite dry with hot summers and cold winters. To solve this problem, in most of the area will be planted with trees and shrubs, and there is also a small pond near the building.

This will mitigate climate city and together with the solution of this problem, including green roofs, which are designed in particular in the field of dance, will protect the interior of the building from the summer heat and winter cold. The center is made up of academic fields, cultural and sporting activities.

The sector Dance and Sport are close but far away from the education department, so departments noisy are separate from silent building. The general view of the building looks like a specific type of cloud called lenticular clouds, due to which the educational department of the palace received in the form of a terrace.

The Education Department has four floors, each floor has a height of 4.5 meters, which gives the total height of 18 meters. As a result the picturesque view of Mount Ararat might be closed, however, due to the shape terrace, the visual height of the building department seems to be lower.

In the project area is chosen the position of the building to give the effect of perspective. The roof of the dance department is designed in the form of a ramp, which is directed by the sign of the ground to the roof of the passage overgound that connects all the buildings department together. It will also serve as an observation deck.

Figure 5.4

In the middle of the department of education has also been designed as a flight of winding main communication system. The number of ramps and lifts is based on the fact that the Cener is designed for disabled. There is also a two-storey exhibition hall located in the basement, so that the sun's rays do not damage the images displayed.

However, it has also a source of natural lighting and ventilation. The project includes the following sections, cultural and sporting academics: Chess, Computer, skills, foreign languages, Library, sculpture and painting, gallery, dance, wrestling, volleyball and basketball courts, swimming pool.

Case study 2

Hangzhou Civic Sports Center BLUA

Adjacent to the Qian Jiang River, the site of the Hangzhou Civic Sports Center is a connector between the natural and urban life of the city. BLUA designed this center based on the idea of an urban plaza while also wanting to create an icon for the lack of large-scale commercial facilities and distribution of leisure spaces. Inspired by mountains and their connection with sports, as well as the fact that the Hangzhou government carries out mass sports activities to promote national fitness, a popular favorite being mountain climbing, the concept for this design has granted it the name “Sports Hill”.

Figure 5.5

The podium and the 42 meter tower follow a stacked design in order to contrast the complexity of the 70 meter tower. The roof is interconnected to make a continuous, differentiated sports landscape with cascading sports fields and pathways. Internally the spaces are arranged according to their purpose, and whether they are “active” spaces or “inactive”. Sports activities are located on the lower part of the tower and the podium where activities such as basketball, volleyball, badminton, and tennis can be found. The top of the tower is deemed as a relatively “inactive” area and is filled with offices, accessories, and the VIP Club. The steel frame of the podium becomes the major structural piece for the curtain wall and also houses the circulation element for the façade.

The sunken plaza is 1.5 meters underground, which connects with the entry square by folding

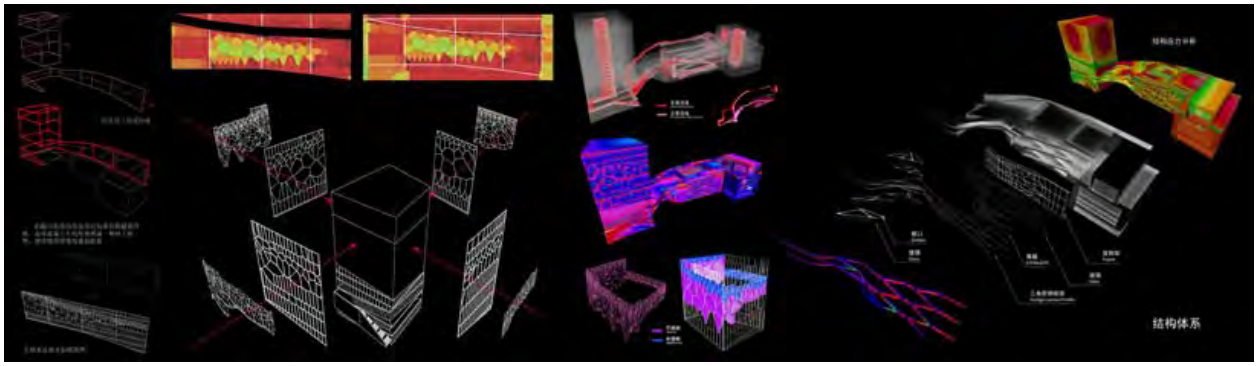


Figure 5.6

shaped steps, becoming a big open space designed as a microclimate ecological environment. The cantilevered plaza roof and canopies offer the sunken area shade while the plant-life and water features cool the air underneath through natural convection and evaporative cooling. This area contains public amenities such as gift shops, bookstores, and cafés, and also interacts with the swimming pool behind the curtain wall on the first floor of the complex, creating a lively water environment. All the swimming pools are contained within a grand open space and can be entered from the south façade or from the civic square.

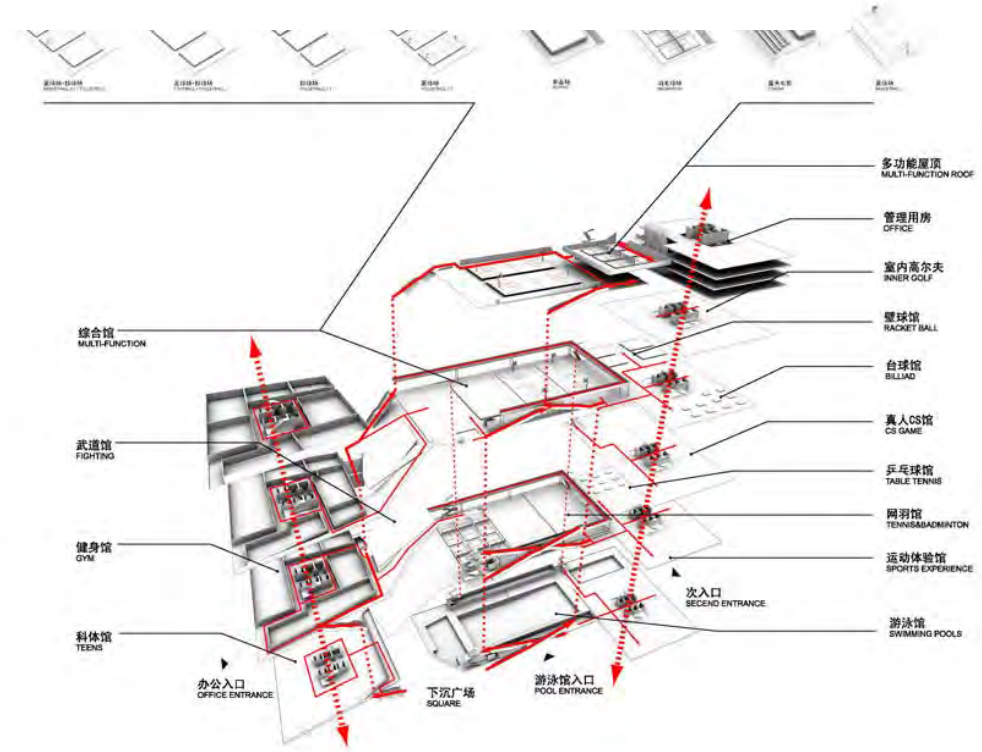


Figure 5.7

Figure 5.8

The main tower and podium is wrapped with three folding pieces covered with cellular aluminum. The twisted-folding shape has a dynamic trend of an upward spiral that also determines the density of the skin texture. Faceted crystalline geometry with crystal patterns in 3D cold lamination film, ETFE membrane, and honeycomb glass structure, heighten the sense of irresolution between flatness and depth as well as correlate graphic or pattern effects with mass inflections. The design features massive membrane bubble windows orientated to allow views out to all angles of the city. The perforated stainless steel panel on the wall strengthens the crystal shape, making this building an iconic attraction landmark for the city.

Case study-3

Neighbourhood Sports Centre Kiel / UR architects

Architects: UR architects
Location: August Leyweg 2, 2020 Antwerp, Belgium
Architects In Charge: Nikolaas Vande Keere, Regis Verplaetse, Ana Pontinha
Area: 2024.0 sqm
From the architect. The site has a strategic position in the socially

Figure 5.9

Figure 5.10

mixed Kiel district of Antwerp. This low-budget sports centre with a sports gear rental depot fulfills a social role in the neighborhood, edging the gateway to the school campus .
The building looks out to all sides. The traditional sports hall typology is inverted: large sports hall, dancing hall and rental depot face outward, interconnected by a service area. The simple, industrial architecture reflects the modernism of the surrounding buildings. The roofscape is conceived as a fifth facade visible from the nearby housing blocks by architect Renaat Braem.
Sustainable and energy saving measures:
- Translucent facades allow playing by daylight, gradually replaced by artificial lighting (sensors).
- Floor heating in the large hall (payback period 6 years vs. local air heating).
- Air treatment system D (with heat recuperation) and adiabatic cooling with rain water in summer. Extra summer cooling through the floor heating system.
- Rain water use for showers with UV-filter. Only 1 year payback period.
- Extensive green roof on the service area for rain water storage and thermal inertia, light gray FPO-roofing on the halls for less warming-up
The ephemeral halls with facades in translucent multi-layered polycarbonate, white steel structure and colored floors contrast with the chiaroscuro service area in concrete and black laminate. The facades communicate the play of shadows and combine diffused daylight with good insulation and air tightness, resulting in low energy use. Sun and outdoor climate form the backdrop of sports and play. At night the building becomes a glowing beacon in the neighborhood. The terrain will become an ecological flowering prairie dotted with trees and a grass island for informal play

Chapter 6

Program and development:

Entrance **13,000 sq. ft.**

Main lobby

Information lobby

Individual floor lobby

Administration **5000 sq.ft.**

Director's room+washroom

Conference/Meeting room + washroom

Admin lobby

Waiting room

Service **7000 sq.ft.**

Service lobby

Maintenance Staff room

Security room

Mechanical

Electrical room

Generator

Storage

Loading/Unloading

Food court 6000 sq.ft.

Eating zone

Food storage

Kitchen/Food preparation

Service counter

Washing area

Trash area

Sports facilities

Multi sports Court 35627 sq.ft.

Sports hall

Tennis court

Basketball court

Volleyball courts

Rock climbing wall 1500 sq.ft.

Skateboarding area 5000 sq.ft.

Running Track **3000 sq.ft.**

Cycling Track area **According to the project**

Gymnasium **6000 sq.ft.**

Exercise room

Locker room

Washrooms

Store room

Swimming facilities **20000 sq.ft.**

Swimming pool

Sauna and massage room

Changing Room

Locker Room

Maintenance

Indoor Games **18598 sq.ft.**

Bowling zone

- Pool zone
- Carom zone
- Table tennis
- Table soccer

-Card games

-Chess

Souvenir shop **1200 sq.ft.**

Souvenir shop

Retail sports shop

Car parking **42890 sq.ft.**

Total **161815 sq.ft.**

Chapter 07
Design development phase and final design.

Introduction
After site analysis, program analysis, the design was initiated in a parallel. The design was developed after considering site and site surroundings.
The main concept was exploring adventure sports and implementing in the design. Considering the contour and the lake the design was developed and the form was derived in different stages. In this chapter the methods and process of design implementations is described below.

Initial Ideas

The main idea of the design was exploring the site and nature and giving a break of the urban life. People have become mechanical. They are scared of getting out in a open space and playing and exploring themselves. Self development is the main idea here. The project and the facility will make people aware of nature and themselves. The site considerations were the first thing I did in the design. The form derivation also came from the site and site surroundings. First visit of the site gave me some initial ideas which I complimented on the design later. I studied some adventure sports which can be only complimented in the design later. I sketched some spaces which has a relation of indoor and outdoor spaces with outdoor sports. The main intension was not to touch the contour at all and to place the structure in its surroundings. When the question came what,why for whom, the answers were clears analyzing the society, context and culture.
The diagrams below is described that people live in a introvert society. People are more depended on social media and computers rather than connecting with each other face to face. The initial concept was to create a facility where people can connect with each other and know or share their interests more deeply. The adventure, exploration comes with these similar types of sports.

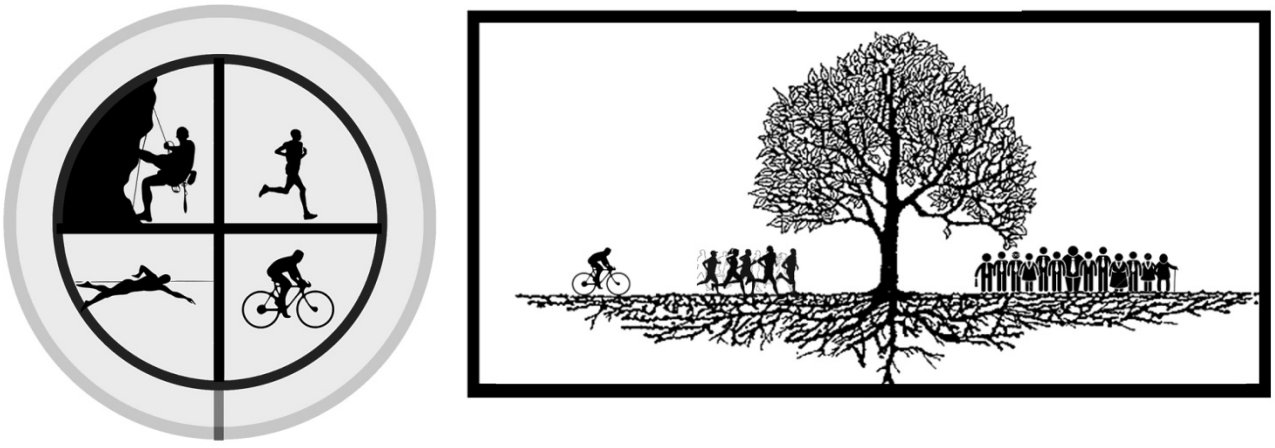
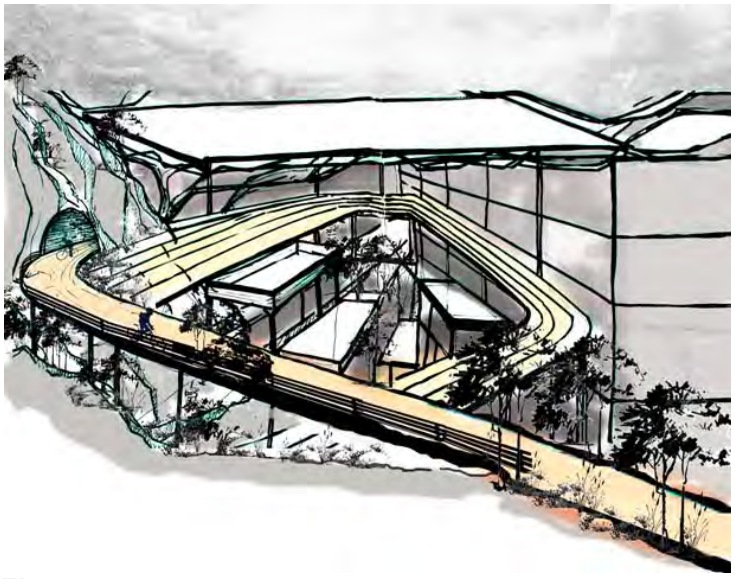


Figure 7.1

Chittagong a place full of adventurers has come with a new hobby or sports- trekking or exploring into the hills. A place like Chittagong where hilly areas are surrounded exploration can come among the young generation in contrary of sports or hobby. Bhatiary is slight lower than other hilly areas of Chittagong. In that height the sports I wanted to accommodate was possible.

Figure 7.2

Initial sketches



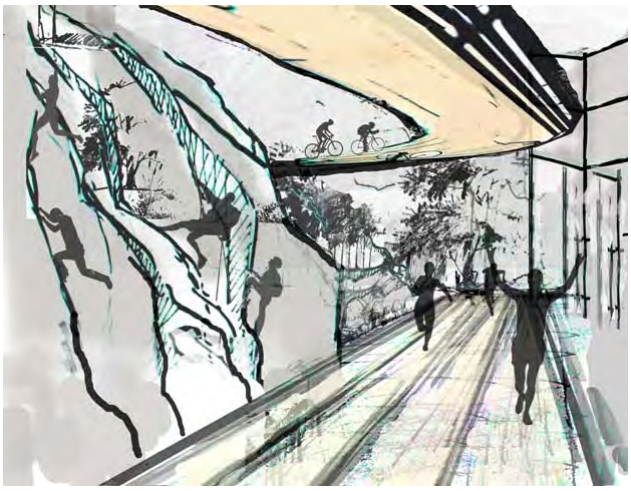


Figure 7.3

The sketches show how I imagined the relation with sports and nature should merge. The rock climbing area can be itself the hill. All the sports should attach together and generate a form dominated by site force.
All the sports combined a imagined a space which can be something like the montage given below.

Figure 7.4

Considering the Bhatiary Lake and the hills which has not that much height I imagined something like this montage. The ramps with all the cycling tracks, running tracks and the skateboarding areas can be all together in the same place. A place where I can see all the sports together, but in level variations.

Form development

One of the first steps of form derivation was to place the building respecting the contour. There was a gap between two contours where the building could be accommodated easily.
I calculated the total functional area and placed in the site. Using the lake was my main intention. I divided the functional areas and split into two parts to get a better view of the lake. I wanted to capture the the contour so I could place my experiential adventure sports in the contour. As shown in the diagram I gradually derived the form without touching the contour and placed it all together in a controlled facility.

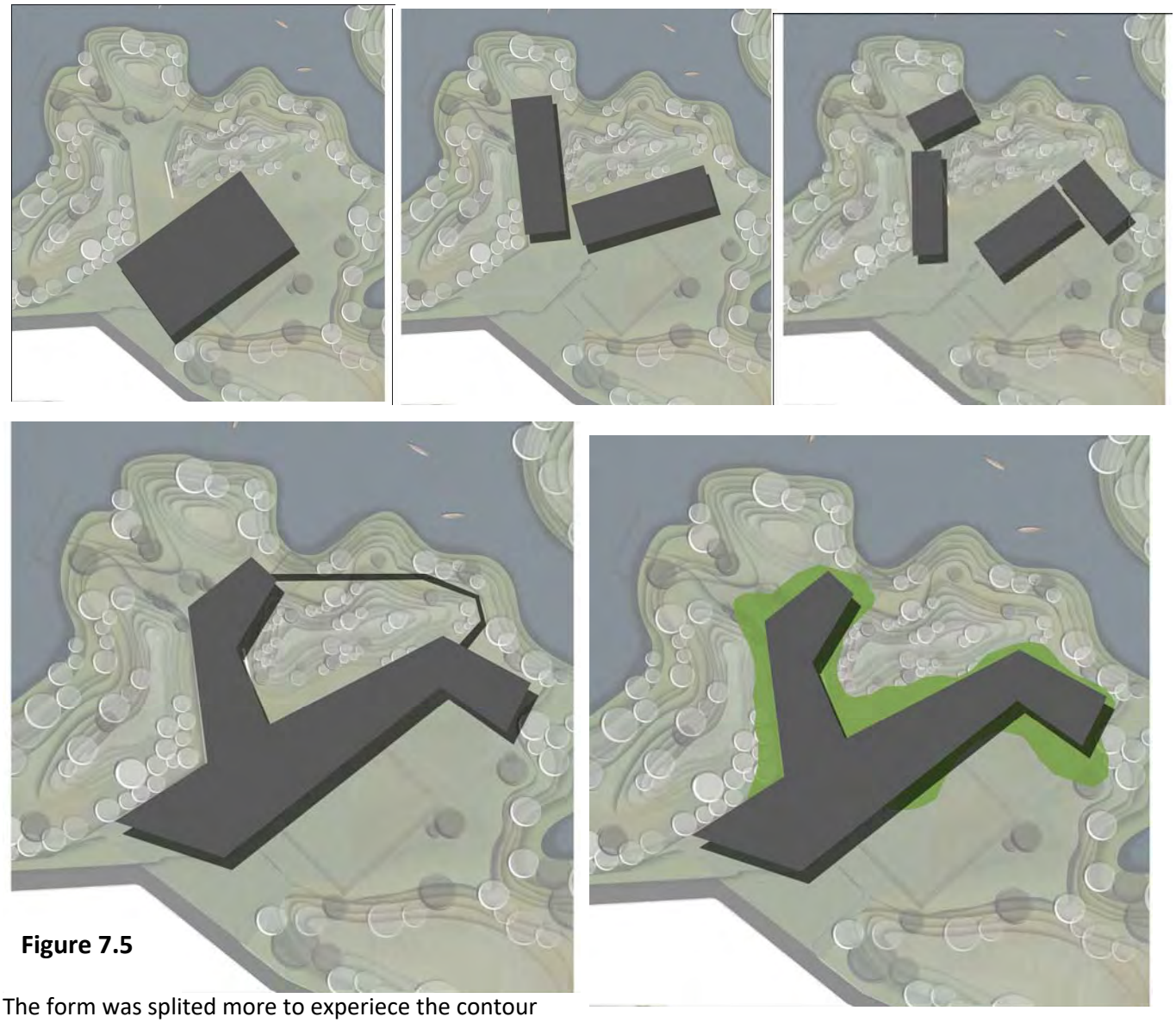
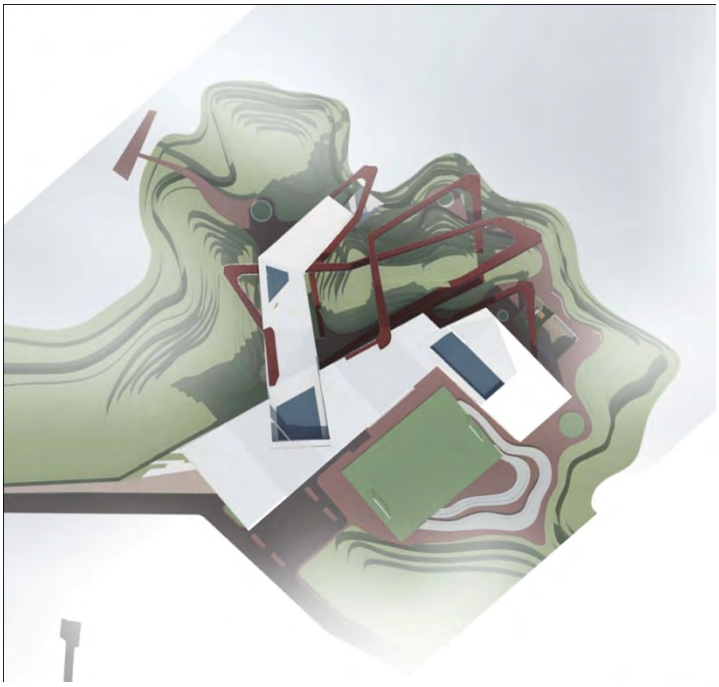


Figure 7.5

The form was splited more to experiece the contour and lake. The adventure sports like running track and cycling track were given to enjoy the view . The zoning was also done with the placement of the structure.As in the last image after the placement of the structure in the contour the landscape came with the contour and the lake.

Final Design



The roof plan of the building is given below. With the ramps of running track and cycling track the plan became something like the figure.

Glass was given to the roof so that sunlight can go through the lobby and multi sports court and the rock climbing wall.

Figure 7.6

The yellow one is cycling track anf the red one is running track. The ramps were calculated measuring the contour height and the building heights. The ramps also went through the mezannine floor inside the building for the cycle stands and stop points.

Figure 7.7

Plans

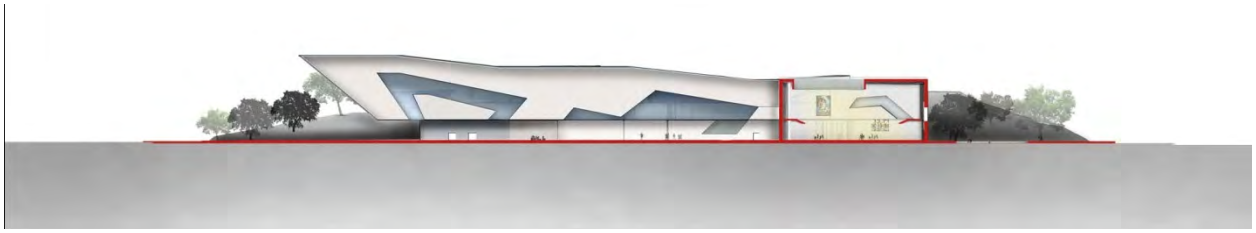
Figure 7.8

Ground floor plan

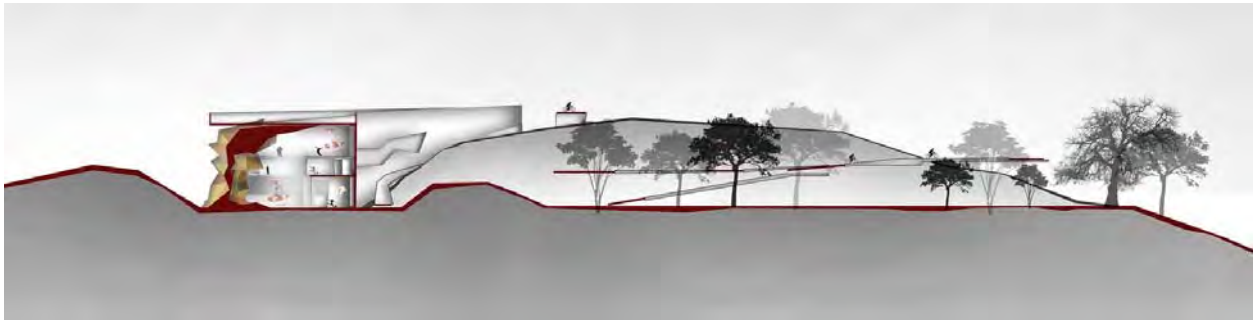
Figure 7.9

First floor plan

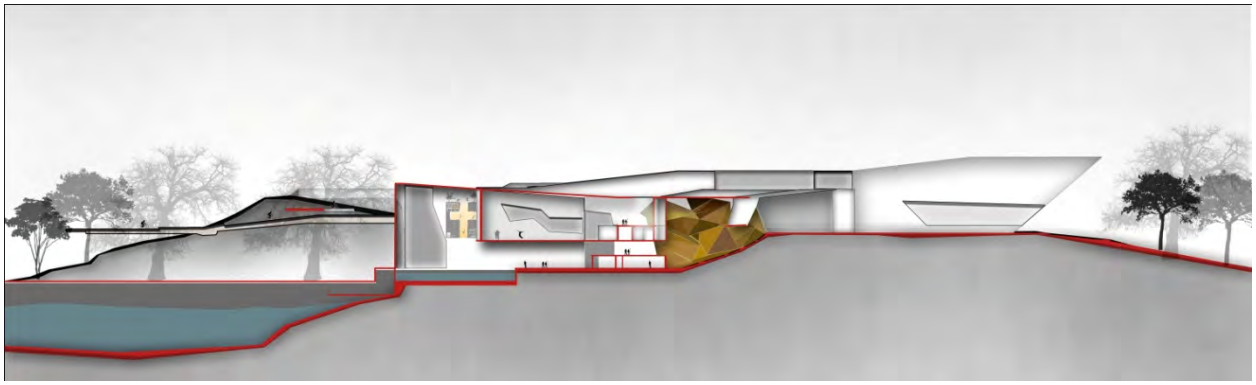
Sections



Section A-A'

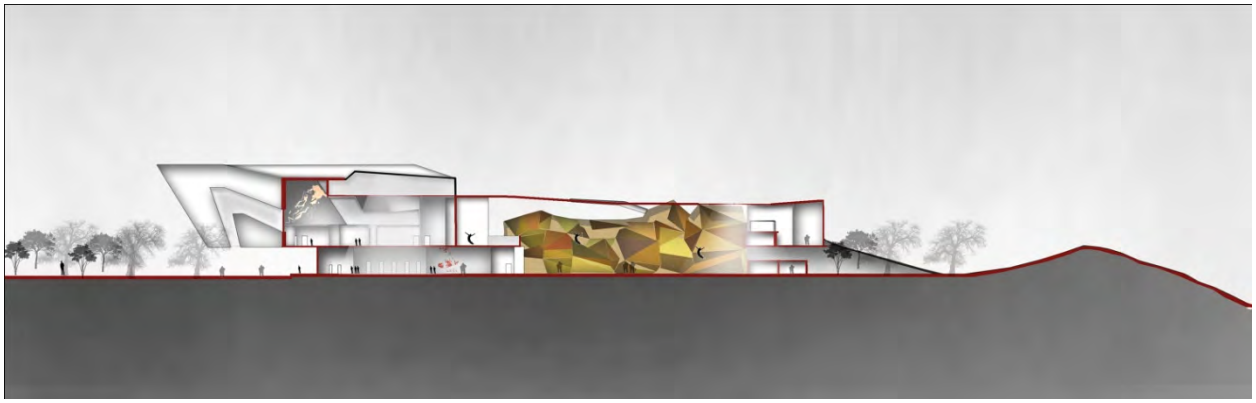


Section B-B'



Section C-C'

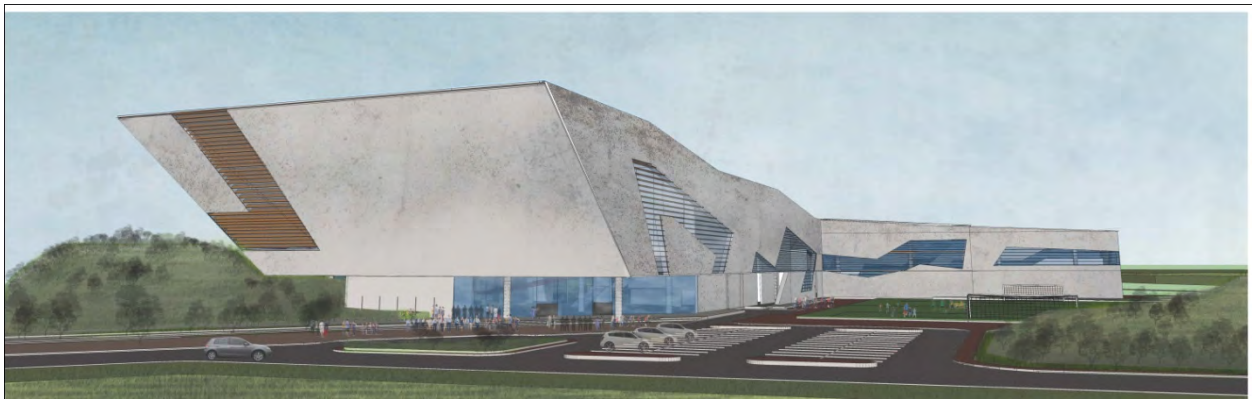
Section D-D’



Section E-E’

Figure 7.10

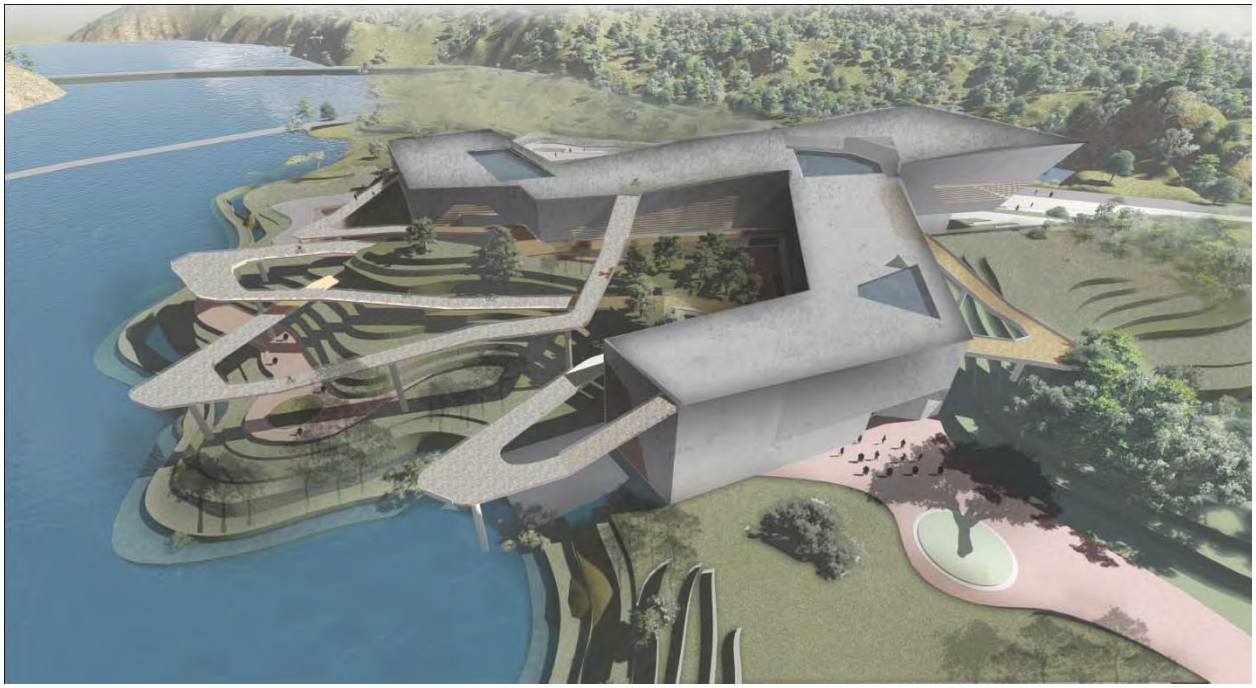
Perspectives



Figure

The entry of the building is shown in the figure. The elevation is derived from the building mass. The louvres were given so that the light doesn't enter directly to the building for the glare. The louvre gap is 2 feet.

View from the 1st floor lobby. Rock climbing wall from the ground floor and the double height space of the rock climing wall the shown in the perspective. From this view the contour can been seen easily. Under this floor there is a mezannine floor of cycling tracks.



This is a perspective view of the whole project including the tracks. The landscape and the tracks can be understood by this perspective. A view from the top of the roof.

Figure 7.11

Model pictures



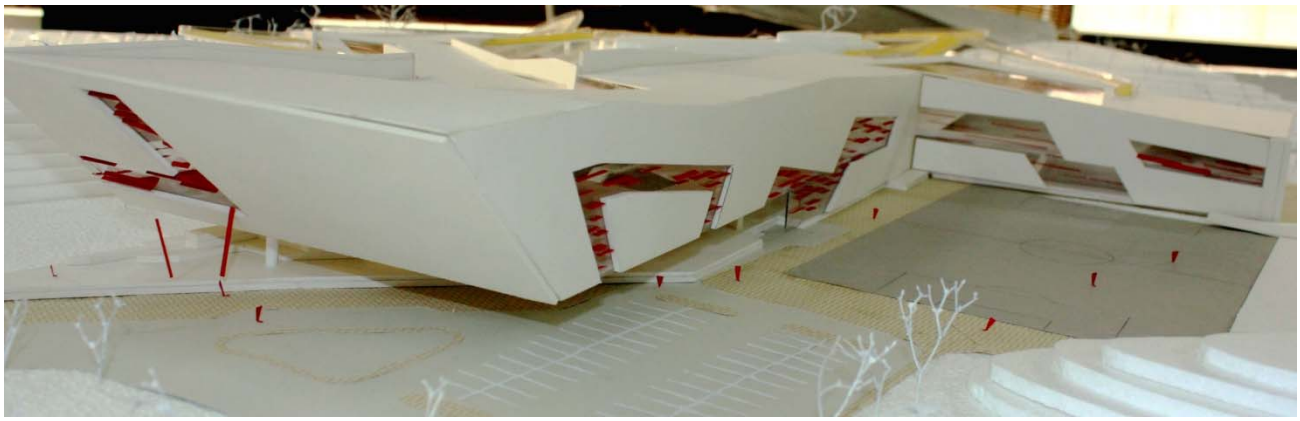
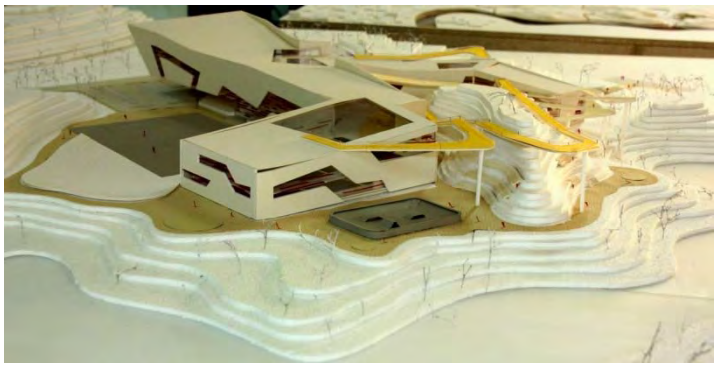
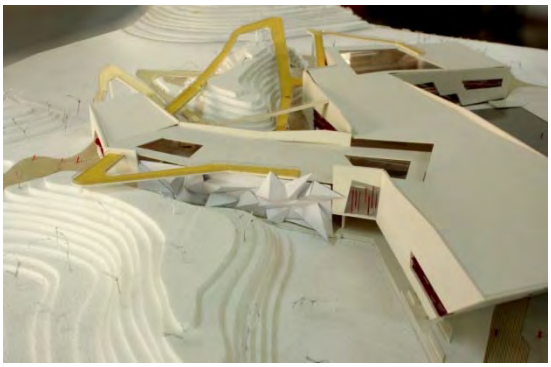




Figure 7.12

Conclusion

The aim of this project is to inspire people to explore themselves through different forms. Sports is a way a person can merge with innerself and nature. Naturizing people and bringing close to nature is the main intension of this project. The experience and exploration is the most important part. It increases morality, ensures health and it brings betterment for the society. No matter in which age you are in, mind will always want to play. And if that is by exploring thyself with nature then the memories remain.

References

Ankush Bahuguna, 2014, Adventure sports

http://www.mensxp.com/special-features/today/21319-manliest-adventure-sports-from-around-the-world-p1.html

Extremefreestyle, 2008, List of extreme Sports
Source: https://extremefreestyle.wordpress.com/2008/05/24/list-of-extreme-sports/

Indoor group games,2011

Source: http://www.greatgroupgames.com/indoor-group-games.htm

Jonathan Penney, 2011, Benefits of sports.

Source: http://www.sharecare.com/health/gyms-health-clubs/what-benefits-joining-gym

Track and field athletics, 2011

Source: https://simple.wikipedia.org/wiki/Track_and_field_athletics

Wikipedia,2005

Source: https://en.wikipedia.org/wiki/Skateboarding

Advanced leisure and recreation,2004,google books

Source:
https://books.google.com.bd/books?id=db96w27frnQC&pg=PT195&lpg=PT195&dq=national+sports+council+projects&source=bl&ots=Bq88B6VA0I&sig=DGlD0PYTd-4gsfoxrnsgKpO1_AA&hl=en&sa=X&ei=00dvVa6AGKSc7gbj8INw&ved=0CEMQ6AEwBw#v=onepage&q=national%20sports%20council%20projects&f=false

http://www.loudpapermag.com/articles/a-skateboarders-guide-to-architecture-or-an-architects-guide-to-skateboarding

Books, Time savers standard. Interior design

Source: https://www.reddit.com/r/skateboarding/

Source: http://www.archdaily.com/576098/10-points-of-a-bicycling-architecture

Source: http://www.lcsd.gov.hk/lsb/en/districts.php?ftid=17

Source: http://www.yorkshire.com/what-to-do/outdoors/onwheels/leisure-and-road-cycling

Source: http://www.emsoutdoors.com/rock-climbing/

Source: https://en.wikipedia.org/wiki/Rock_climbing

Source: http://www.menshealth.com/fitness/why-extreme-sports-make-you-a-better-man

Source: http://lang-8.com/458600/journals/933270701477776140835658488831447768676

http://www.sportengland.org/research/benefits-of-sport/health-benefits-of-sport/

http://www.sportanddev.org/en/learnmore/what_is_sport_and_development/what_is__sport__/