



Inspiring Excellence

NATIONAL SPORTS COMPLEX FOR SPECIALLY ABLED PERSONS

SUBMITTED BY

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ABSTRACT

Disabled people have equal right to enjoy a better life with access to basic needs as well as sports. In Bangladesh disabled people are most deprived of education, medical support, social support and sports facilities. Due to inadequate facilities disabled persons are still struggling for quality education and developing social skills. Not only facilities but also accessibility is very important for disabled persons. Due to inadequate accessibility disabled persons become socially bound to their own space separated from community. This prevents the normal development of disabled person as a child and even as adult. This paper is mainly focused on universal accessibility of disabled persons in exterior and interior space.

Sports makes a person physically and mentally strong. To enable persons with disabilities to enjoy a better life with access to basic needs leading towards establishing equal rights and opportunities to participate in all spheres of life as equal members of society education, medical supports and sports facilities with universal accessibilities is a must. According to World Bank in 2004 there was 13.6 million people including 3.4 million children and 10.2 million adults with disabilities in Bangladesh ("Disability in Bangladesh", 2004). In 2016 these numbers must have been increased vastly. There are many organizations and government facilities provided for educating, medical services and rehabilitation, but none for providing sports facilities. So a sports complex for disabled persons is very necessary to help develop independent and self-empowered disabled persons. A sports complex for disabled people can help disabled people grow more strong physically and mentally, which will allow them to participate in all spheres of life as equal members of the society.

CHAPTER 01: Introduction

- 1.1 Project brief**
- 1.2 Background of the project**
 - 1.3 Project objectives**

CHAPTER 01: Introduction

1.1 Project brief

Name : Jatio ProtibondhiKrira Complex (National Sports Complex for People with Disabilities)

Location : Savar

Area : 12.01 acres

Client : Government of Bangladesh

1.2 Background of the project

According to WHO, 10% of the 3rd world population or 650 million people are with disabilities (“Enable”, 2006). These large number of people have the equal right to participate in all spheres of mainstream development and its sustainability in not possible for any nation keeping these large number of people out of mainstream development.

People with disabilities are scattered in millions all over the country but the services, scope and recreational facility that are available in the country are far too inadequate to meet the needs of the total nation. It is encouraging that the initiative towards addressing the needs of people with disability in Bangladesh is getting priority day by day, but still inadequate and scattered. The situation demands a comprehensive and co-ordinate steps by all sectors, government and non-government organizations to consider disability issues as an edge defining development issues aiming at addressing the needs of people with disabilities.

If proper infrastructural educational and recreational facilities can be developed then this huge population having some sort of disabilities can participate in the mainstream of development and can take part significantly to increase our national GDP. Most of them can be part of our work-force and no longer will be a burden to the society. To attain the

goal, we need to develop infrastructural facilities and organizational capacities to give training of sports, proper treatment and counseling for person with disabilities. Protibondhi Krira Complex can lay a huge foundation towards achieving significant mainstream development.

1.3 Project Objectives

The main objective of the project is to enable persons with disabilities to enjoy a better life with access to basic needs and services. Which can lead their lives towards establishing equal rights and opportunities to participate in all spheres of life as contributive members of the society.

The specific objectives of the project are to-

- a. Establish ProtibondhiKrira Complex of excellence for services of persons with disabilities
- b. Demonstrate conceptual issues of disabilities, development approaches, implementation strategies, methods and techniques for services and refreshment towards development of persons with disabilities.
- c. Strengthen the special support and needs to individual group of persons with disabilities like Cerebral Palsy(CP), visually impaired, deaf-blind, autistic, intellectual disability, mental illness, multiple disabilities etc.
- d. Create an enabling environment for persons with disabilities through establishing inclusive school, special school, vocational services, rehabilitation, sports and culture.

CHAPTER 02: Literature review

2.1 Understanding people with disabilities

2.2 People with disabilities and impairment

2.2.1 Types of disabilities

2.2.1.1 Physical disabilities

2.2.1.2 Intellectual or Learning Disabilities

2.2.1.3 Psychiatric disabilities

2.2.1.4 Visual impairments

2.2.1.5 Hearing impairments

2.2.1.6 Neurological disabilities

2.3 Learning disabilities

2.3.1 Auditory Processing Disorder (APD)

2.3.2 Dyscalculia

2.3.3 Dysgraphia

2.3.4 Dyslexia

2.3.5 Language Processing Disorder (LDP)

2.3.6 Non-Verbal Learning Disabilities

2.3.7 Visual Perceptual/Visual Motor Deficit

CHAPTER 02: Literature review

2.1 Understanding people with disabilities

Disability is common experience in people's life. The World Health Organization (WHO) World report on disability (2011) says that, most of the people will be temporarily or permanently disabled at some point in their life, and people who will survive to old age will experience more difficulties in day to day functions. Many big extended families have disabled people living with them and non-disabled person's taking care of them. Normal perception about disabled people are very conditioned socially and mentally. Negative attitude and thinking often rise from misunderstanding and miss communication towards disabled people. People with disabilities are as diverse as people without disabilities. They are parents, partners, employees, sports person, artists and most importantly community members. The preamble to the United Nations Convention on the Rights of Persons with Disabilities (2006) states that disability arises from the interaction between the impairments a person may experience and barriers that 'hinder their full and effective participation in society on an equal basis with others.' The impairments also includes 'long term physical, mental, intellectual or sensory impairments'.

2.2 People with disabilities and impairment

Impairment is loss of a body part or difference of body part functionality. Impairment normally occurs due to accidental body part loss, genetic disorder or long term or short term illness. Partial sight, complete blindness, hearing loss, paralysis of body parts are some examples of impairment. World report on disability (2011) says that, 'Disability is complex, dynamic, multidimensional, and contested.' Every person is different and disabled persons are different like everyone else with different needs and supports. To complete day to day life disabled persons require different supports and identifying these supports and its implication is very important to build right education for people with disabilities.

2.2.1 Types of disabilities

2.2.1.1 Physical disabilities

According to the National Educational Association of Disabled Students (NEADS), a physical disability is one that affects a person's mobility or dexterity ("Making Extra Curricular Activities Inclusive", 2016). An individual with a physical handicap might have a compelling reason to utilize a percentage of special supplies for support for versatility. It also incorporates persons who lost limbs and due to those state of their body, require slight adaptations on a chance to be settled on to empower them to take part completely to function in society.

Paraplegia what's more Quadriplegia are what numerous individuals first identify for a physical handicap ("Making Extra Curricular Activities Inclusive", 2016). Paraplegia comes about from damage of the spinal cord, happening beneath neck, same time quadriplegia alludes to harm of the spinal line in the neck ("Making Extra Curricular Activities Inclusive", 2016). Changing measures of losing limbs and different portability might effect from these condition. Different types for physical disability like- polio, cerebral paralysis and genetic states are also responsible for these conditions.

NEADS defined Types of Physical Disabilities as-

Paraplegia

Quadriplegia

Multiple sclerosis (MS)

Hemiplegia

Cerebral palsy

Absent limb/reduced limb function

Dystrophy

Polio ("Making Extra Curricular Activities Inclusive", 2016).

2.2.1.2 Intellectual or Learning Disabilities

According to American Association of Intellectual and developmental Disabilities- “Intellectual disability is a disability characterized by significant limitations in both intellectual functioning and in adaptive behavior, which covers many everyday social and practical skills” (Definition of Intellectual Disability, 2016). These disabilities normally develop before crossing teenage period. They have difficulty completing tasks and processing information. Communication is very difficult them. NEADS find learning difficulties can cause difficulties in reading, writing, or mathematics and 10% of the population affected by it (“Making Extra Curricular Activities Inclusive”, 2016).

2.2.1.3 Psychiatric disabilities

Mental illness can appear at any age, which cannot be diagnosed visually. NEADS found Psychiatric disabilities as the most misunderstanding disabilities in the community and people judge them according to their behavior why creates more confusion (“Making Extra Curricular Activities Inclusive”, 2016).

The University of Kansas defined- “Psychiatric disabilities are persistent psychological, emotional or behavioral disorders which result in significant impairment of educational, social or vocational functioning (“Psychiatric Disabilities”, 2016).

2.2.1.4 Visual impairments

“Only 5% of 'blind' people can't see anything” (“Making Extra Curricular Activities Inclusive”, 2016). Visual impairments might be brought on toward a large number from claiming factors, including disease, accidents, and also birth defects.

2.2.1.5 Hearing impairments

Kentucky's Office for the Americans with Disabilities Act defined hearing impairments as-“A hearing impairment is a hearing loss that prevents a person from totally receiving sounds through the ear and if the loss is mild, the person has difficulty hearing faint or distant speech”(“Hearing Impairments”, 2016).many thing can cause deafness and hearing loss, like- accident, birth defect. NEADS found a distinction between people who are deaf and those who have a hearing impairment (“Making Extra Curricular Activities Inclusive”, 2016).

2.2.1.6 Neurological disabilities

University of California San Francisco Medical Center (UCSF Medical Center) defined neurological disabilities as- “Neurological disorders are diseases of the brain, spine and the nerves that connect them and there are more than 600 diseases of the nervous system, such as brain tumors, epilepsy, Parkinson's disease and stroke as well as less familiar ones such as front temporal dementia” (“Neurological Disorders”, 2016). A neurological handicap may be connected with harm of the sensory system that brings losing some physical or mental abilities. A neurological inability might influence an individual's ability with move or control things alternately the lifestyle they gesture or express their affections (“Making Extra Curricular Activities Inclusive”, 2016). Their thinking process and ability to process information is affected too. The cerebrum and the spine are the regions mostly associated with neurology and heart attacks, genuine infections, absence of oxygen to the brain might additionally result a neurological disability (“Making Extra Curricular Activities Inclusive”, 2016).

2.3 Learning disabilities

According to Learning Disabilities Association of America, learning disabilities are neurologically-based processing problems and these disorders could meddle for learning fundamental basics for example, such that reading, composing or math (“Types of Learning Disabilities”, 2016). They can also meddle for huge basics for example, such that organization, occasion when planning, conceptual reasoning, in length alternately transient memory furthermore consideration (“Types of Learning Disabilities”, 2016). It may be critical to understand that learning disabilities can influence an individual’s expressions and might sway connections with family, companions and in the working environment.

2.3.1 Auditory Processing Disorder (APD)

Auditory Processing Disorder Foundation defined APD - “Auditory Processing Disorder (APD), also known as Central Auditory Processing Disorder (CAPD) is the reduced or impaired ability to discriminate, recognize or comprehend complex sounds, such as those used in words, even though the person's hearing is normal” (“WHAT IS AUDITORY PROCESSING DISORDER (APD)?”, 2016). Otherwise called vital sound-related preparing Disorder, this may be a condition that adversely. Influences how callous that goes unobstructed through the ear may be transformed or translated in the brain (“Types of Learning Disabilities”, 2016). People with APD don't perceive unpretentious contrasts the middle of resonances and significantly when the resonances need aid boisterous what's more reasonable to listen (“Types of Learning Disabilities”, 2016). It is difficult for them to identify the sources of sound and concentrating on sounds with the continuous background noises.

2.3.2 Dyscalculia

British Dyslexia Association defined dyscalculia as-“Developmental Dyscalculia (DD) is a specific learning disorder that is characterized by impairments in learning basic arithmetic facts, processing numerical magnitude and performing accurate and fluent calculations”(as cited in “American Psychiatric Association” (2013). People for this sort about learning disabilities might additionally need poor perception from claiming math symbols, might battle with memorizing also arranging numbers, experience issues letting time, alternately need inconvenience for numbering(“Types of Learning Disabilities”, 2016).

2.3.3 Dysgraphia

Learning Disabilities Association of America defined dysgraphia as- “A person with this specific learning disability may have problems including illegible handwriting, inconsistent spacing, poor spatial planning on paper, poor spelling, and difficulty composing writing as well as thinking and writing at the same time”(“Dysgraphia”,2016). A particular taking in incapacity that influences a person’s handwriting capacity What’s more fine motor skills. Issues might incorporate obscured handwriting, conflicting spacing, poor spatial arranging ahead paper, poor spelling, and trouble forming composing and in addition considering furthermore composing in those same the long haul(“Types of Learning Disabilities”, 2016).

2.3.4 Dyslexia

Learning Disabilities Association of America defined dyslexia as- “A specific learning disability that affects reading and related language-based processing skills” (“Types of Learning Disabilities”, 2016). The seriousness could contrast in every unique and can influence perusing fluency, decoding, perusing comprehension, recall, writing, spelling and often discourse and might exist alongside different related issue. Dyslexia is frequently alluded as concerning illustration a Language-Based taking in incapacity.

2.3.5 Language Processing Disorder (LDP)

Lutheran Special School and Services defined LDP as-“A language processing disorder (LPD) can be described as having extreme difficulty understanding what you hear and expressing what you want to say”(“Language Processing Disorders(LPDP)”, 2016). A particular sort for sound-related transforming disorder (APD) in which there will be trouble attaching implying will meaningless gatherings that type words and stories. APD influences those translation from claiming all sounds hailing under those brain, a Language Processing Disorder (LPD) relates main of the transforming of language.LPD can influence expressive language or receptive language (“Types of Learning Disabilities”, 2016).

2.3.6 Non-Verbal Learning Disabilities

A disorder that is typically portrayed by perusing a huge difference in the middle of higher verbal aptitudes and weaker motor, visual-spatial and social abilities and a distinct for NLD (or NVLD) need issue translating nonverbal cues like facial expressions alternately form language, furthermore might bring poor coordination (“Types of Learning Disabilities”, 2016).

2.3.7 Visual Perceptual/Visual Motor Deficit

Learning Disabilities Association of America defined visual perception as- “A disorder that affects the understanding of information that a person sees, or the ability to draw or copy” (“Types of Learning Disabilities”, 2016). A trademark seen over individuals with learning disabilities for example, such that dysgraphia or Non-verbal LD, it can bring about forgetting unpretentious contrasts to shapes or printed letters, losing put frequently, battles with cutting, holding pencil excessively awful tightly,. Or poor eye/hand coordination (“Types of Learning Disabilities”, 2016).

CHAPTER 03: Site and context analysis

3.1 Site location

3.2 Site Images and surroundings

3.3 Site mapping and context analysis

3.4 Site temperature and climatic condition

3.5 Swat analysis

CHAPTER 03: Site and context analysis

3.1 Site location

Coordinates: 23°49' 11.59"N, 90°15' 21.10" E (30 feet high from sea level)

Total Area: 12.01 acre

Location: Bank Town, Savar, Dhaka, Bangladesh.

Site is located near the heart of Savar, west bank town adjacent to the Savar Aricha highway. Bank town is mainly residential area surrounded by river in three sides and at periphery industries are thriving with people earning living from these living nearby. Karnatali River borders the south side of the site which joined the Daleshawari River in east. Bank town is surrounded by water bodies in 3 sides and connected to Savar Aricha highway by two bridges.



Figure 1: Location of site

3.2 Site Images and surroundings

At the north side of the site there is residential areas with very narrow roads and with multiple markets and mosques. There is pedestrian entrance at that side too. The south side is Karnatali River with heavy vegetation in site giving lots of canopy shades. At the east site is separated from East Bank Town by Savar Aricha highway. East Bank Town is residential area too. Around site building are low storied and high storied. Highest 10 storied building in this area is located adjacent to the north wall of the site. There is an existing building in site for site keepers and official visitors resting. Government proposed a connection from Savar Aricha highway to site at east of site which can serve as main vehicular and pedestrian entrance for the site.

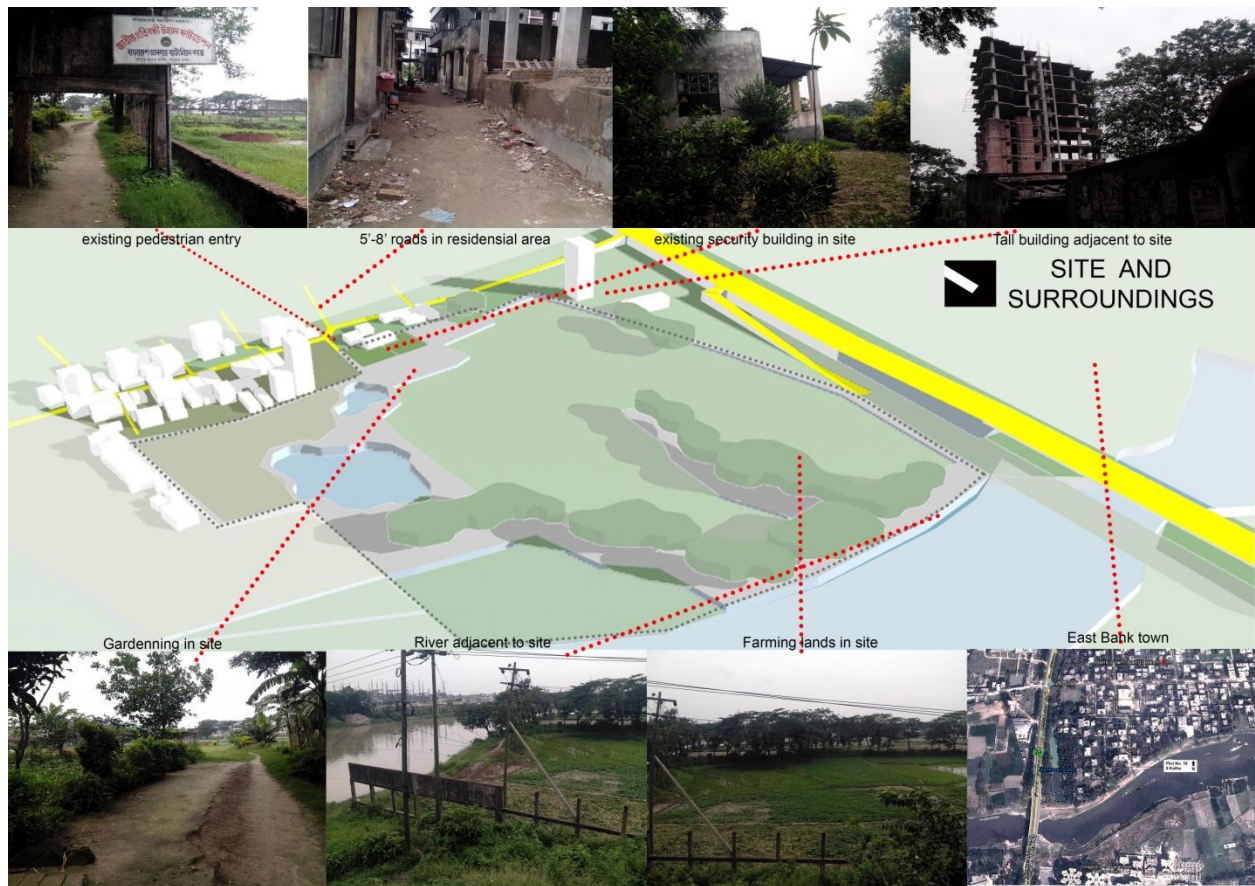


Figure 2: Site surrounding

Image source: site images –Author, East Bank Town- bdbazar24.com

3.3 Site mapping and context analysis

Savar is the progression of Dhaka city. Historically and monumentally Savar is very rich. It is already a tourist favorable spot as the Jatiyo Sriti Soudho, the national monument for Martyrs of The Liberation War is situated in the heart of Savar. Countries only full residential university, Jahangirnagar University designed by Architect Muzharul Islam is in Savar too. And both these are close to site adjacent to Savar Aricha highway.



Figure 3: Solid, void and water body density

The progressing in Bank Town followed the Savar Aricha highway. In west Bank Town the build form growth is very dense rather than the surrounding areas. Most of these buildings in West Bank Town are concrete brick structure with very few tin shaded structures.

On the other hand in East Bank Town the Growth is methodical as it's a police colony. These residential apartment building are averaging 6 storied to 8 storied with fair amount of open spaces. In the south of East Bank Town opposite side of Karnatali River a new housing coming up which huge clusters of 10 storied buildings.



Figure 4: Bank town zoning

The growth reduced as it went far away from the Savar Aricha highway. The water bodies around these area is very dense suggesting the high lands in this area was used for living and low lands for cultivation. The dense growth stoped near site and the western side of site is used as children playground and rest for cultivation on lease.



Figure 5: Existing site mapping

3.4 Site temperature and climatic condition

According to Climate-Data.org, “Savar’s climate is classified as tropical” (“CLIMATE: SAVAR”, 2016). It rains more in summer than winter in Savar. The climate here is classified as Aw by the Köppen-Geiger system (“CLIMATE: SAVAR”, 2016). The average temperature in Savar is 25.8 °C. Precipitation here averages 1990 mm (“CLIMATE: SAVAR”, 2016).

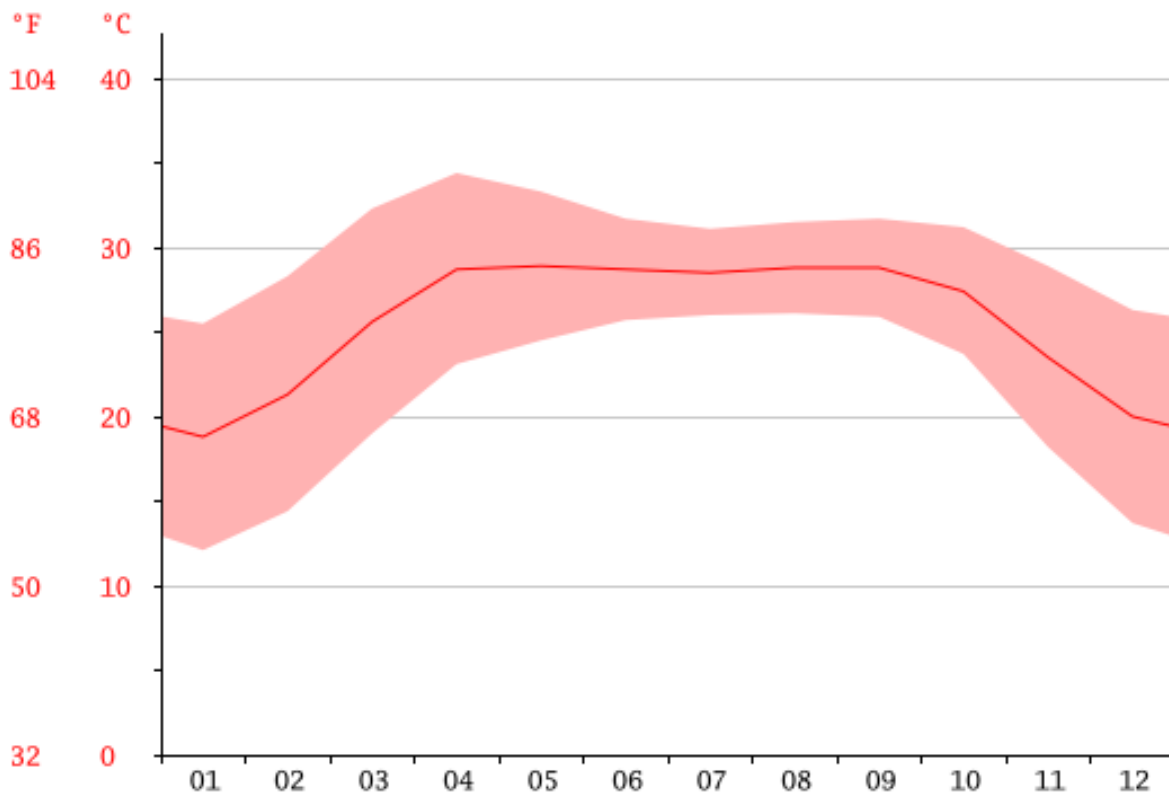


FIGURE 6: TEMPERATURE GRAPH

Source: climate-data.org, retrieved from- <http://en.climate-data.org/location/123710/>

“At an average temperature of 28.9 °C, May is the hottest month of the year. In January, the average temperature is 18.8 °C. It is the lowest average temperature of the whole year” (“CLIMATE: SAVAR”, 2016).

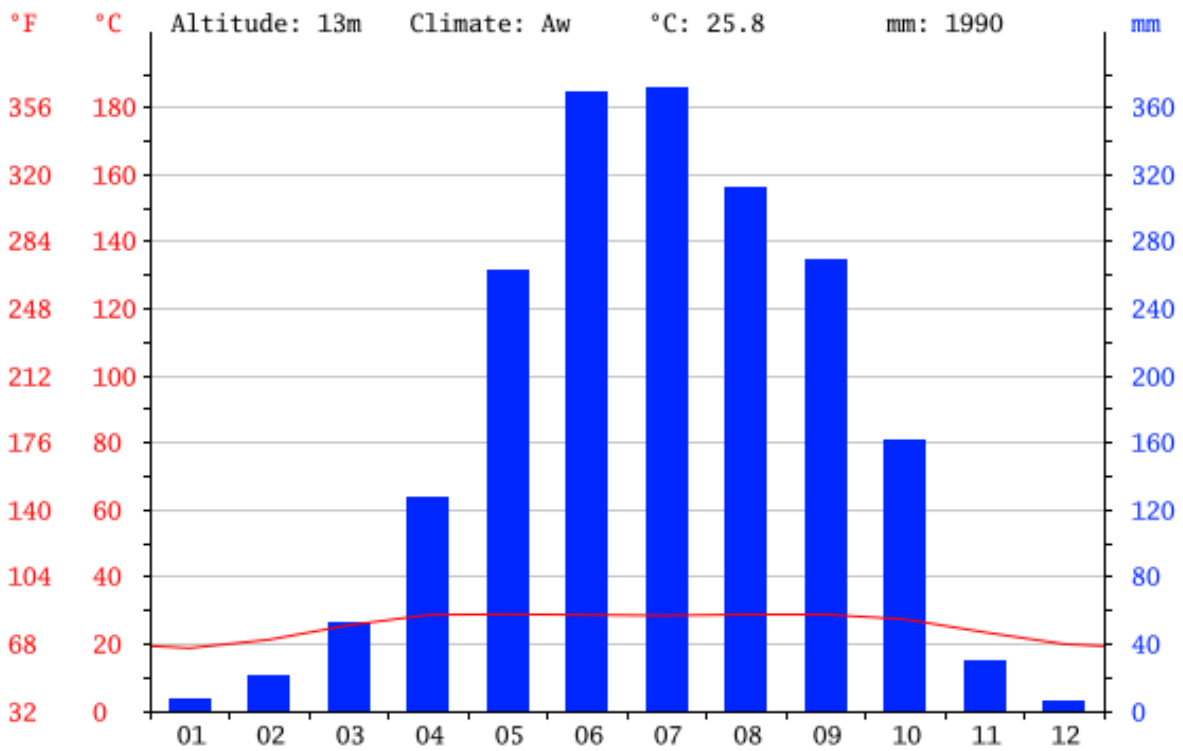


Figure 7: Climatic graph

Source: climate-data.org, retrieved from- <http://en.climate-data.org/location/123710/>

Precipitation is the lowest in December, with an average of 6 mm. Most precipitation falls in July, with an average of 372 mm (“CLIMATE: SAVAR”, 2016).

3.5 Swat analysis

Strength:

- Canopy trees on southern side of the site providing shades.
- Adjacent to Savar Aricha highway
- Non monotonous site with river in southern side, highway on east, residential area on north and open ground on west side of the site.
- Water bodies inside site
- Near Jatiyo Sriti Soudho and Jahangirnagar University

Weakness:

- Low land
- Excessive water bodies near and in site, considering project for persons with disabilities
- Flood prone areas in southern side of site
- Less connectivity with secondary roads

Opportunity

- Has the opportunity to become a gathering hub for persons with disabilities across nation and world
- Can enhance the growth of the area
- Can help persons with disabilities grow social communications as the project has scope for local gathering.

CHAPTER 04: Case studies

4.1 Case study 1

4.2 Case study 2

CHAPTER 04: Case studies

4.1 Case study 1

Project title: BATTAMBANG PHYSICAL REHABILITATION CENTRE (Cambodia, 1991)

Site: Battambang

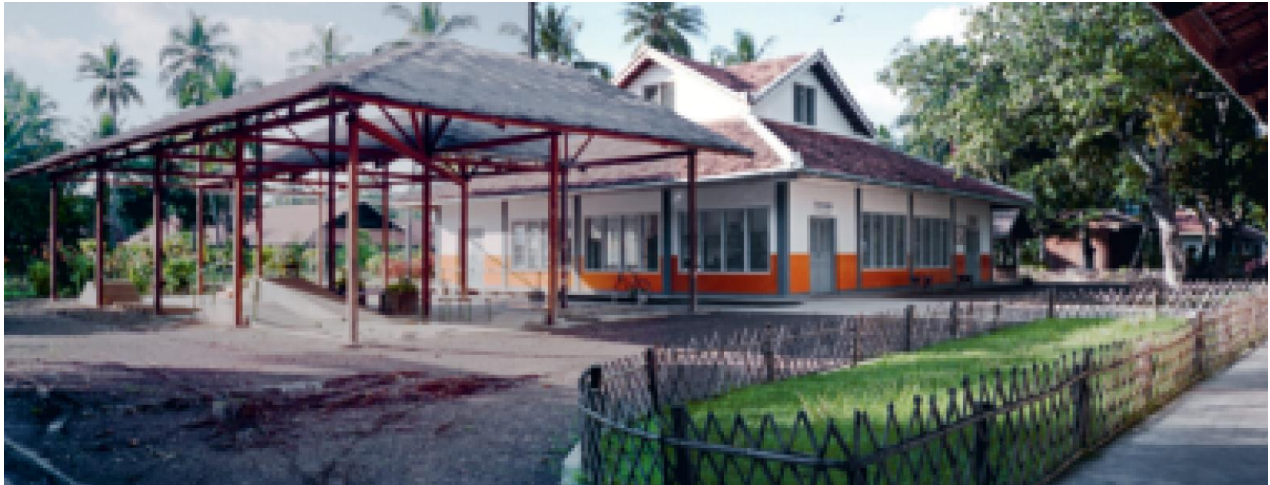


Figure 8: PT department – advanced training court, 1993

Source: François Rueff/ICRC (International Committee of Red Cross)

This rehabilitation center has few buildings across over a plot of land with lots of palm trees. Only one third of the area is occupied by built area. Thus it has lots of open area which can provide lots of out-door activities.

Most of the buildings are one storied. The slope roofing of the buildings reflect the local architectural style. Which gives this facility an architectural character which is highly appreciated by users (Bonnet, 2014, p-42). The slope steeping roofs and high ceilings provide passive cooling and are very appropriate for humid and warm climates (Bonnet, 2014, p-42). Entire facility can be accessed from outside which avoids the need for internal corridors, which easily accumulate stagnant and humid air in tropical climates (Bonnet, 2014, p-42).

This facility has 3 main area. The clinical area, the PT department and the P&O department are located in the first area, to the south (Bonnet, 2014, p-42). The main building at the entrance to the site contains the reception and the workshop with its stores (Bonnet, 2014, p-42). The PT building, the assessment rooms and a covered advanced training court are accessible from the rear of the main building (Bonnet, 2014, p-42). Outdoor sports courts are located behind the PT building. Palm trees shade the outdoor sports areas and keep them cool.



Figure 9: Service user accommodation – dining area, 2014

Source: Alessandro Giusti/ICRC



Figure: 10 & 11 PT department – outdoor sports area and advanced training court, 1999

Source: Chamrong Lo/ICRC



Source: Bruno l'Hoste/ICRC



Figure 12: Plan of Battambang rehabilitation center in 2014 (Bonnet, 2014, p-41)

From plan we can clearly understand that the services provided are connected under one roof and the accommodation facilities are adjacent in a private zone attached by walkway. Keeping the circulation simple and in closest proximity. The medical services are provided near the entrance as out- going patients can have the simple circulation and which provide the residents privacy.



Figure 13: Service user accommodation – dormitories, 2014

Source: Alessandro Giusti/ICRC



Figures 14 &15: P&O department – workshop, 2014

Source: Alessandro Giusti/ICRC

PROS

- The building on the site took one third of the plot of land, providing this facility a good ratio of outdoor space to buildings.
- High ceilings with steep roofing provide passive cooling of the buildings.
- Outdoor shaded spaces gives comfortable areas for activities, protected from rain and shaded from the sun.
- External circulation avoids the need for central corridors, which may easily accumulate stagnant and humid air (Bonnet, 2014, p-43).
- The absence of internal corridor reduces the built floor area (Bonnet, 2014, p-43).

CONS

- One single building contains two functional areas (the P&O workshop and the reception) which are not compatible because of the noise from the workshop and the need for a quiet atmosphere at the reception (Bonnet, 2014, p-43).
- Dormitory is not connected with services by shades.

4.1 Case study 2

Project title: KABUL PHYSICAL REHABILITATION CENTRE (Afghanistan, 1995)

Site: Kabul



Figure 16: Entrance, 2010
Source: Samuel Bonnet/ICRC

This facility is designed on a large plot of land. It is easily accessible to beneficiaries. Construction of the project started with extensive groundwork as the site is steeply sloped and the ground was levelled and a retaining wall built (Bonnet, 2014, p-49). A narrow strip of the site above the retaining wall, much higher than the levelled ground, is used only as a technical and maintenance area (Bonnet, 2014, p-49).

This facility has four main buildings and placed along an internal road lined with trees providing shades. It has closed, compact single-storied buildings each with an internal courtyard with rooms on either side of their longitudinal wings (Bonnet, 2014, p-49). These wings all have single-pitch roofs that slope towards the courtyards (Bonnet, 2014, p-49).



Figure 17(a): Plan of Kabul PRC in 2014 (Bonnet, 2014, p-47)

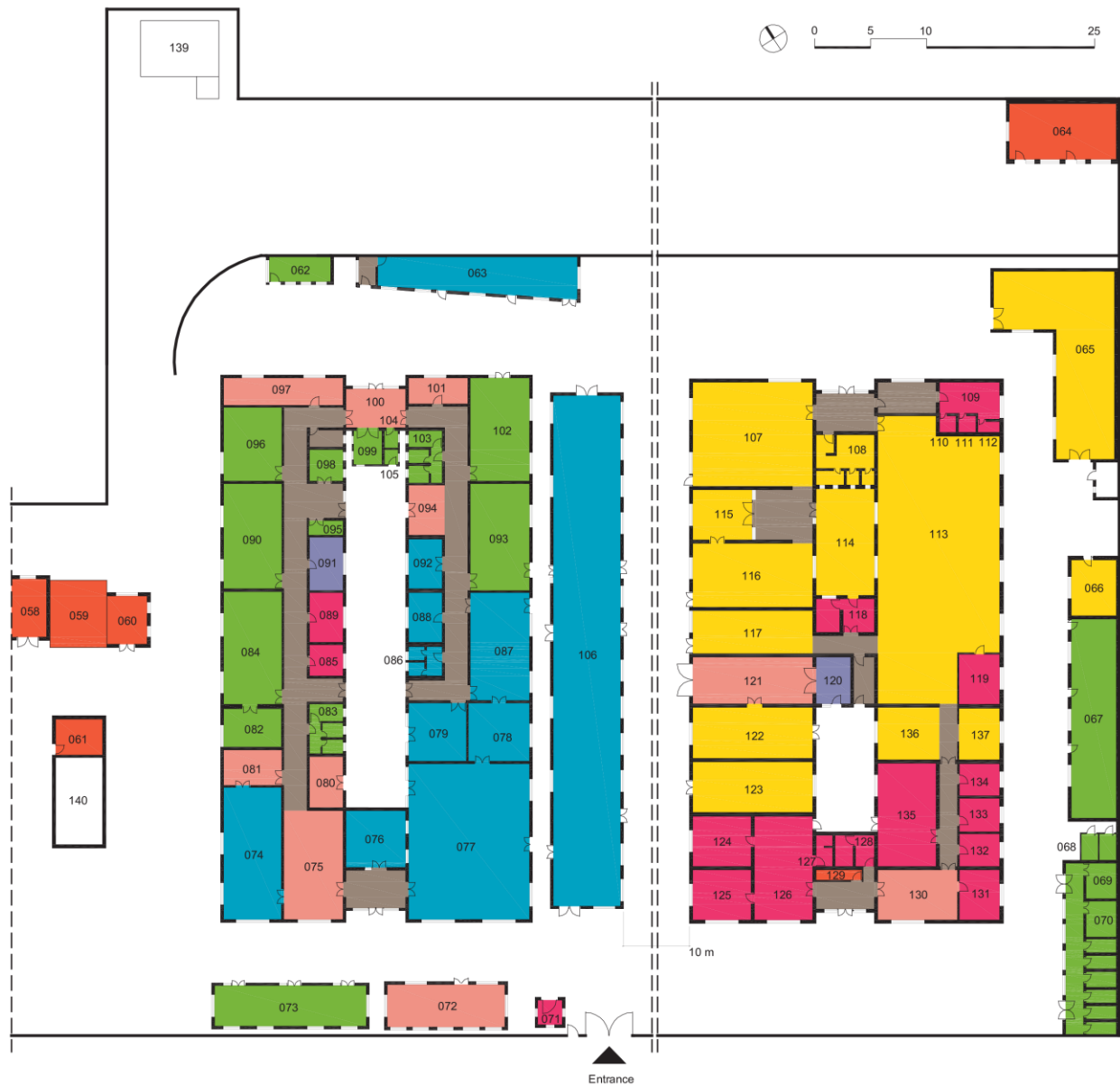


Figure 17(b): Plan of Kabul PRC in 2014 (Bonnet, 2014, p-48)

From the plan we can see that medical services and therapy services are spread across the facility to provide services for both outgoing patients and staying patients. Service user accommodation is provided in the middle to reduce their travelling distance and this also providing them chances of more socializing.



Figure 18: PT department – advanced training court, 2009
 Source: Laurent Bedel/ICRC

The total floor area of the facility is 7,401 m² on a plot of land measuring 16,080 m² (Bonnet, 2014, p-52). Which leaves almost 55% area of the site as open space and a very good scope for varieties of outdoor activities. For positive outcome 90% employees in this facility are persons with disabilities (Bonnet, 2014, p-51). Which encourage the patients more to become self-dependent.



Figure 19: Advanced training court, 20
 Source: Ash Sweeting/British Red Cross



Figure 20: Basketball court, 2014
 Source: Jessica Barry/ICRC



Figure 21: P&O department, 2013
Source: Sean Maguire/ICRC



Figure 22: P&O department, 2013
Source: Jacob Simkin/ICRC

PROS

- The buildings are made by local craftsmen with local techniques, so it's easily maintainable.
- All buildings are single-storied which makes it easily accessible by people with disabilities.
- Outdoor spaces are landscaped and have outdoor lighting (Bonnet, 2014, p-52).
- Fire hose reels connected to a specific water network have been installed throughout the site as part of the fire safety strategy (Bonnet, 2014, p-52).

CONS

- Most of the buildings are using traditional heating system, which is burning more energy with less productivity. Although new heating system is install in few sections of the facility (Bonnet, 2014, p-52).
- Some facilities are spread across the site which is quite distant from accommodation facilities.

CHAPTER 05: Program development

5.1 Client's given program requirement

5.2 Program analysis

5.2.1 Supervision

5.2.1.1 *Administrative function*

5.2.1.2 *Medical services*

5.2.1.3 *Educational program*

5.2.2 Residence

5.2.3 Entertainment and Sports

5.2.4 Bubble diagram suggested by Bonnet

5.3 Schedule of functional requirement

CHAPTER 05: Program development

5.1 Client's given program requirement

a. 10 storied building with following functions-

- Administrative unit
- Academic unit
- Auditorium (600 persons)
- Medical center (including physiotherapy, occupational therapy and 20 bedded rehabilitation)
- Conference hall
- Seminar rooms
- Meeting rooms
- Reception, lift lobby and lounge
- Toilets
- Basements with 100nos. car parking

b. 400m Athletic track accommodating all events and a football field

c. Resting shades for athletes

d. cricket field

e. Swimming pool

f. Gymnasium

g. Mosque

h. 6 storied staff quarter

i. 6 storied dormitory

5.2 Program analysis

Persons with disabilities needs care and services to become self-sufficient and to participate all spheres of main-stream activities. To analyze programs for this project their basic needs are noted and categorized under importance and connectivity.

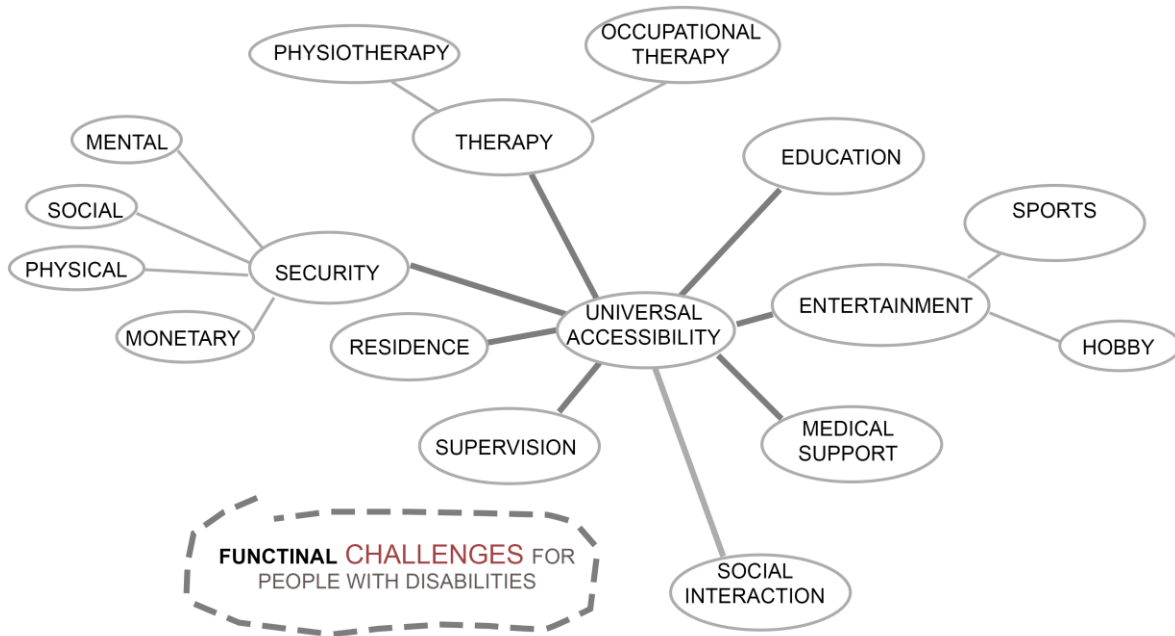


Figure 23: Functional challenges for persons with disabilities

Source: Author

Medical support, therapy and counseling is very important persons with disabilities to become self-sufficient. Increasing their social involvement to believing in themselves is an important task for counselors. Social, mental and physical security is also very important as they are important for everyone. Education can give persons with disabilities the strength to take care of themselves and function and enjoy all equilibriums of life. These core needs and challenges are categorized and compared into clients required programs to develop and find connectivity among programs according to special needs of persons with disabilities.

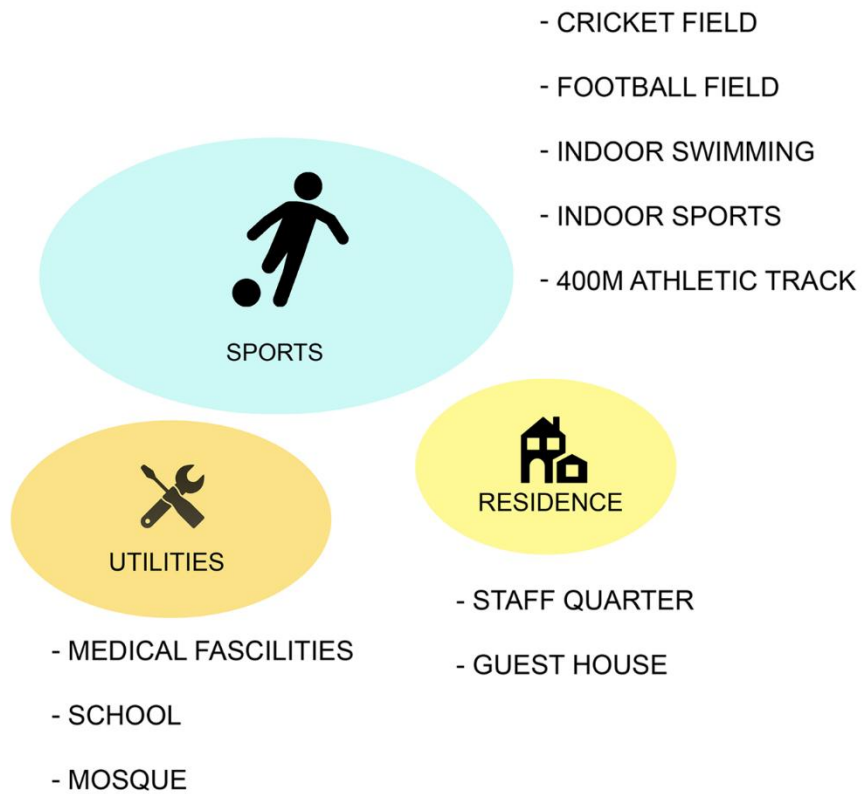


Figure 24: Functional arrangement promoting abilities

Source: Author

All basic needs of persons with disabilities can be taken in account in 3 major parts.

1. Sports
2. Residence
3. Utilities

5.2.1 Supervision

Administrative function, medical services and educational programs are included in supervision. This core functions are highly connective and serve single purpose of taking care of a disabled person and providing the facilities to complete tasks to participate in main-stream.

5.2.1.1 Administrative function

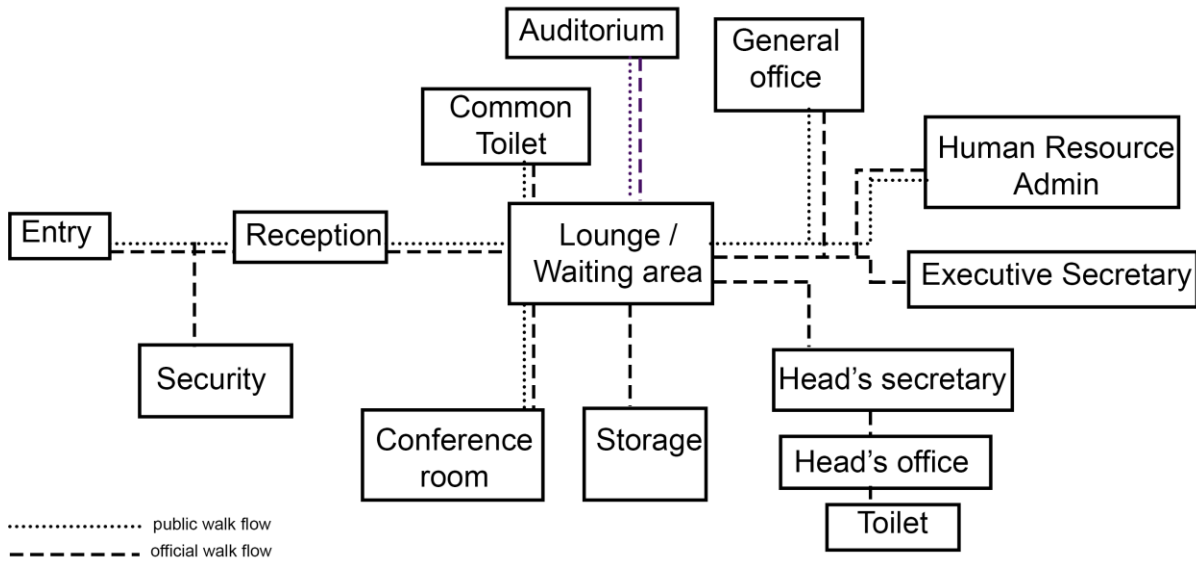


Figure 25: Bubble diagram of Administrative unit

Source: Author

5.2.1.2 Medical services

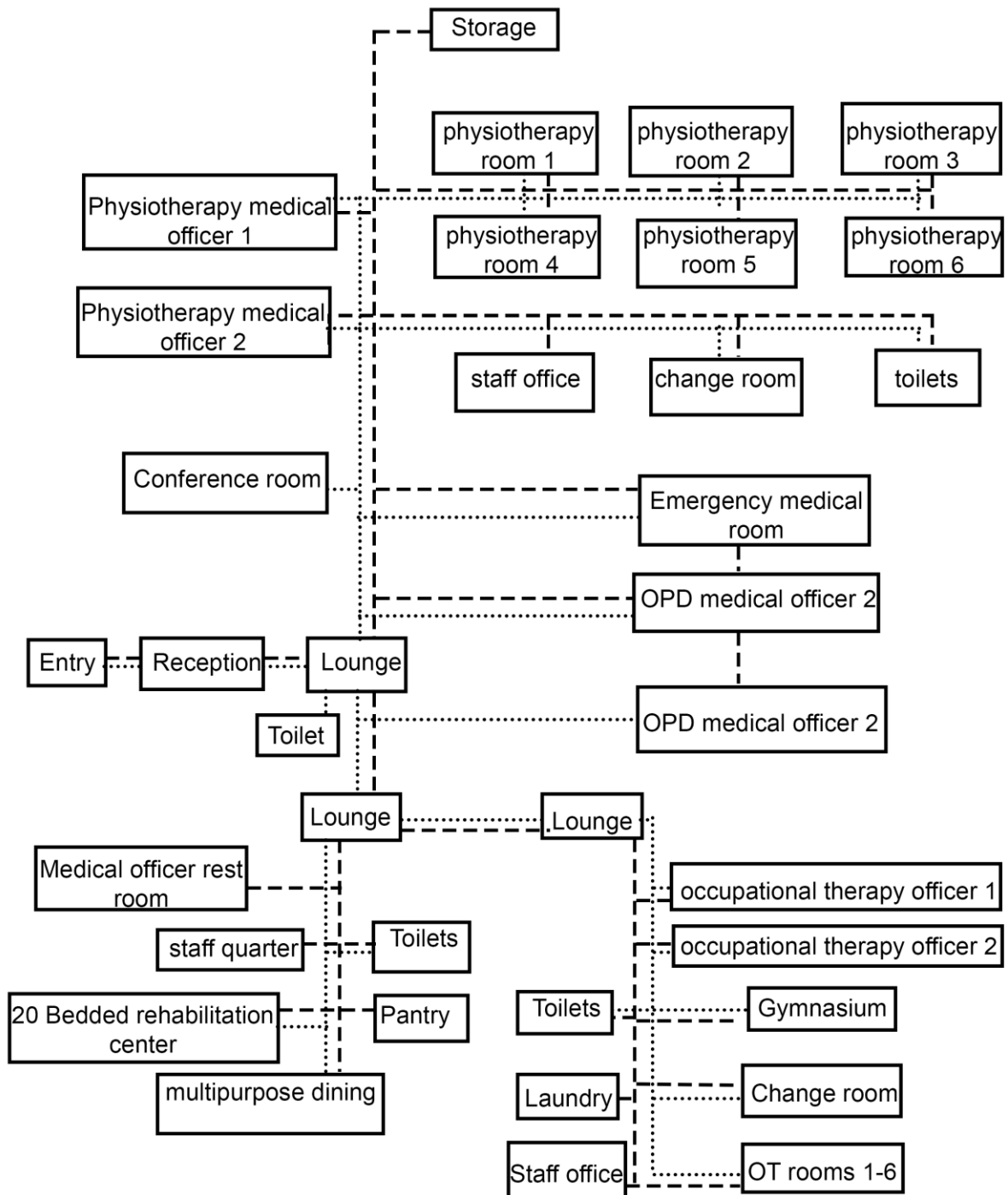


Figure 26: Medical services bubble diagram

Source: Author

5.2.1.3 Educational program

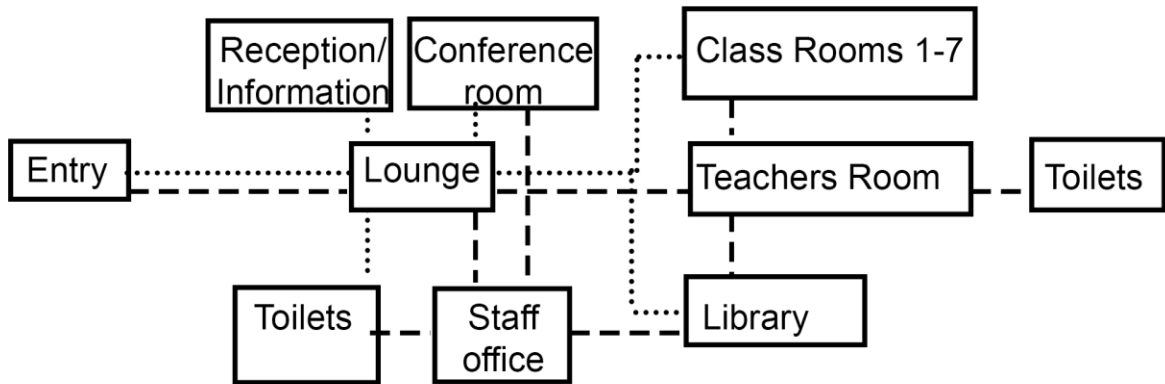


Figure 27: Bubble diagram of educational functions

Source: Author

5.2.2 Residence

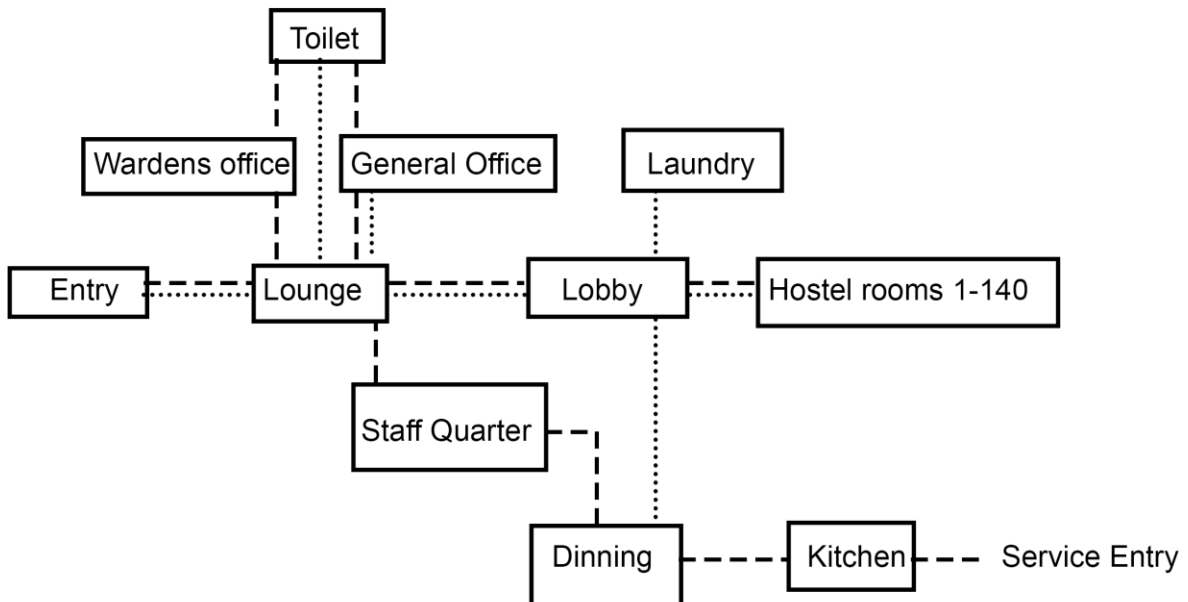


Figure 28: Bubble diagram of residence

Source: Author

5.2.3 Entertainment and Sports

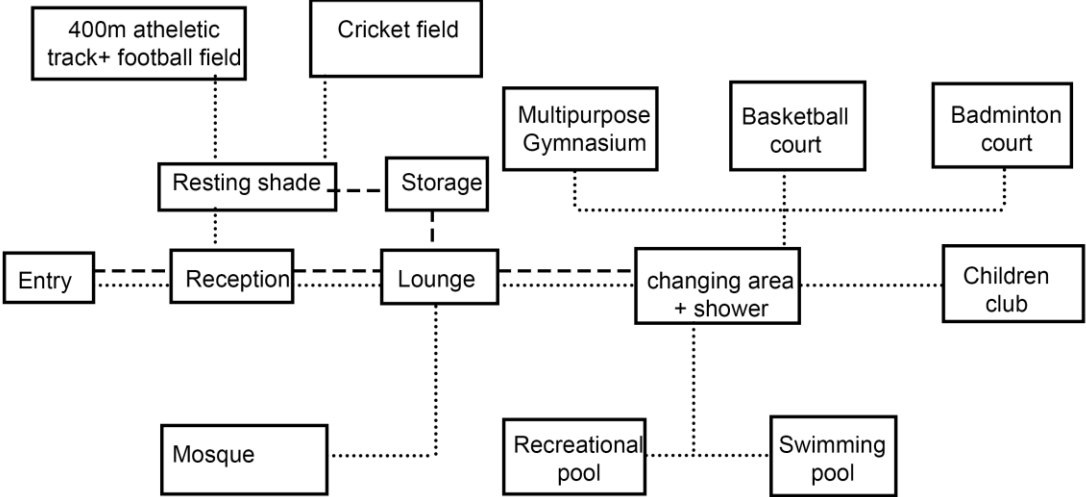


Figure 29: Bubble diagram of entertainment and sports

Source: Author

5.2.4 Bubble diagram suggested by Bonnet

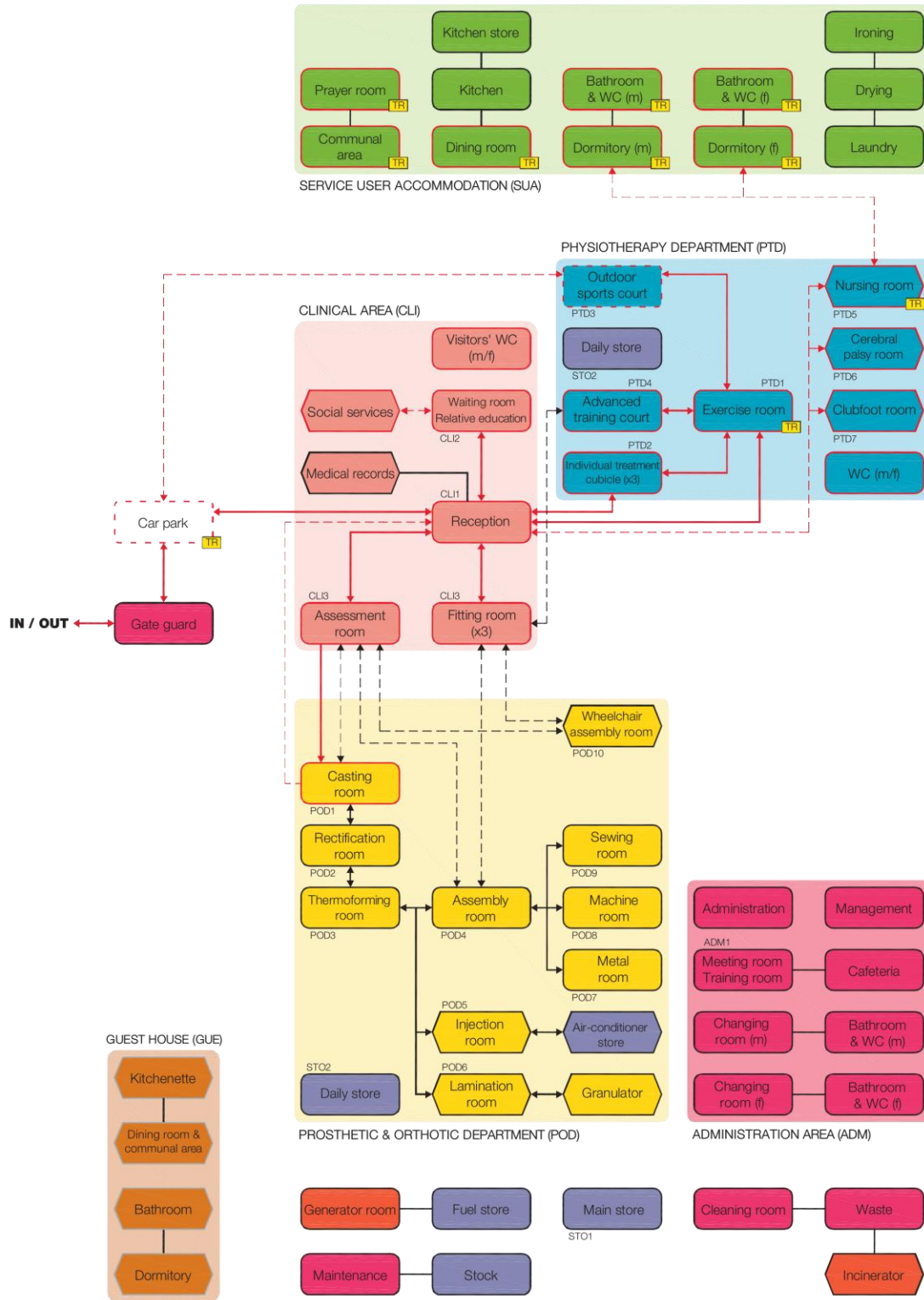


Figure 30: Bonnet's General bubble Diagram (Bonnet, 2014, p-108)

5.3 Schedule of functional requirement

CLASSIFICATION	FUNCTION	ACTIVITIES	Area (sft.)	Qty	Area (sft.)	REMARKS
Administration	Head's office	Interview, secretary	200sft	1	200sft	
	General office	Filling, typing	500sft	1	500sft	
	Storage		100sft	2	200sft	
	Human resource admin	Managing, secretary	200sft	1	200sft	
	Executive secretary	Managing	200sft	1	200sft	
	Conference room	Meeting	400sft	1	400sft	
	Security room	Guard resting	100sft	1	100sft	
	washroom		40sft	6	240sft	
	Reception, lobby, waiting		300sft	1	300sft	
	Auditorium	Gathering	9000sft	1	9000sft	
Health	Physiotherapy medical officer room	Diagnosis	150sft	2	300sft	
	Reception, lobby, waiting		300sft	3	900sft	
	Physiotherapy room	treatment	150sft	6	900sft	
	Laundry room		100sft	3	300sft	
	storage		100sft	3	300sft	
	OPD medical officer	Diagnosis	150sft	2	300sft	
	Staff office		300sft	3	900sft	
	Occupational therapy officer	council	200sft	2	400sft	
	Occupational therapy room	Training	150sft	6	900sft	
	Gymnasium	Training	500sft	1	500sft	
	20 bedded rehabilitation center	treatment	2000sft	1	2000sft	
	Canteen		400sft	1	400sft	
	Kitchen	Cooking	200sft	1	200sft	
	Medical officer rest room	resting	150sft	2	300sft	
	Emergency medical room		200sft	1	200sft	
	washroom		50/40sft	14	560sft	
	Conference room		300sft	1	300sft	
	Change room		50sft	6	300sft	
Education	Reception, lobby	Information	200sft	1	200sft	
	classroom	Training	400sft	7	2800sft	
	Teachers room	Resting	300sft	1	300sft	
	washroom		40/50sft	5	200sft	
	Conference room		400sft	1	400sft	
	Staff room		200sft	1	200sft	
	Library		2000sft	1	2000sft	
Sub total					29400sft	

CLASSIFICATION	FUNCTION	ACTIVITIES	Area (sft.)	Qty	Area (sft.)	REMARKS
Entertainment	400m Athletic track accommodating all events and a football field	Exercise	145500sft	1	145500sft	
	Resting shade for the athletes		1400sft	1	1400sft	
	Cricket field		126480sft	1	126480sft	
	pavilion	Sitting	3500sft	1	3500sft	
	Dressing and store		6550sft	1	6550sft	
	Gallery	Sitting	1400sft	1	1400sft	
	washroom		50sft	12	600sft	Male and female
	Ground staff room		200sft	1	200sft	
	50m and 8 lane swimming pool		4500sft	1	4500sft	
	Changing room		2000sft	2	4000sft	Male and female
	Recreational pool		1350sft	1	1350sft	
	Reception, lobby, waiting, circulation		5000sft	1	5000sft	
	Multipurpose gymnasium		13000sft	1	13000sft	
	Basketball court		4500sft	2	9000sft	
	Table tennis/badminton court		700sft	2	1400sft	
	Children club		3000sft	1	3000sft	
	Shower room		50sft	12	600sft	Male and female
	Mosque		3600sft	1	3600sft	
Subtotal without fields					59100sft	

CLASSIFICATION	FUNCTION	ACTIVITIES	Area (sft.)	Qty	Area (sft.)	REMARKS
Residential	Warden's office	management	150sft	1	150sft	
	General office	Information	200sft	1	200sft	
	Bedroom		400sft	140	56000sft	4-person bedroom
	Circulation		10000sft	1	10000sft	
	Officers unit		1200sft	5	6000sft	
	Staff unit		800sft	5	4000sft	
	Lift, lobby, security		1000sft	2	2000sft	
	Laundry		300sft	3	900sft	
	Dining		3000sft	1	3000sft	For 150 people
	Kitchen		1000sft	1	1000sft	
Incidental	Children play area					
	Internal vehicular road					
	Internal pedestrian road					
	Water body/island					
	Landscaping and other Amenities					
	Entry gate					
	Boundary wall					
	Electrical sub-station, Generator room and pump house					
Subtotal without incidental					83250sft	

CHAPTER 06: Design development

6.1 Zoning

6.2 Considerations

6.3 Circulation

6.4 Plans

6.4 Sections

6.5 elevations

6.6 Perspective views

6.1 Zoning

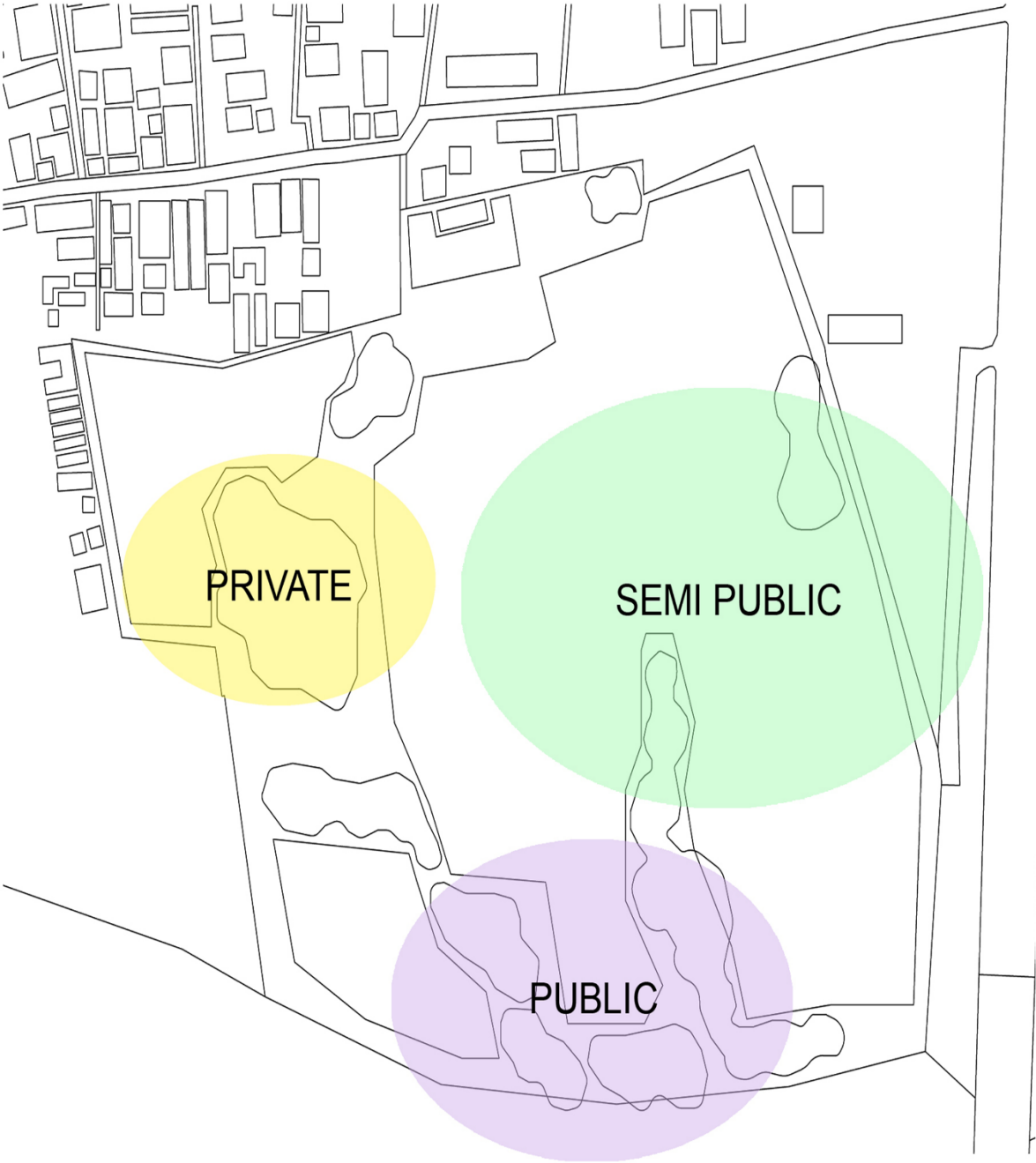


Figure 31: Zoning (Source: Author)

6.2 Considerations

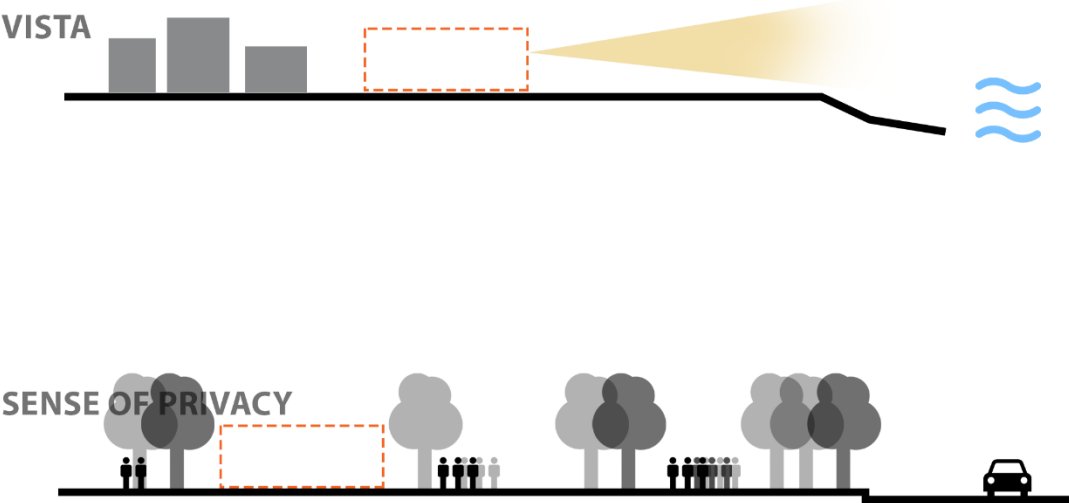


Figure 31: Considerations (Source: Author)

6.3 Circulation

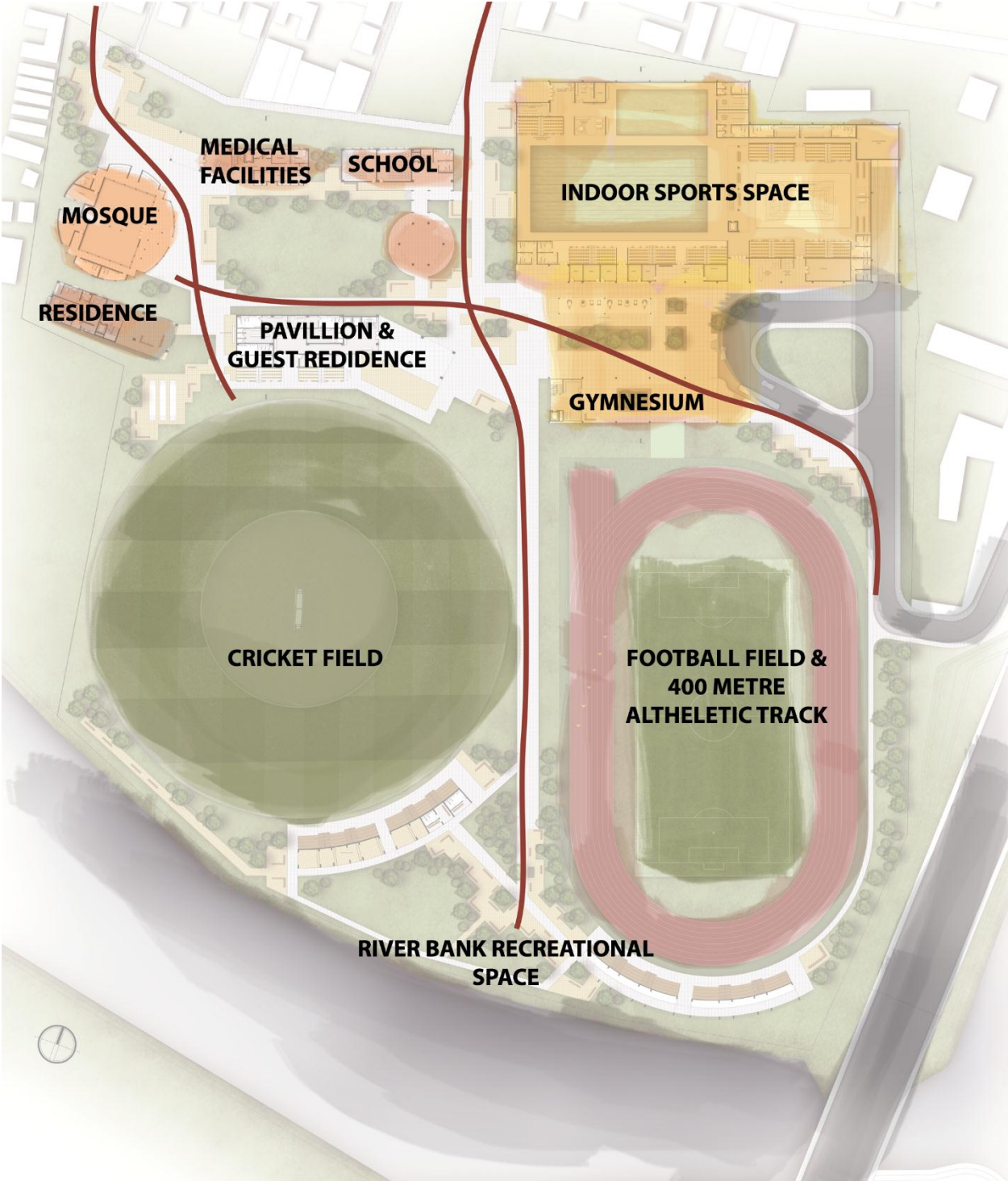


Figure 32: Circulation (Source: Author)

6.4 Plans

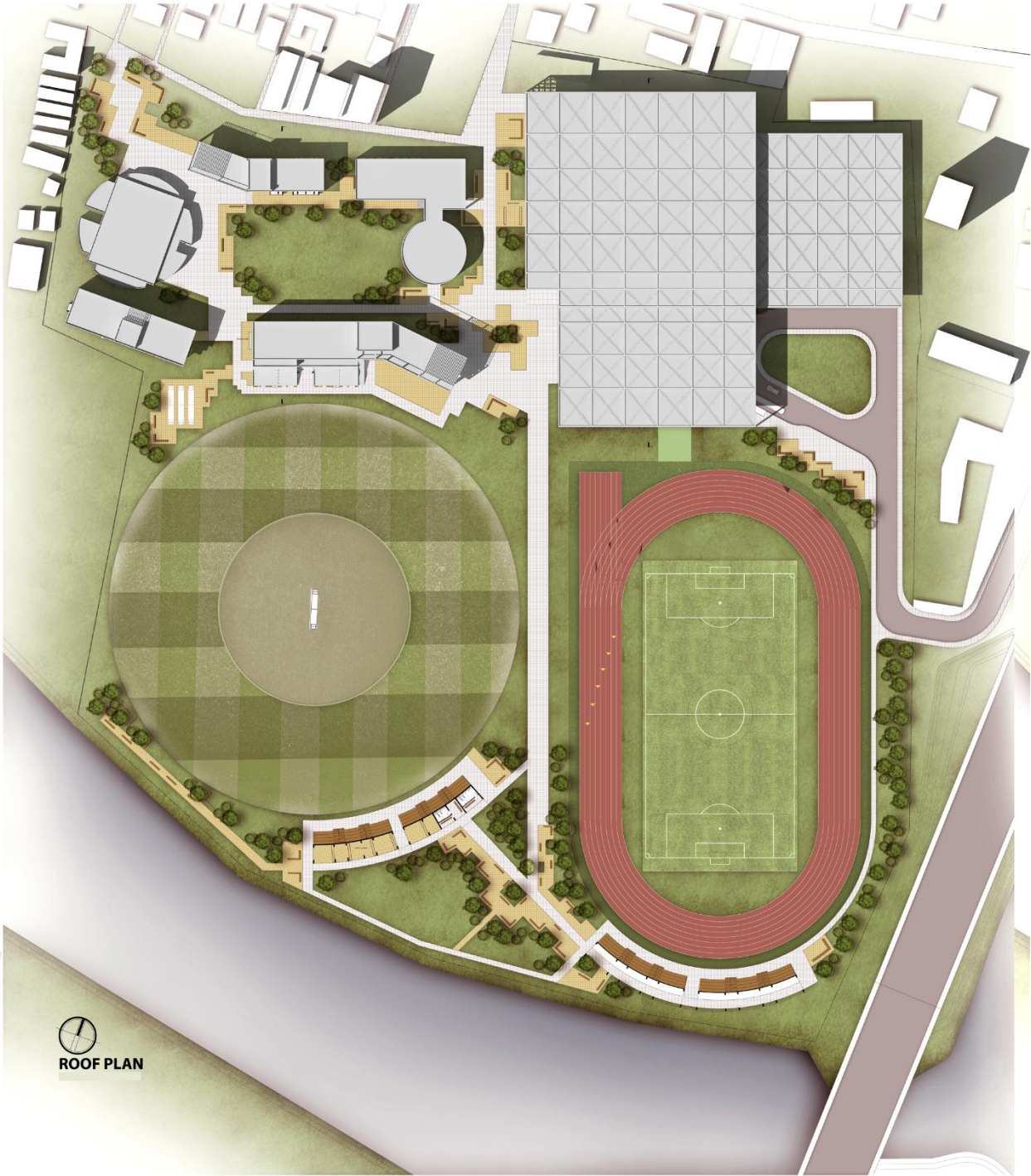
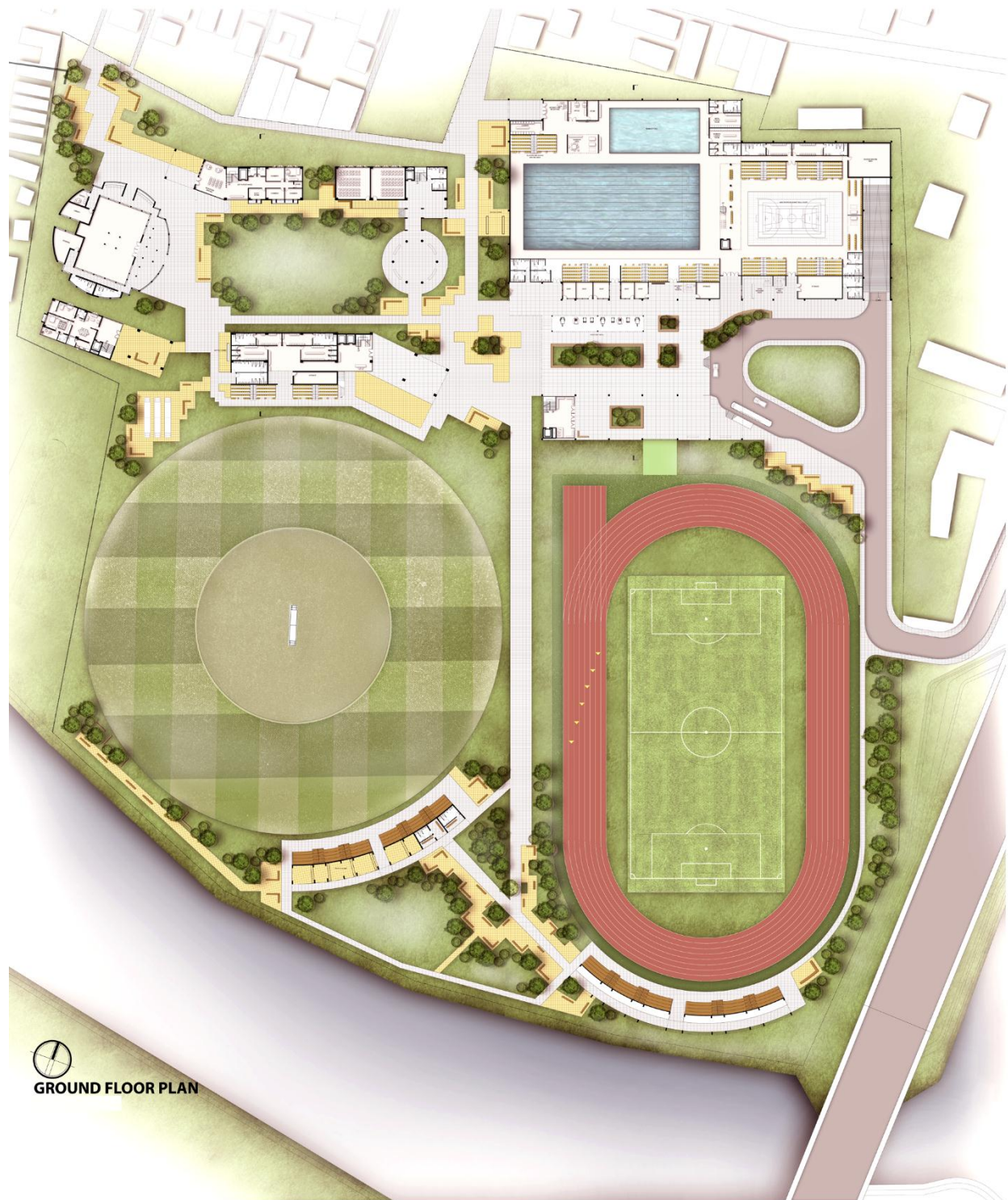


Figure 33: Roof plan (Source: Author)




GROUND FLOOR PLAN

Figure 34: Ground Floor plan (Source: Author)

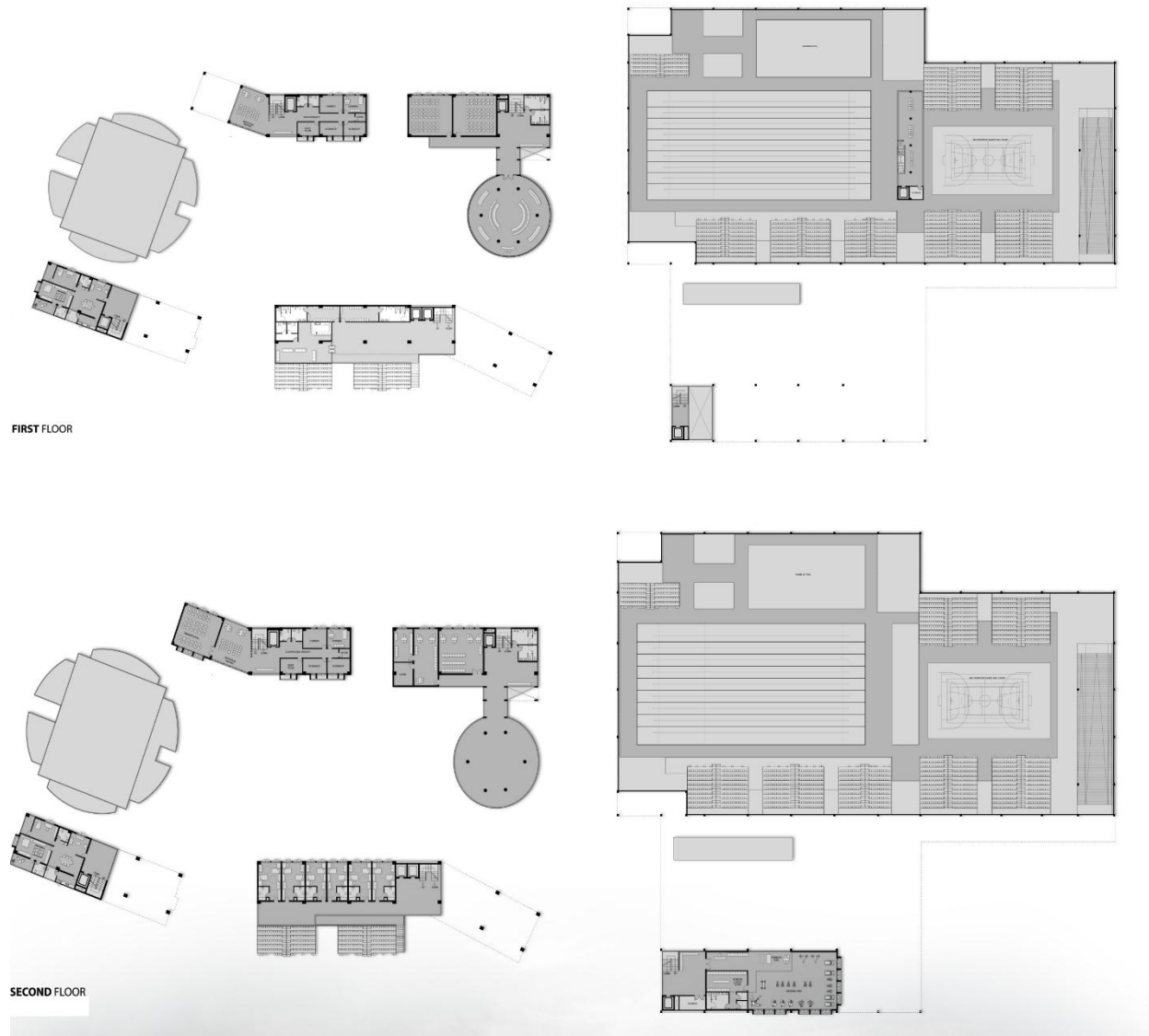
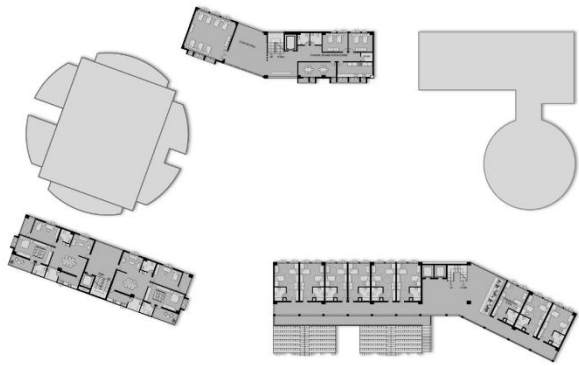
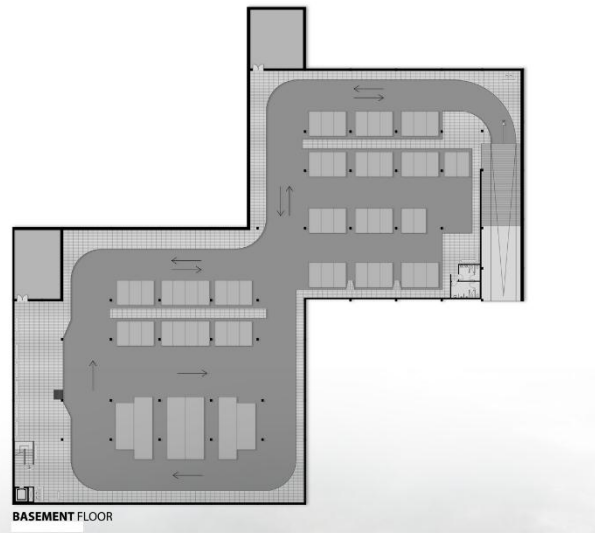


Figure 35 & 36: First and Second Floor plan (Source: Author)



THIRD & FORTH FLOOR



BASEMENT FLOOR

Figure 37 & 38: Third, Fourth and Basement Floor plan (Source: Author)

6.4 Sections



Figure 39 & 40: Sections (Source: Author)

6.5 elevations

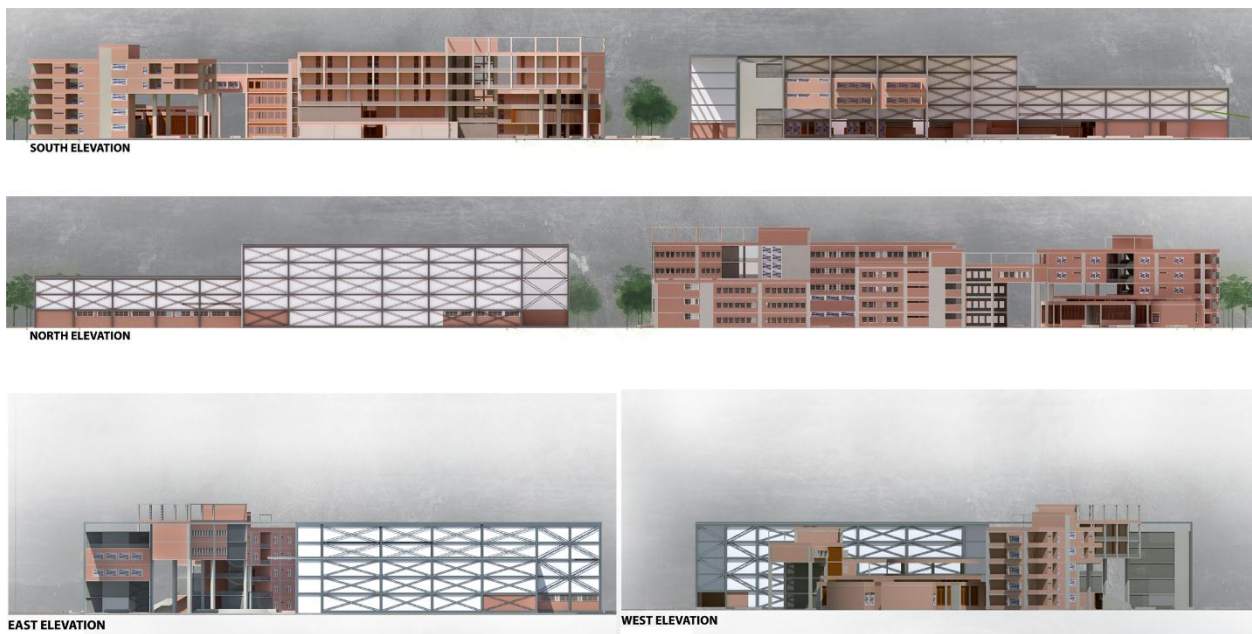
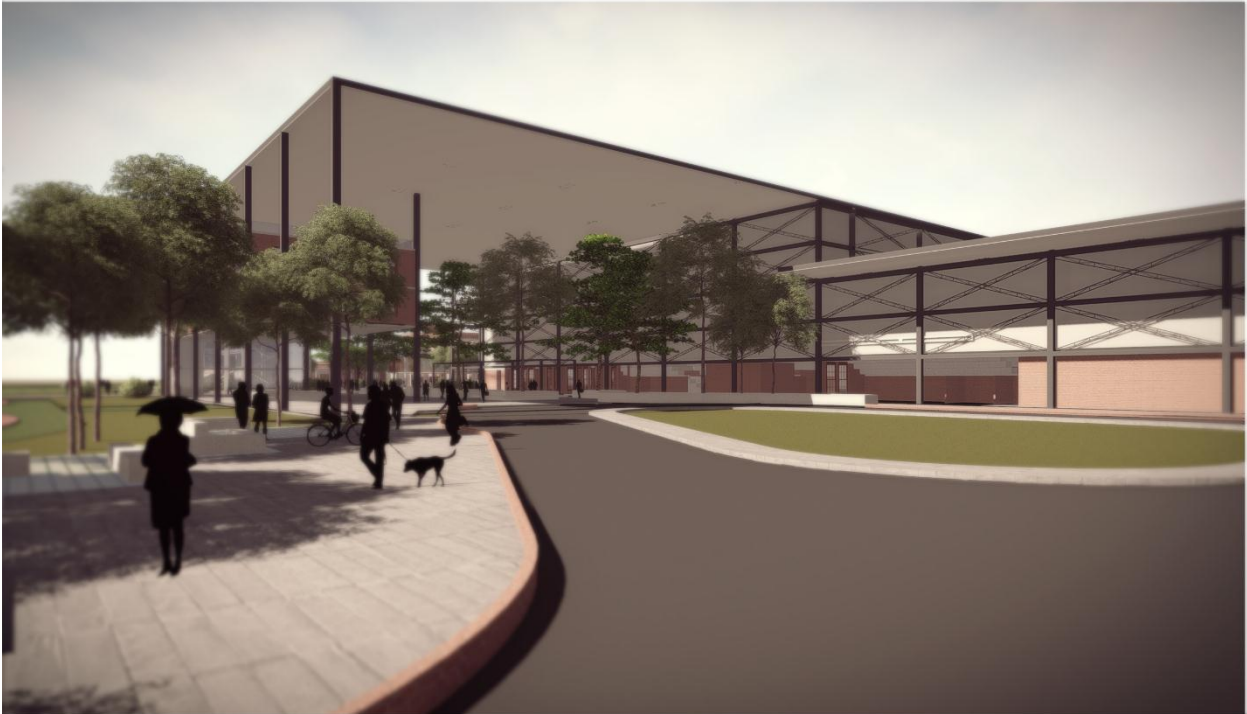


Figure 41: Elevations (Source: Author)

6.6 Perspective views





Conclusion

Specially abled persons need rise to good with appreciate An preferred life for enjoying essential necessities and also sports. Previously, Bangladesh handicapped individuals are mostly denied of education, medicinal support, and social help Also sports offices. Because of insufficient offices handicapped persons need aid still battling for nature instruction and creating social abilities. Because of insufficient approachability handicapped persons ended up socially bound with their space differentiated from Group. This keeps the ordinary advancement from claiming handicapped persnickety concerning illustration a tyke Furthermore actually as grown-up. This paper is mostly centered on widespread approachability about especially abled persons, also interior and exterior spaces suitable for especially abled persons.

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