

KHULNA DIVISIONAL JAIL, KHULNA



Inspiring Excellence

SUBMITTED BY
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"Remember Red, hope is a good thing, maybe the best of things, and no good thing ever dies."

Andy (Character)

"Shawshank Redemption" the movie (1994)

Abstract

The crime rate of Bangladesh is increasing rapidly , so new jails are being made to address this massive loads on the prison cells. The central jail located in Dhaka Lalbag is relocated to Keranigonj due to the incapability of the existing infrastructure to carry the heavy pressure. Like Dhaka Central jail, a new divisional jail has been proposed in Dumuria of Khulna to disperse the pressure on the existing Khulna division jail as the capacity of it is very low . This Khulna jail will have the capacity to accommodate 2000 prisoner for now and later it will be extended to hold a maximum capacity of 4000 prisoner in total. This paper reflects on the whole process of how Khulna central jail can be designed on the proposed site addressing the program and required functional details. The process contains the details of how the project has been rationalized to its context , fixation of design objectives, program generation, case studies, zoning of site having a basic concept of retaining the topographic uniqueness, characteristics of the nature of surrounding areas and serenity of the proposed site. In many cases people think prison means a place where the criminals get punished because of their wrong doings and they are being isolated and separated from the society. This project aims to create a maximum security prison where the prisoners can improve themselves through various activities and when they go back to the society, they will be able to cope up with the society. The jail is envisioned more as a rehabilitation and correctional facilities rather than a punishing machine, that will help the guilty prisoners to remorse for their wrong deeds in isolation and will prepare them with skills and good morale when they go back to the society as a changed person.

Keyword : Khulna , divisional jail , rehabilitation, correction, skill development.

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CHAPTER 1 Introduction

1.1 Project Specification

Project name	Khulna central jail
Client	Government of Bangladesh
Address	Chalk Asan Khali, Dumuria, Khulna
Site area	30 Acres of land

1.2 Background of the Project

Jail was once known as holding cells, the prisoners were kept inside those holding cells to wait for their verdicts and punishments. Later the whole system changed and those holding cells became prison cells, as the criminals were kept inside those cells for a certain time period to complete their punishment in isolation.

The crime rate of Bangladesh is increasing day by day, as a result the prisons are getting flooded. The population density and the economic growth of our country is creating massive problem and increasing the rate of crime. The new Dhaka Central Jail in Keranigonj is built as the old jail was unable to address the increasing number of prisoners. Because of increasing number of prisoners, the government of Bangladesh has taken initiatives to built divisional central jails in all divisional cities, and Khulna is one of them.

Khulna central jail is currently at proposal state. The crime rate in Khulna has increased manifolds in last few decades. The criminals of different areas of Khulna division are usually kept in Divisional jail, where the capacity is 700 only. So, in different divisions many central jails are being proposed so that the criminals can be dispersed to those places. The capacity of the new central jail is around 1000 and with time it will be expanded to the capacity of 2000 prisoners in total.

1.3 Aims and objectives of the project

The Khulna Divisional Jail is envisioned to reduce the massive pressure on the existing jail infrastructure. The capacity of the current divisional jail is about 700, so, the prisoners are usually transferred to other divisional and district jails to keep pressure on jail capacity under control. The capacity of the new central jail will be 2000 at its peak state, where infrastructure to accommodate 1000 will be build within 2020 and provision for future expansion to accommodate more 1000 will be kept in design and in land. The main aim of the project is to create a good capacity self-sustaining prison that will correct the prisoners, will give them vocational training and will engage them to earn for the prison to reduce the pressure on usage of government tax money for maintenance of the prison. The site is located at a good distance from the main city because of maintenance of the security of the prison. The design goal is to create a space where the prisoners can improve themselves by various activities so that after going back to the society to lead a normal life, they can cope up with the outer environment and can become self-dependent.

1.4 Given Program

Design program of Khulna Divisional jail is similar to all other divisional jails of Bangladesh. The **Bangladesh Jail Code 1986** is the guiding set for design of the various functions of the divisional jail. The program has various clusters in terms of gender, age, social strata, types of detainees/criminals etc. The very basic of the programs are listed below:

- Women Detainees Barrack
- Women Prisoner Barrack
- Male Detainees' Barrack
- Male Prisoner Barrack
- Juvenile Block
- Division Awarded Detainees' / Prisoners' Block

- Kitchen Blocks
- Toilet Blocks
- Daycare Center for Children
- Dining Rooms
- School
- Class One Officers' Office Block
- Advising Area
- Record Area
- Search Area
- Deputy Jailer's Area
- Bail Area
- Boundary Wall
- Visitors' Area
- Work Shed
- Prayer Facilities
- Library
- Hospital
- Saloon
- Laundry
- Perimeter Wall
- Gallows
- Wheat Threshing Room

CHAPTER 2 Site Appraisal

2.1 Environmental Considerations

The site is located in Chalk Asan Khali of Dumuria in Khulna district. The site is located beside the Jessore - Khulna highway bypass road. The site is situated at a good distance from the Khulna city but easily accessible because of its vehicular connectivity. The site surroundings are mainly covered with green lands and water bodies. The road in front of the site is around 30 feet . The site is very quiet, surrounded by gher and green, good road communication, out of the disturbance of the main city .

2.2 Site and Surrounding Plans, Photographs, Topography

The site is about 30 acre, but, the proposal allocates 15 acres for residential zone and administrative facilities. For the prison portion, only 15 acre of the total site will be demarked and used. At the north side of the site Khalishpur node is located and 7km south from the site Mostafapur junction is located. On the west side of the site, main open fields and shrimp fields and hatcheries are located and there is also a residential block on far west side of the site. On the north west part of the site, Chalantika fish market and a general hut is also located which overflows mostly in two days in a week .



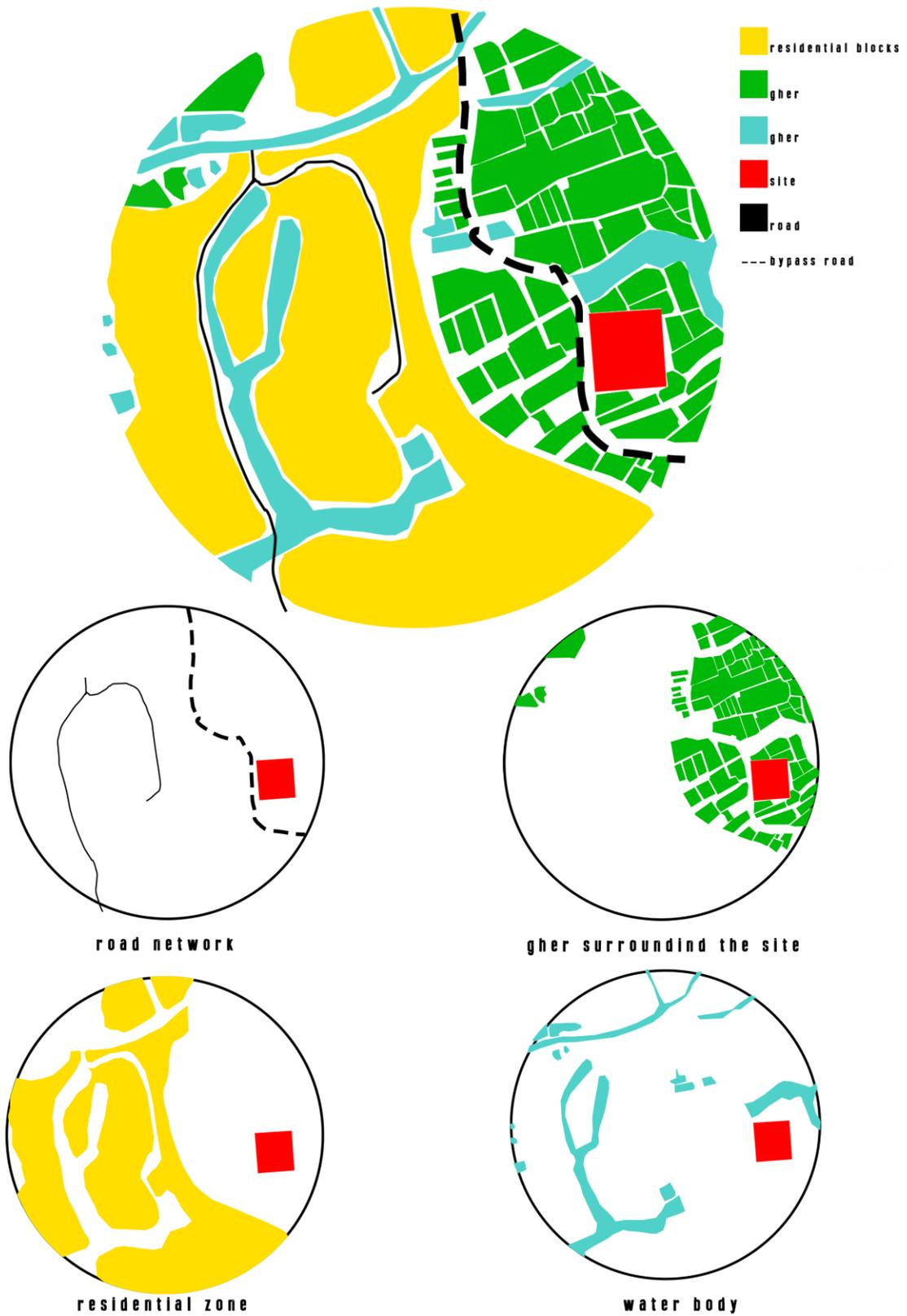


FIGURE 3.1: SITE SURROUNDINGS (source : author)

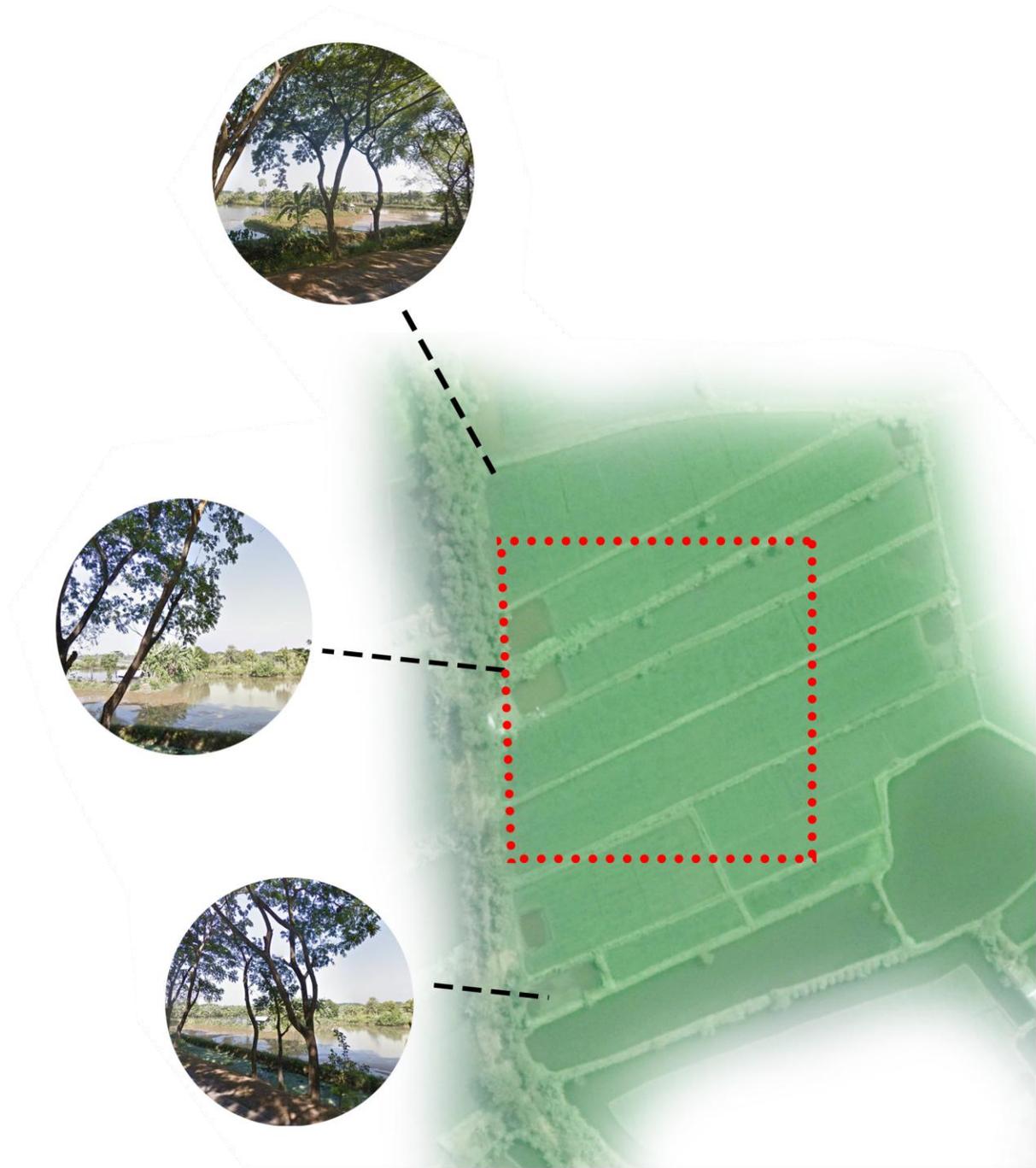


FIGURE 3.2 : SITE IMAGES (source : AUTHOR)

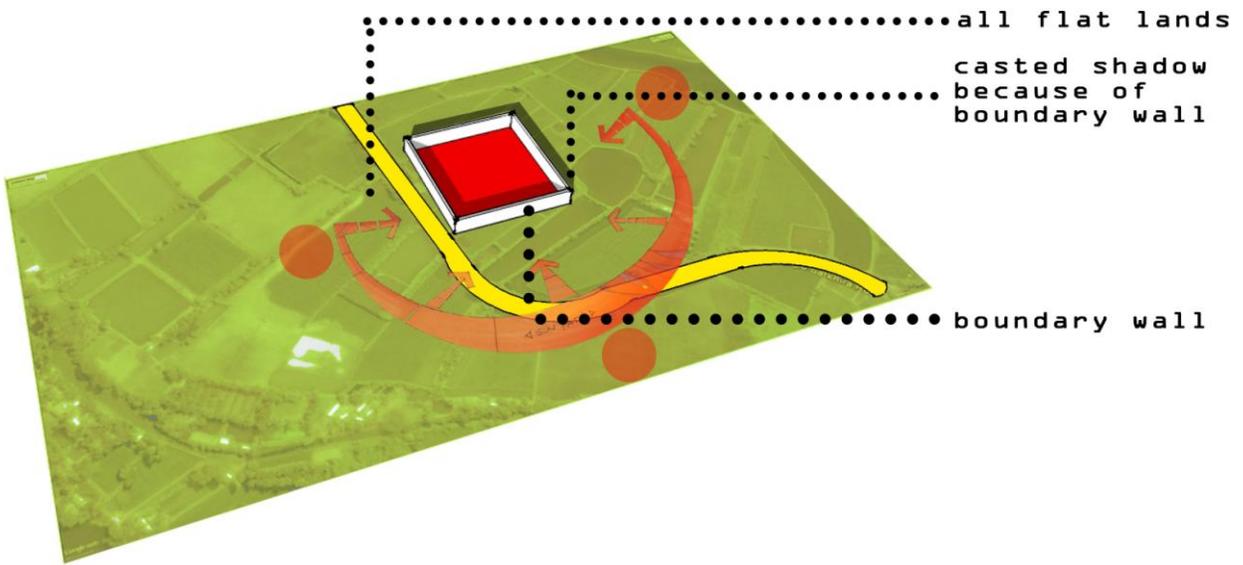


FIGURE 3.3 : SHADOW ANALYSIS (source :author

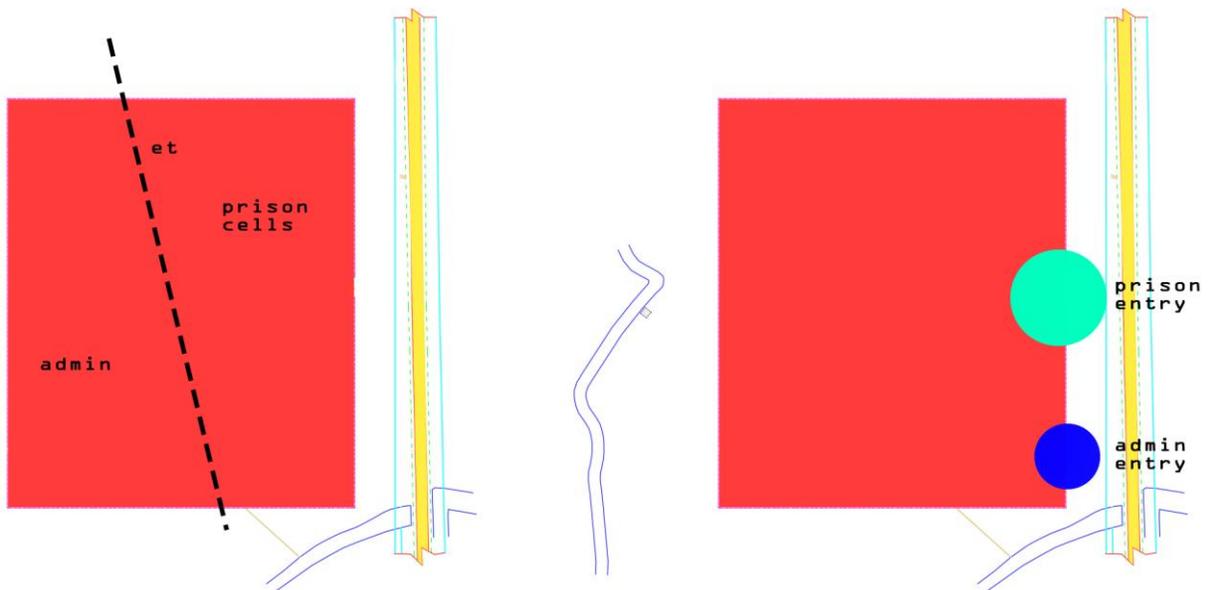


FIGURE 3.4 : SITE ANALYSIS



2.3. Climatic Overview

According to Climate-data organization, Khulna's climate is classified as tropical. The Summers here have a good deal of rainfall, while the winters have very little. According to Köppen and Geiger, this climate is classified as (Aw) tropical wet and dry or savanna climate. The average annual temperature in Khulna is 26.1 °C. The average annual rainfall is 1736 mm (Climate-data Organization, Khulna, 2016).

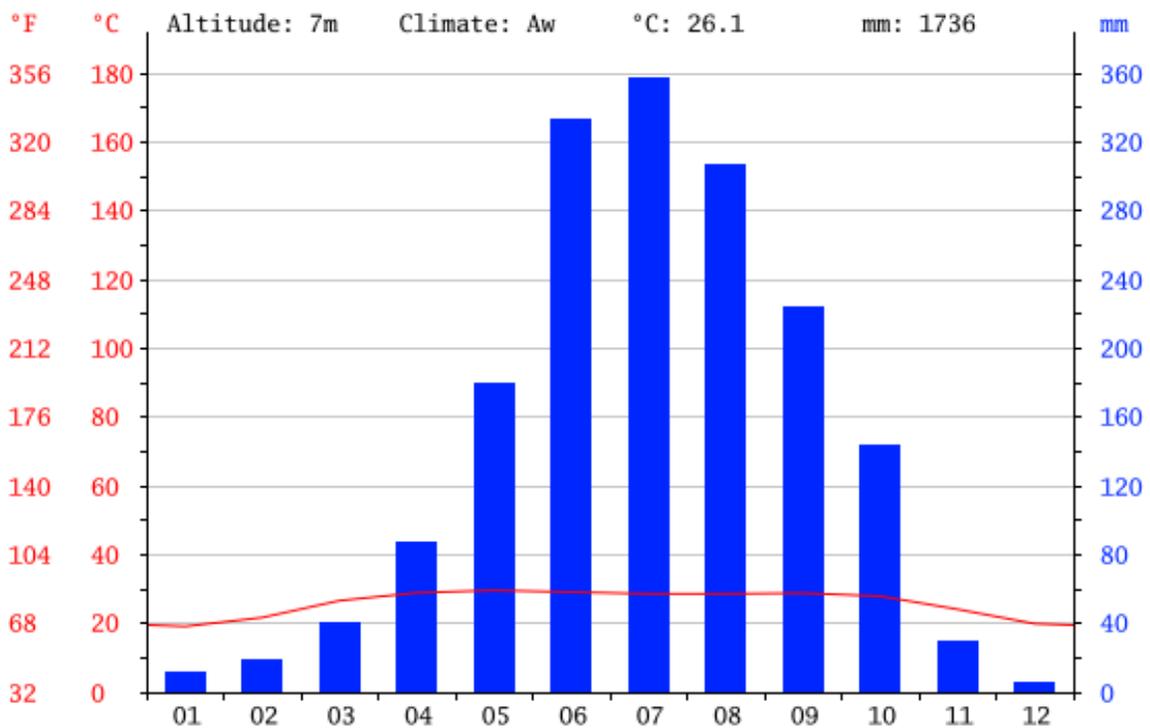


Figure 2.6: Climate graph (source: Climate-data org. retrieved from: <http://en.climate-data.org/location/3943>).

Precipitation is the lowest in December, with an average of 6 mm. Most of the precipitation here falls in July, averaging 357 mm (Climate-data Organization, Khulna, 2016).

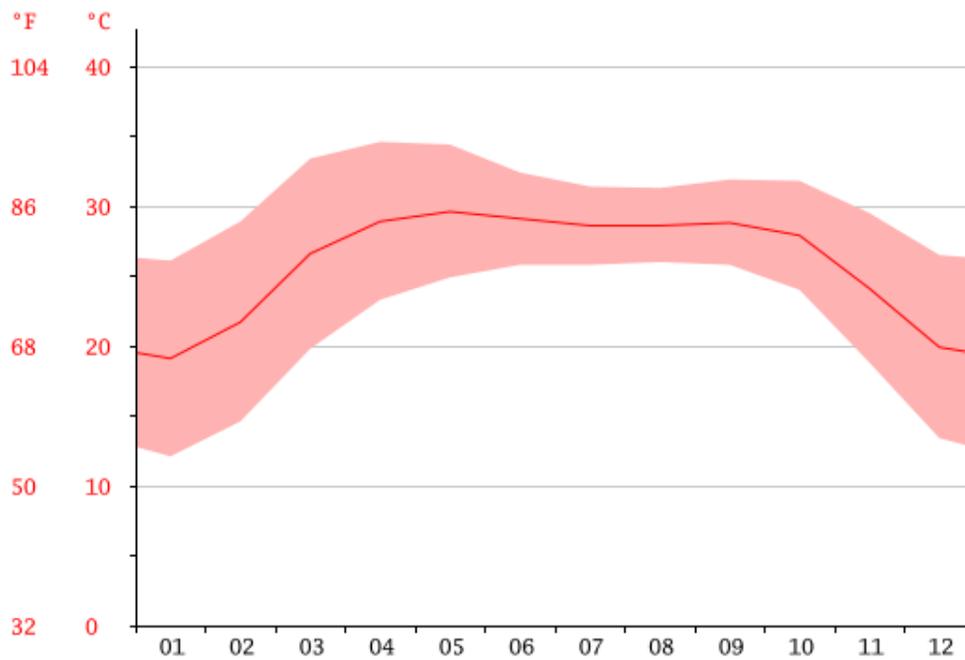


Figure 2.7: Temperature graph (source: Climate-data org. retrieved from: <http://en.climate-data.org/location/3943>).

At an average temperature of 29.6 °C, May is the hottest month of the year. January is the coldest month, with temperatures averaging 19.1 °C (Climate-data Organization, Khulna, 2016).

month	1	2	3	4	5	6	7	8	9	10	11	12
mm	12	19	40	87	179	333	357	307	224	143	29	6
°C	19.1	21.7	26.6	28.9	29.6	29.1	28.6	28.6	28.8	27.9	24.1	19.9
°C (min)	12.1	14.6	19.8	23.3	24.9	25.8	25.8	26.0	25.8	24.0	18.8	13.4
°C (max)	26.1	28.9	33.4	34.6	34.4	32.4	31.4	31.3	31.9	31.8	29.5	26.5
°F	66.4	71.1	79.9	84.0	85.3	84.4	83.5	83.5	83.8	82.2	75.4	67.8
°F (min)	53.8	58.3	67.6	73.9	76.8	78.4	78.4	78.8	78.4	75.2	65.8	56.1
°F (max)	79.0	84.0	92.1	94.3	93.9	90.3	88.5	88.3	89.4	89.2	85.1	79.7

Figure 2.8: Climate table (source: Climate-data org. retrieved from: <http://en.climate-data.org/location/3943>).

Between the driest and wettest months, the difference in precipitation is 351 mm. Throughout the year; temperatures vary by 10.5 °C. Useful hints about reading the climate table: For every month, you will find data about precipitation (mm), average, maximum and minimum temperature (degrees Celsius and Fahrenheit). Meaning of the first line: (1) January, (2) February, (3) March, (4) April, (5) May, (6) June, (7) July, (8) August, (9) September, (10) October, (11) November, (12) December (Climate-data Organization, Khulna, 2016).

2.4. SWOT Analysis

Strength

- Situated on a bypass road
- Surrounding with balanced green
- No tall building are situate around the site

Weakness

- Far from the divisional jail

- Narrow road
- Electric pole went through the site

Opportunity

- Continuous natural wind flow could be gained
- Creating a refreshing environment

Threats

- located in highway
- located in a developing zone
- located in possible residential zone

CHAPTER 03 LITERATURE REVIEW

3.1 REVIEW BRIEFS

Reza A. Mohseni has written a paper titled "The sociological analysis of prison: Costs and consequences" in which he has focused on how all angles of the prisoner is considered when one is imprisoned, which incorporates physical preparing, workability, everyday conduct, moral quality, interest and abilities. Jail is more disciplinary than school, workshop or military institute that dependably ensures a sort of ability and is all disciplinary with unending activity. The paper (Mohseni,2012) has certain objectives; but in total it is focused on giving punishments. In the research paper, the key focus has been to make others realize that crime cannot be reduced by changing a prisoner into law abiding person but it can be done by not letting one re-offend like the previous time, when they go back to social life after serving their sentences/verdicts. All of these supports that a prison has a far greater usage besides giving punishment for their wrong doings; it primarily focuses on decreasing crime rate by keeping them isolated from the society. Goufredson and Hirschi (1990) believed that by sentencing one a long prison time cannot improve or reduce the crime rate of a society as most of the criminals usually have poor self control and the tendency of gaining short satisfaction. Here the main focus was to show locking someone up doesn't improve his/her behavior but if revenue can be collected by their works it can be beneficial for both the prisoner and the society as the sociologists think that most of the crimes begin with poverty.

A blog titled "How to build for success: prison design and infrastructure as a tool for rehabilitation" was also studied as a part of the design process to understand the principles of designing prison. Here the whole writing tried to focus on creating a positive space where the prisoners have the option to change by gradually improving their skills. In this blog (López, 2014) it is said that a good neighborhood should be created along with the prison facilities where they can improve their social communication skill and learn to cope up with others. On the other hand safety, security should also be maintained and the circulation should be clear within a prison system . The whole prison should always be monitored by the guards and every single movement should be noted inside the prison , so to keep the transparency between the observer and the observed group the circulation is a vital fact , so while designing a cell all those key points should become clear and throughout the circulation the whole transparency which lies under a prison will come out. In the on-net write-up, it is also said that in prisons the health factors are not maintained properly ,so health issues should always be monitored in a daily basis so that full safety on health remains prioritized and if one stay healthy and fruitful it will keep him/ her active and give them the spirit to spread positive vibe. It is also said that the environment inside the prison cells should be more like residential type rather than institutional one.

Bangladesh has one of the highest crime rate in the Indian sub-continent. The highest crime rate was found in Jhalokathi (438.60 per lakh). Brahmanbariya (321 per lakh) Barisal(318 per lakh) and Dhaka (316 per lakh) are also in the same path. In this report we can see that the costal and commercial areas have bigger crime rate than other areas. As in this report it is shown that the costal areas are the business and transit points, so the crime rate also gradually increase with its surrounding environment. Khulna is also a coastal area where the crime rate is also increasing day by day and on the other side our capital city Dhaka is the center of the country. Every year lots of people migrates to this city with a view to lead a better life but due to the compress and compact situation it is getting out of control and the crime rate is increasing. As a result, the capacity of the central jail is shrinking so the government shifted the central jail of

Dhaka from Lalbagh to Keraniganj. Khulna is a coastal city like Barisal where the crime rate is also high, so a massive load is being casted on the divisional jail, and as a result the government proposed a new divisional jail in Dumuriya. In all these prisons, government is keeping additional options to enlarge the capacity as the crime rate is increasing rapidly. Compared to that, the northern part of Bangladesh contains a very less crime rate like Noagoan (56 per lakh), Kurigram (71 per lakh) , Lalmonirhat (85 per lakh) , Panchagar (94 per lakh). 34 districts have the crime rate of 100-199 and 19 districts crime rate are 200-299 , other four districts crime rate is 300-399 . Jhalokathi is the only district which has the crime rate above 400 (Crime Index Bangladesh 2007).

3.2 LIMITATIONS

There are very inadequate number of articles, research papers or references which could have focused on the design of the divisional jail. Thus, for design of this complex, more dependency will be on jail codes, reference plans and national building rules instead of literature thoughts. Also, study found from case studies will suffice to bypass the limitations of literature reviews.

CHAPTER 04 CONTEXTUAL ANALYSIS

4.1 Geographical Context

The site is situated in an agricultural land and in the east side of the site is a developing residential and commercial zone which will gradually increase and put an effect on the jail and its surroundings. The site is 8 feet lower from the bypass highway and mainly shrimp hatcheries are found in the both side of the existing road which connects with Mostafapur junction. Khulna university is located in the south side of the site.

The main access of the site is located in the east part, which is now 40' width but later it will be converted into a 60 feet wide road. Behind the site there is a canal called "Kader Khal", by which the whole site is surrounded so there is a premade security layer which was later penetrated in the design.

The surrounding of the site has a clear and wide open view which is not hampered by any objects or green patch so for ensuring the security of the prison it was a big advantage. In the north side of the site there is a mosque situated on the other side of the highway, so the residential zone was placed in the north side of the site.

4.1 Urban Context

Asian city housing project is being developed in the south side following that highway and many residential zones are found in a scattered way. the east side contains lots of commercial buildings and it is gradually heading toward the west part which includes the jai site.

CHAPTER 05 CASE STUDIES

5.1 Local & International Case Studies

5.1.1 Keraniganj Central Jail

5.1.1.1 Background and history

The jailing system is advancing and taking an enhanced look as the days are passing by. Once upon a time jail was only known as holding cells but now the whole system has changed as it tends to not only impersonate a prisoner but also create a work-shed where he/ she can become self independent and while going back to the society they can create their own identity by forgetting their past.

Due to the heavy load on the central jail situated in Lalbagh, government has decided to shift the central jail to 8 km away from the Dhaka city. The site is around 198 acres and it has a capacity over 7000 prisoners . The new central jail not only has the biggest capacity but also the work-shed is the biggest in our country . Considering the proportion of the work-shed created within the boundary it will create a massive opportunity to get all those prisoners to get on their own feet.

5.1.1.2 Location

The new jail is located near 250 meter far from the Dhaka Mawa highway.

5.1.1.3 Project Description

The eight structures have been named the same as those in the old correctional facility. The six-story structures have five rooms on every floor and a toilet. Every room will house 12 prisoners. Six of the structures are for prisoners under trial – Korotoa, Karnaphuli, Motihar, Padma, Meghna and Jamuna.

There are four high security cells - Banaful, Bakul, Shapla and Surjomukhi. High risk prisoners, for example, activists will be kept in these. Each room has the capacity of only one prisoner. The new jail will likewise have a cell for adolescent prisoners named Surma and a VIP cell named Chompakoli.

For security purpose there are 17 six storied guard building and a 4 storied building for deputy jailor , 3 storied building for jailor , and there is also a barrack named Durjoy with the capacity to hold 400 guards.



FIGURE 4.1 : KERANIGANJ CENTRAL JAIL MASTER PLAN

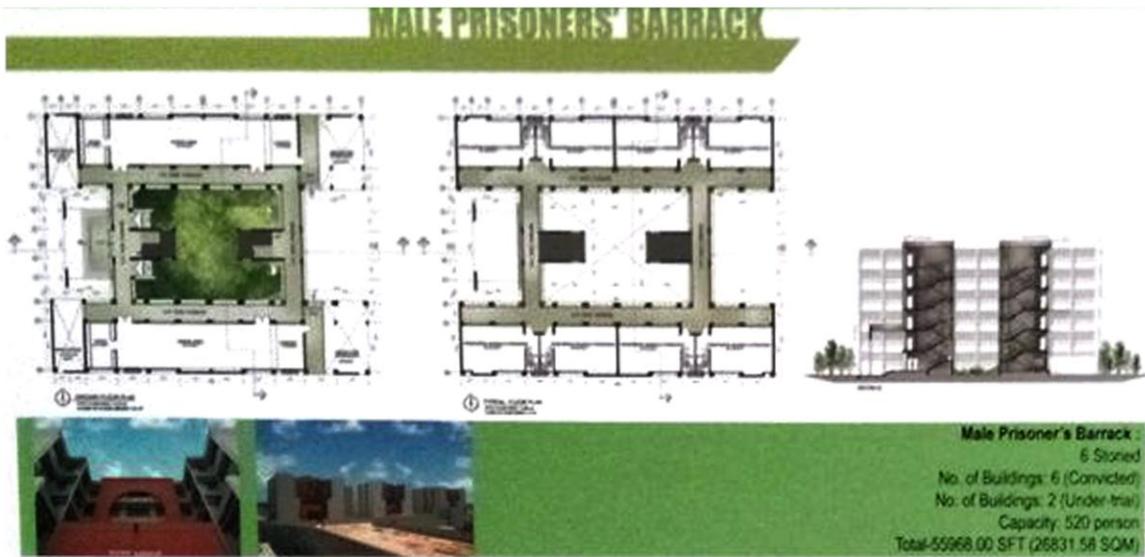


Figure 4.2 : Male prisoners barrack



Figure 4.3 : Mentally Disableds ward

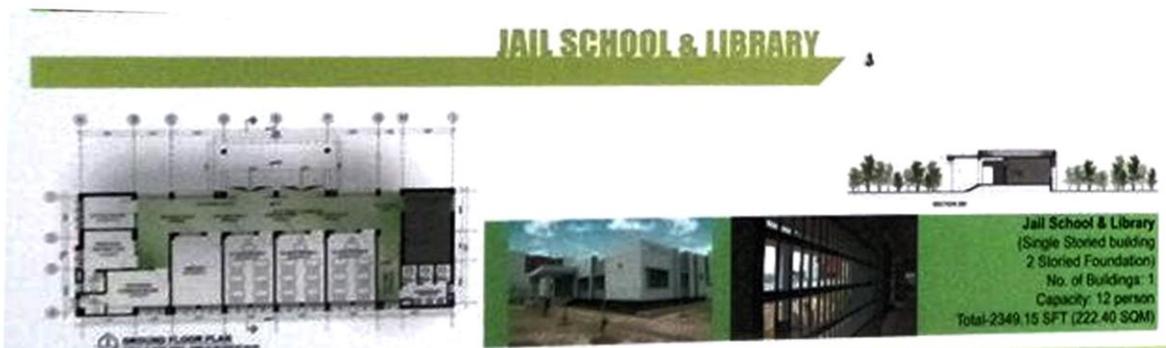


Figure 4.4 : Jail School Library



Figure 4.5 : Adolescent ward

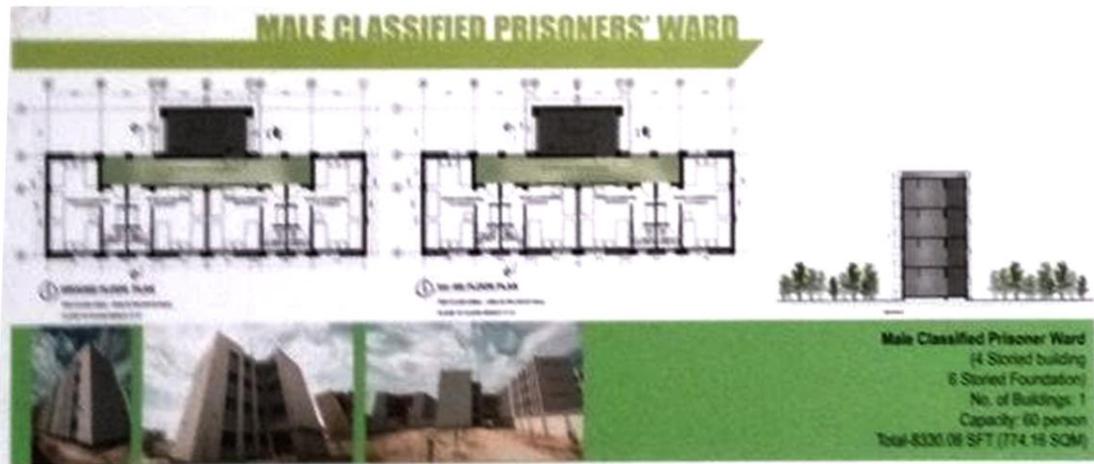


Figure 4.6 : Male classified prisoner ward

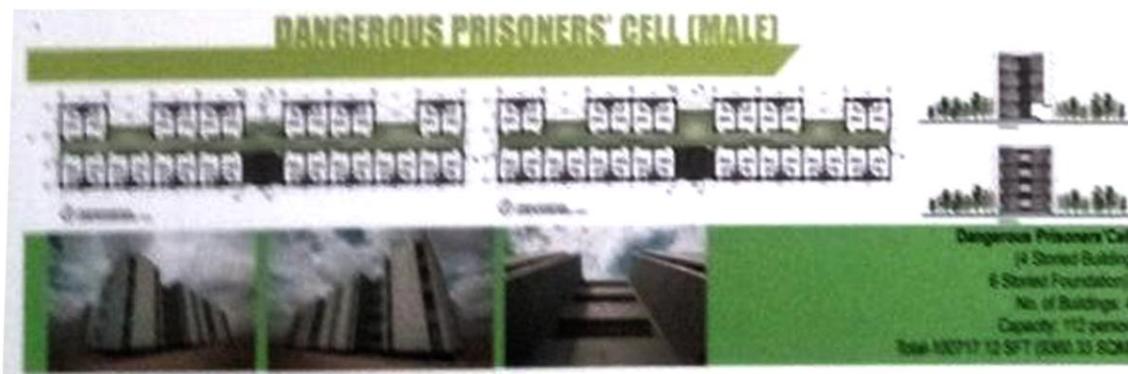


Figure 4.7 : Dangerous prisoners cell

5.1.2 Halden Prison

Architects **HLM Architects & Erik Møller Arkitekter**

Location **Halden , Norway**

5.1.2 .1 Project Description

Halden prison is known as the most humane prison in the earth. This project was a transaction point between the punishment system of the previous and liberal approach toward the prisoners , though some of the deadly prisoner often take advantage of these facilities . The whole project stands on creating a complete free and friendly approach toward the prisoner . That is why it is called the most humane prison in this world.



FIG 5.1.2.A - Halden prison

Retrieved from : <http://www.archdaily.com/154665/halden-prison-erik-moller-arkitekter-the-most-humane-prison-in-the-world/untitled-7-3>



FIG 5.1.2.B - Halden prison

Retrieved from : <http://www.archdaily.com/154665/halden-prison-erik-moller-arkitekter-the-most-humane-prison-in-the-world/untitled-1-22>



FIG 5.1.2.c - Halden prison

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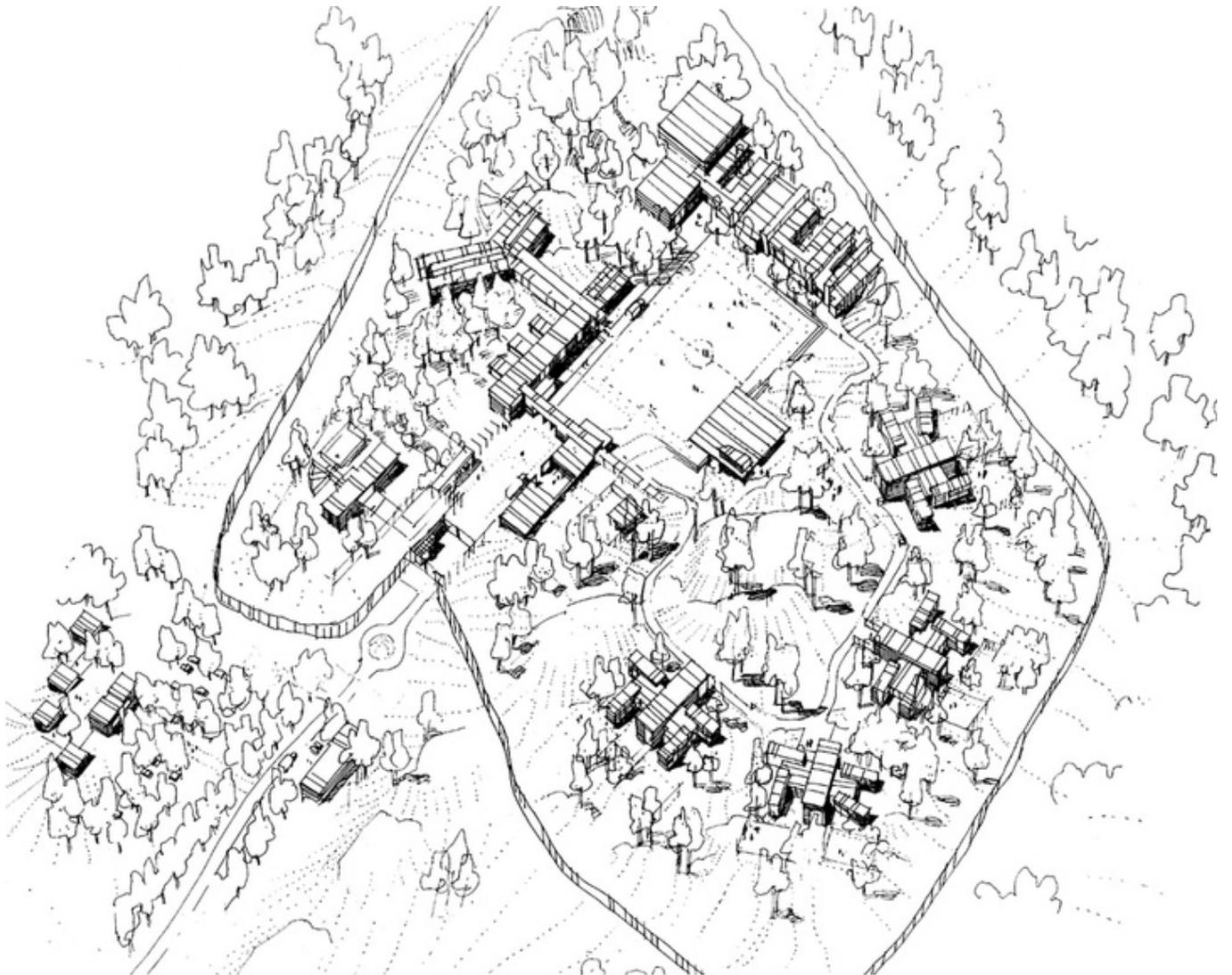


FIG 5.1.2.c - Halden prison

Retrieved from : <http://www.archdaily.com/154665/halden-prison-erik-moller-arkitekter-the-most-humane-prison-in-the-world/untitled-2-15>

5.1.3 A Radical New Approach to Prison Design

A new question is roaming around in many architects about how a prison system should be. Many architects are taking approach toward the justice system how it can be reshaped and not by punishing but by reshape , rehabilitation and reconciliation in order to prevent people from re-offending. Glen Santayana a student at Harvard Graduate School of design took a radical approach toward prison by creating a school of criminology where they can learn and both mix with the community.



FIG 5.1.3.a - Radical New Approach to Prison Design

Retrieved from : <http://www.archdaily.com/464371/a-radical-new-approach-to-prison-design/52cb5cc7e8e44ee34f000044-a-radical-new-approach-to-prison-design-photo>

The whole prison is separated into 4 structures , including the prison and the school of criminology. the whole massing is wrapped around by bridges which connect each building to another one so the both the students and the prisoner get chance to interact with each other and those are considered as the community hubs of social gathering .In this way the student can get to know with real life situations and the prisoners inside can get to know with the law and order system closely so that the chance of reoffering reduces.

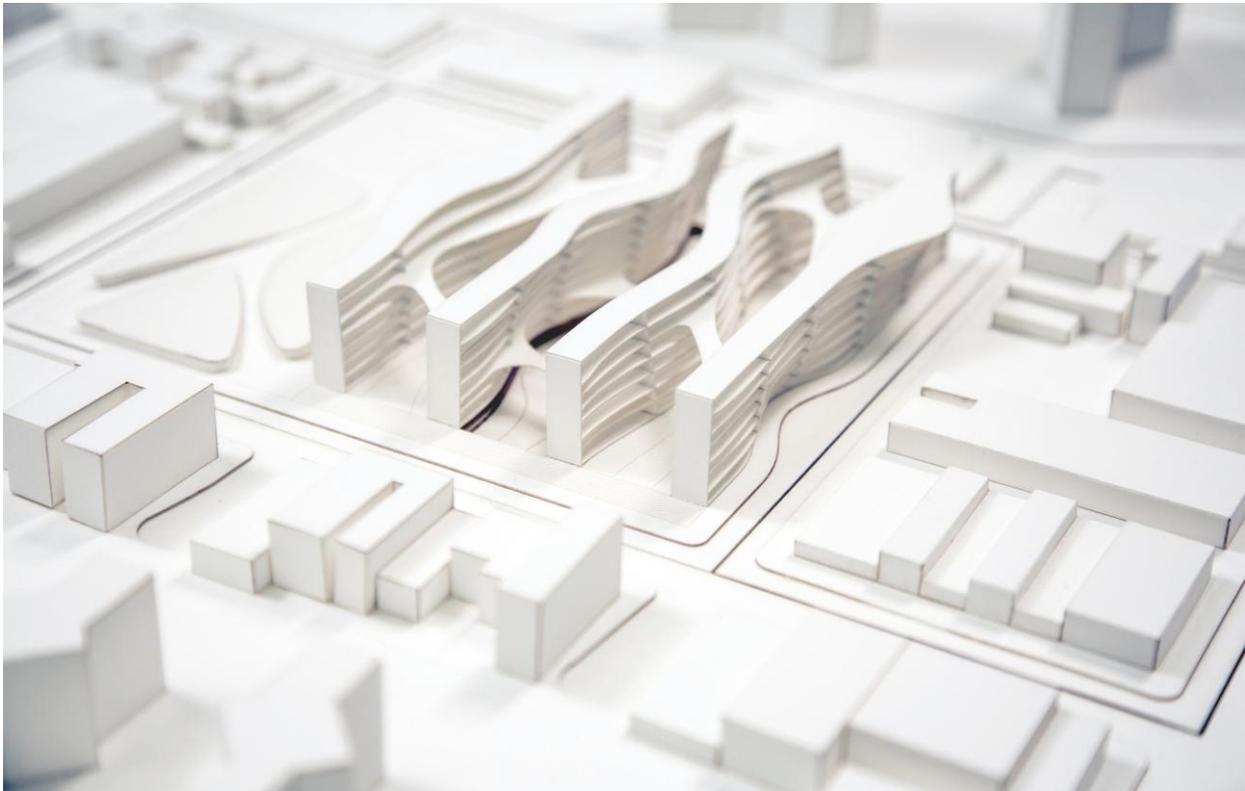
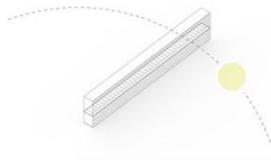


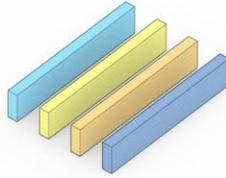
FIG 5.1.3.b - Radical New Approach to Prison Design

Retrieved from : <http://www.archdaily.com/464371/a-radical-new-approach-to-prison-design/52cb5de4e8e44e3a3c000045-a-radical-new-approach-to-prison-design-photo>



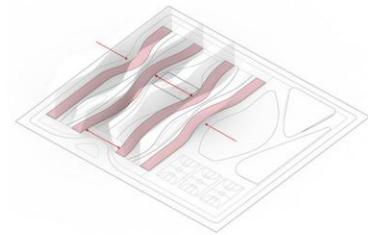
Single Loaded Corridor

Units are arranged along a single loaded corridor to maximize natural daylight and views.



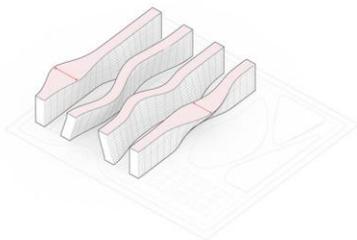
Programmatic Adjacencies

The clustering of buildings creates moments of visual privacy, yet urban exposure along one face.



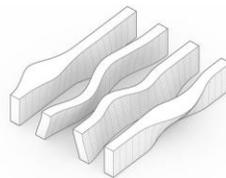
Programmatic Inflections

External conditions force the bar buildings to adapt and adjust based on program, circulation, and entry.



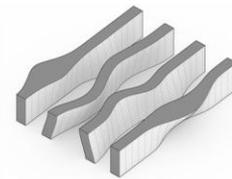
Programmatic Swelling

24 bars expand based on specific program, resulting in floor plates that can accommodate large programs such as classrooms, auditoriums, and libraries.



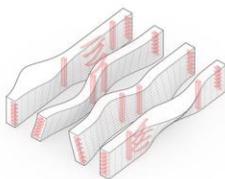
Phantom Volumes

The moments of swelling and inflection, produce volumes that are created from the negative space, resulting in a certain lightness, yet presence.



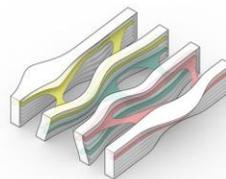
Materiality

The roof and short ends are considered opaque, while the broad ends are deemed transparent, resulting in a certain volumetric lightness.



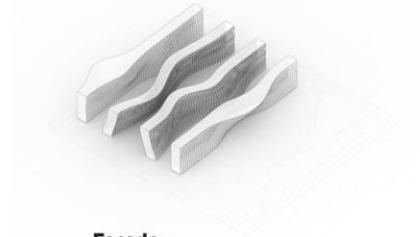
Vertical Circulation

Vertical circulation through elevator cores restricts the amount of curvature and slope induced by each volume, while maintaining circulatory continuity.



Programmatic Bridging

Although, the facility reads as four individual buildings, the bridging allows the building to function as one whole building only at certain secure levels.



Facade

The facade is made of a lattice work of structural fins that change depth based on program.

FIG 5.1.3.c - Circulation diagram

Retrieved from : <http://www.archdaily.com/464371/a-radical-new-approach-to-prison-design/52cb5d16e8e44e1bc800003a-a-radical-new-approach-to-prison-design-photo>



FIG 5.1.3.d - Perspective view of the project

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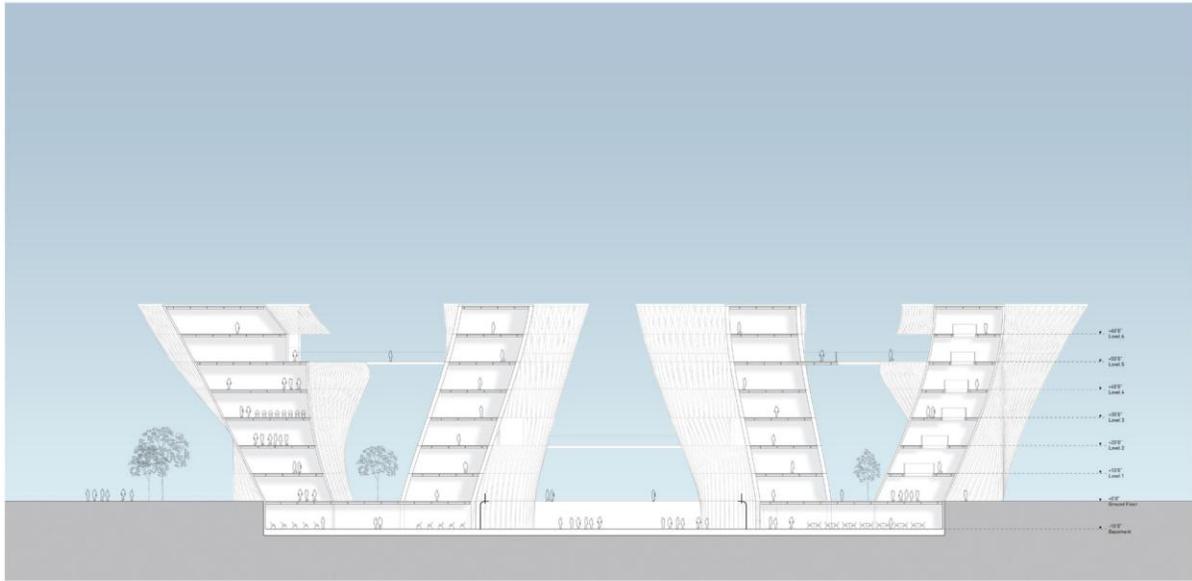


FIG 5.1.3.e - section

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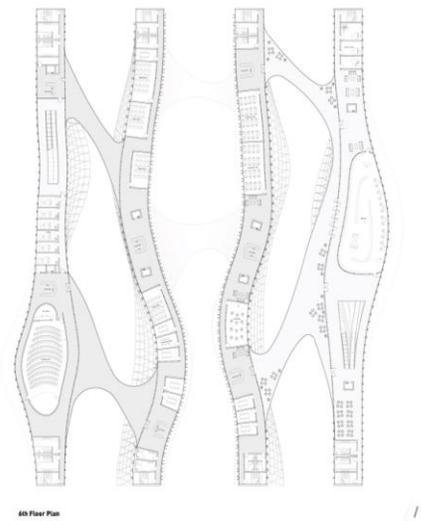


FIG 5.1.3.f - plan

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CHAPTER 06 Program and Development

6.1 Program

This program list is for 1000 prisoners of the central jail where 800 of them are male and the rest is female and adolescent. This program list includes their work shed and multipurpose shade , that means it includes both their living and working facilities .

FUNCTION	NO. OF BUILDING	NUMBER OF PERSON	AREA
Women detainees Barrack	2	70	24000 sqft
Women prisoner barrack	1	30	4500 sqft
Men prison cell	2	1440	100000 sqft
Dangerous prisoner cell	1	460	70000 sqft
Adolescent prisoner cell	2	40	26000sqft
1st class officers room	....	1	200sqft
Day care center for children	1	50	3500sqft
Record room	1	.....	2000sqft
Search room	1	.....	200sqft

FUNCTION	NO. OF BUILDING	NUMBER OF PERSON	AREA
Advising room	.....	3	200sqft
Deputy jailor room	.....	3	200sqft
Male toilet	As req.	As req.	As req.
Female toilet	As req.	As req.	As req.
Male kitchen	4	For 500	8000sqft
Women kitchen	.....	.....	2000sq.ft
Mentally disable ward	1	20	5000 sq. ft.
Male library			2000sqft
Multipurpose shade	1	.....	5000sqft
Work shade	1	300	7500sqft
Laundry	2	.....	3500sqft
Bail room	.....	5	300 sqft
Checking room	.....	5	200 sqft
Wheat thrashing room	1	10	1000sqft
Male Dining room	.....	300	5500sqft
Woman Dining room	.....	100	1200sqft
Armory	1	...	800sqft
Reserved guard	1	100	10000sqft
Office dinning	1	50	600sqft

6.2 Rationalization of the Program

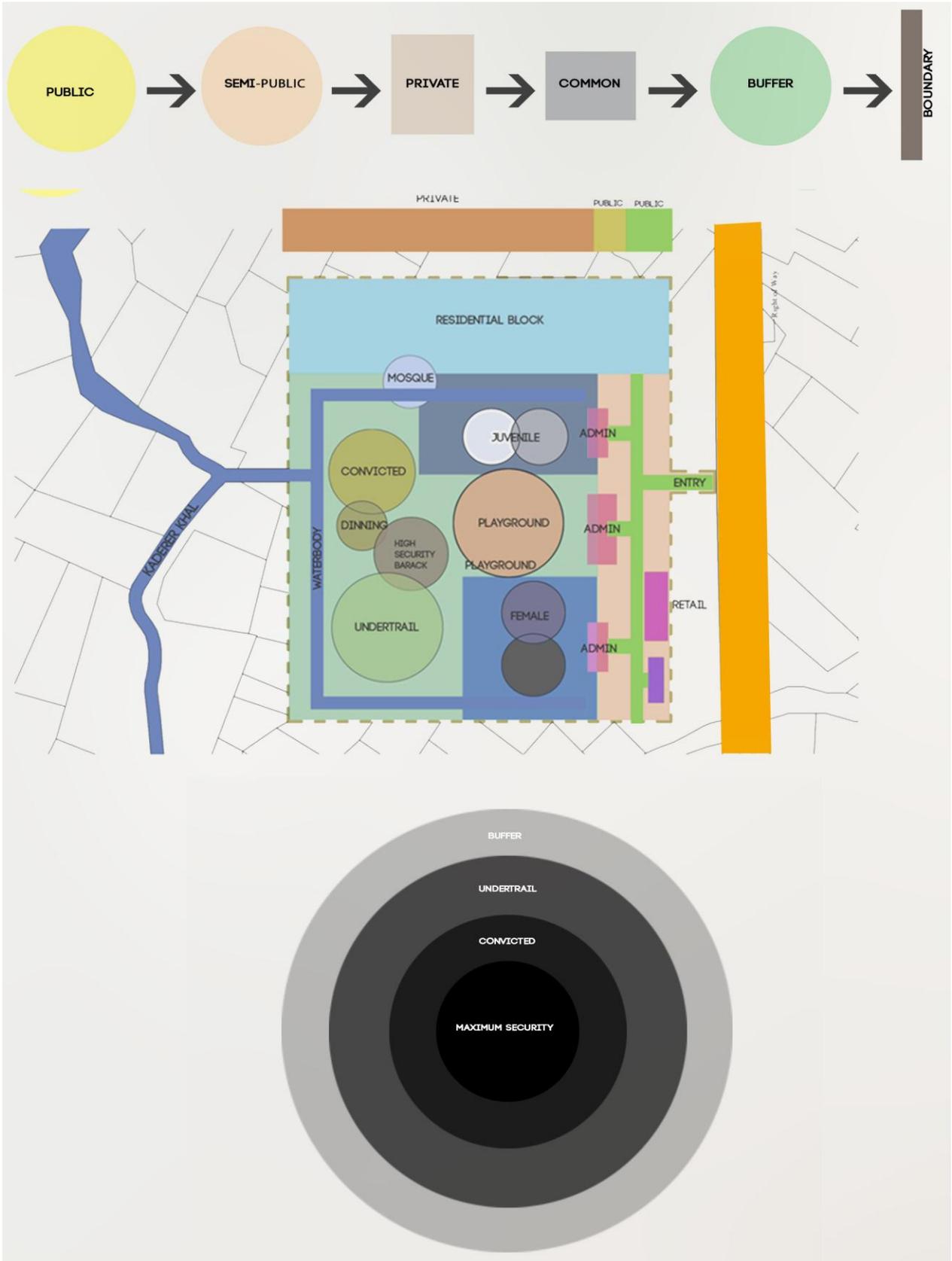
The program is suitable for designing a divisional level prison with certain amenities and facilities for the inmates and the staffs. The program has been formulated in a way to cater all the requirements of the prison, as well as address the various distinctions and segregations needed inside the prison on the basis of inmate categories. To sum up, the program list is rational in terms of the volume and category.

CHAPTER 07 Conceptual Stage and Design Development

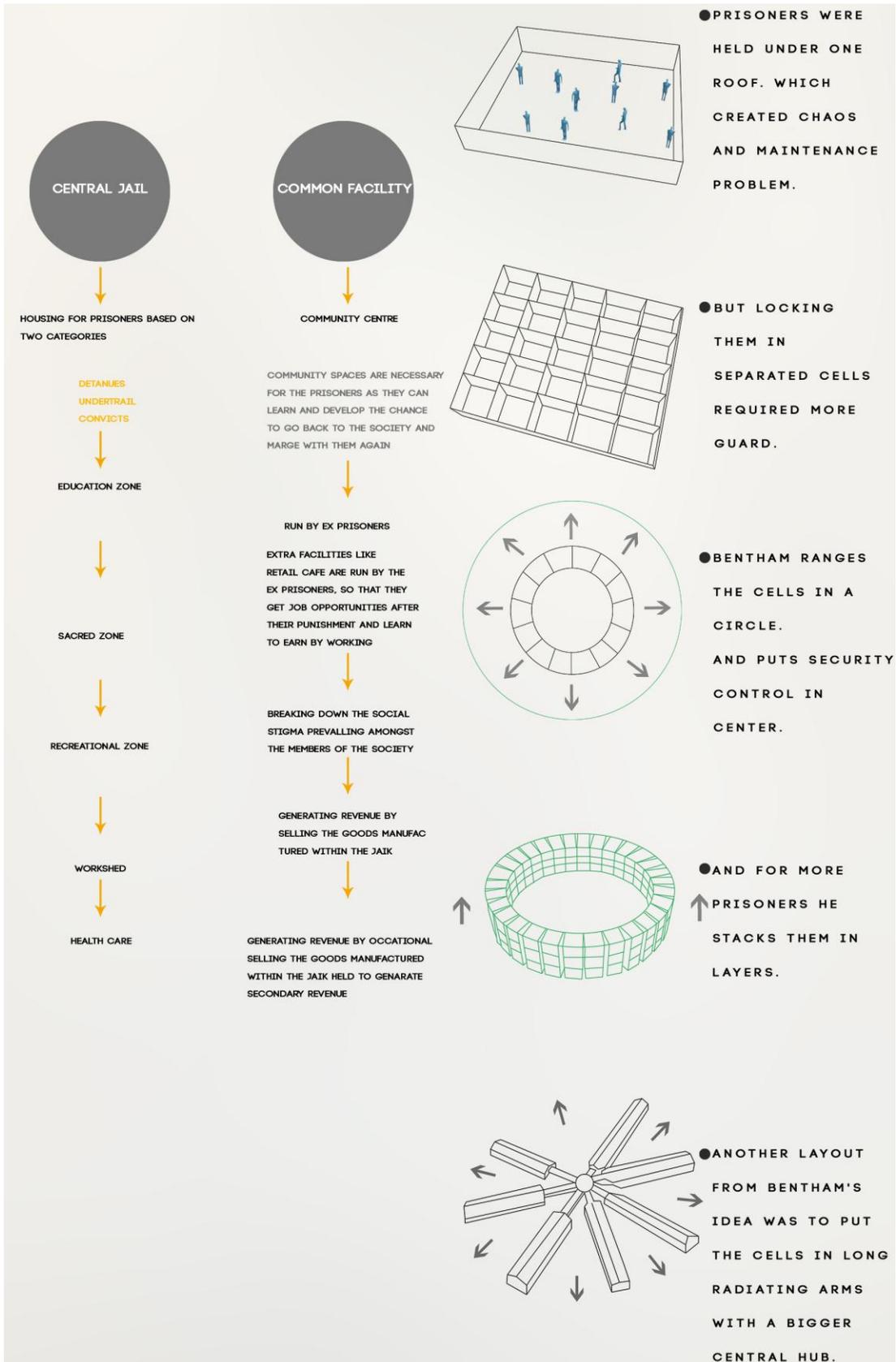
7.1 CONCEPT

The main idea of the design has been to create a space where the inmates will find themselves locked within a boundary but the inner environment will create an essence where the inmates can move around freely in a green environment. The barracks have been distributed among the site in circles so that the guards can keep their eyes on the inmate. The idea behind taking these circles were generated from the theory of Geromy Bentham (an English philosopher) who started radial forms in prison with a view to watch maximum inmates by minimum security guards. Later that form developed and architects focused more on the master plan rather than individual building forms. After that, jails became more humane and architects started to prioritize more on the facility so in the design, the idea was to give every inmate same facilities and keeping every facilities within a minimum range so that everyone can feel equality. The whole site was divided into two parts, which are inner and outer (separated by walls). 50% of which are inner and 50% of the rest is outer. In the outer perimeter, 30% is taken for residential purpose and 20% for administrative purpose. The whole site was divided into 3 parts, which are public, semi-public and private. A green buffer zone is also created within the inner perimeter wall which has at least 50 feet distance from the 20 feet boundary wall and the boundary wall is double-layered layered, so that the prisoners cannot easily escape from the jail. Near the inner perimeter wall, there is a water body which serve for both security and aesthetic purposes.

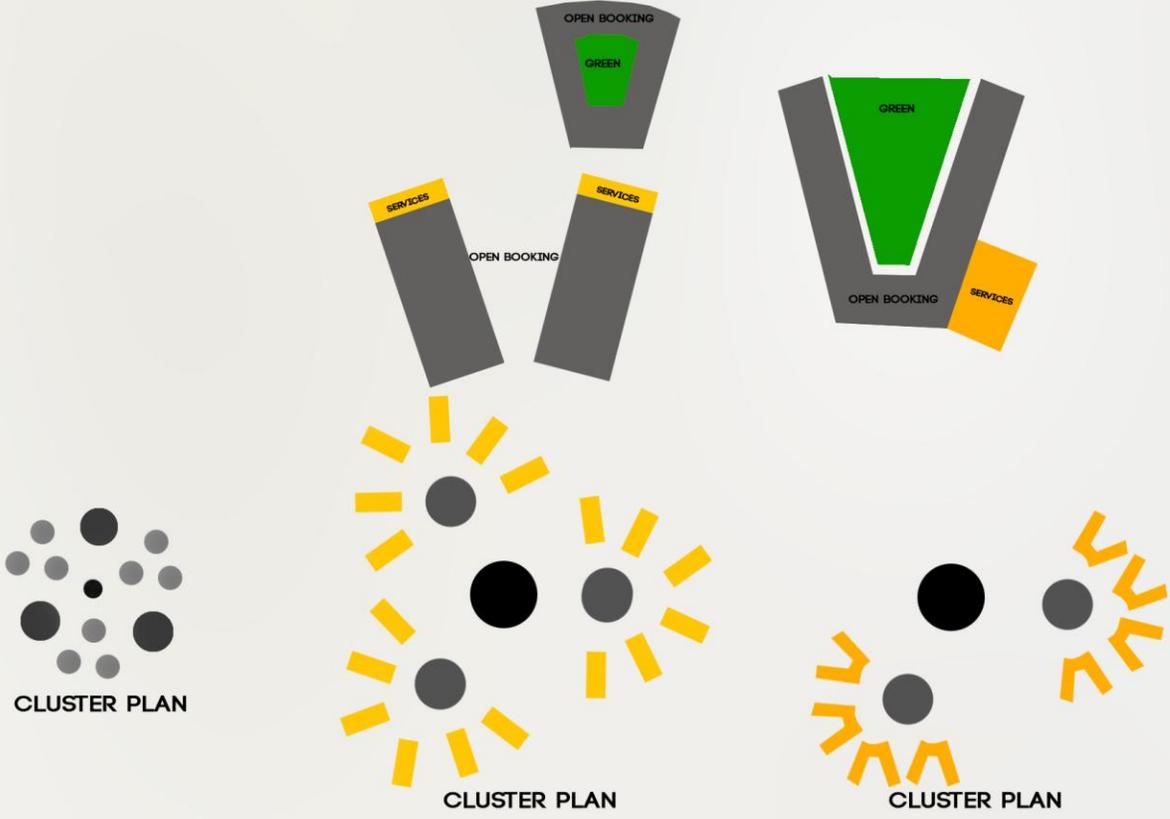
7.1.1 SCHEMATIC AND ZONING



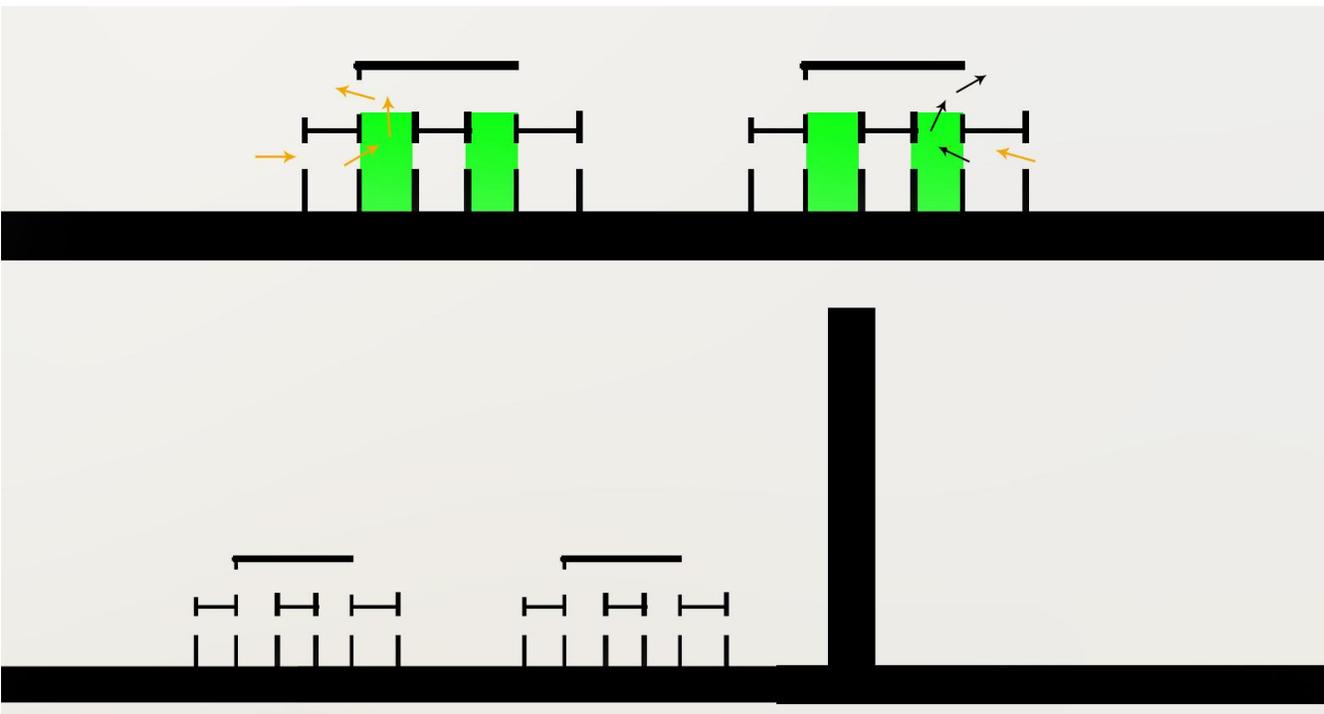
7.1.2 Form Derivation and Development



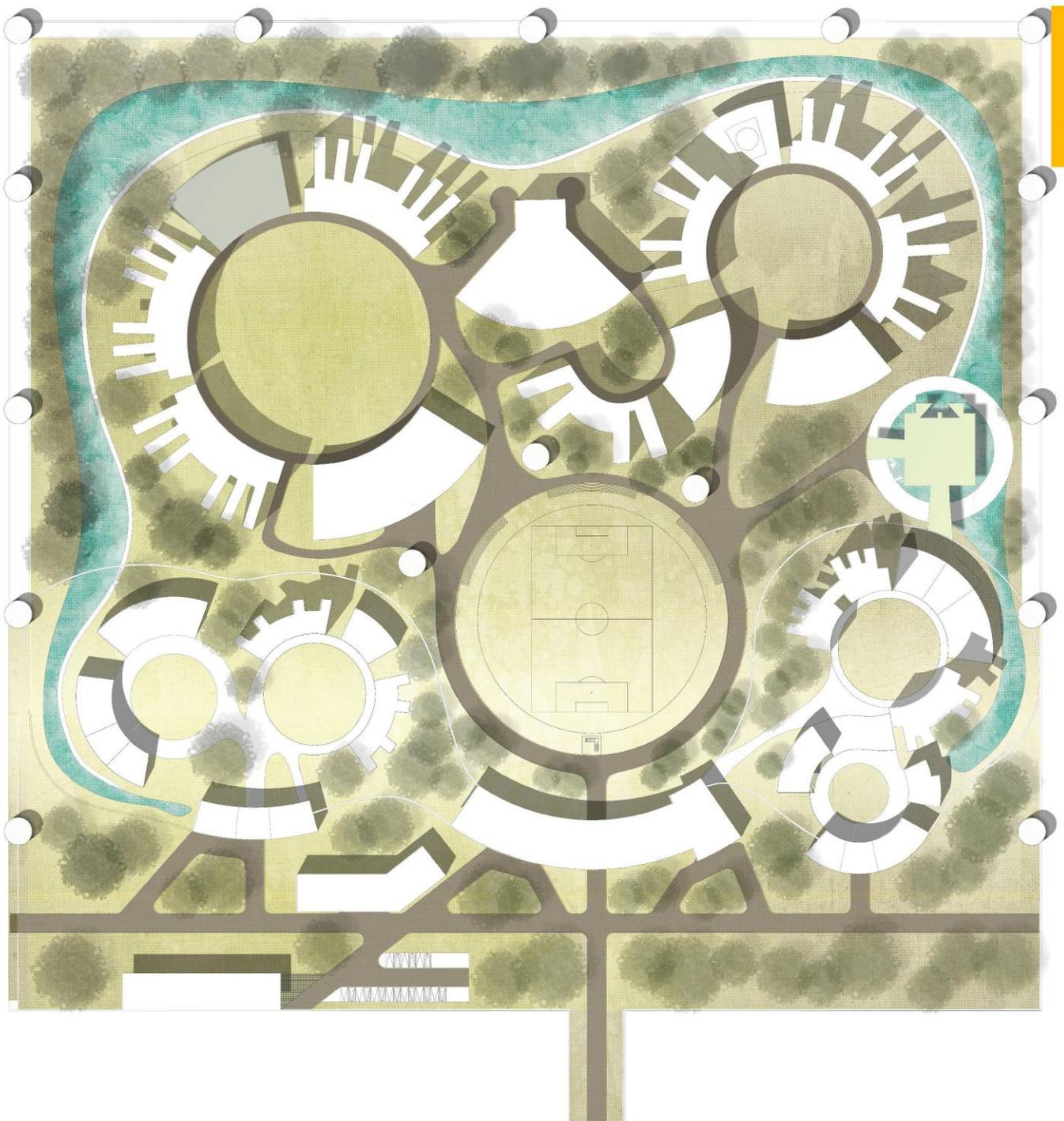
DERIVING THE FORM OF BARRACKS

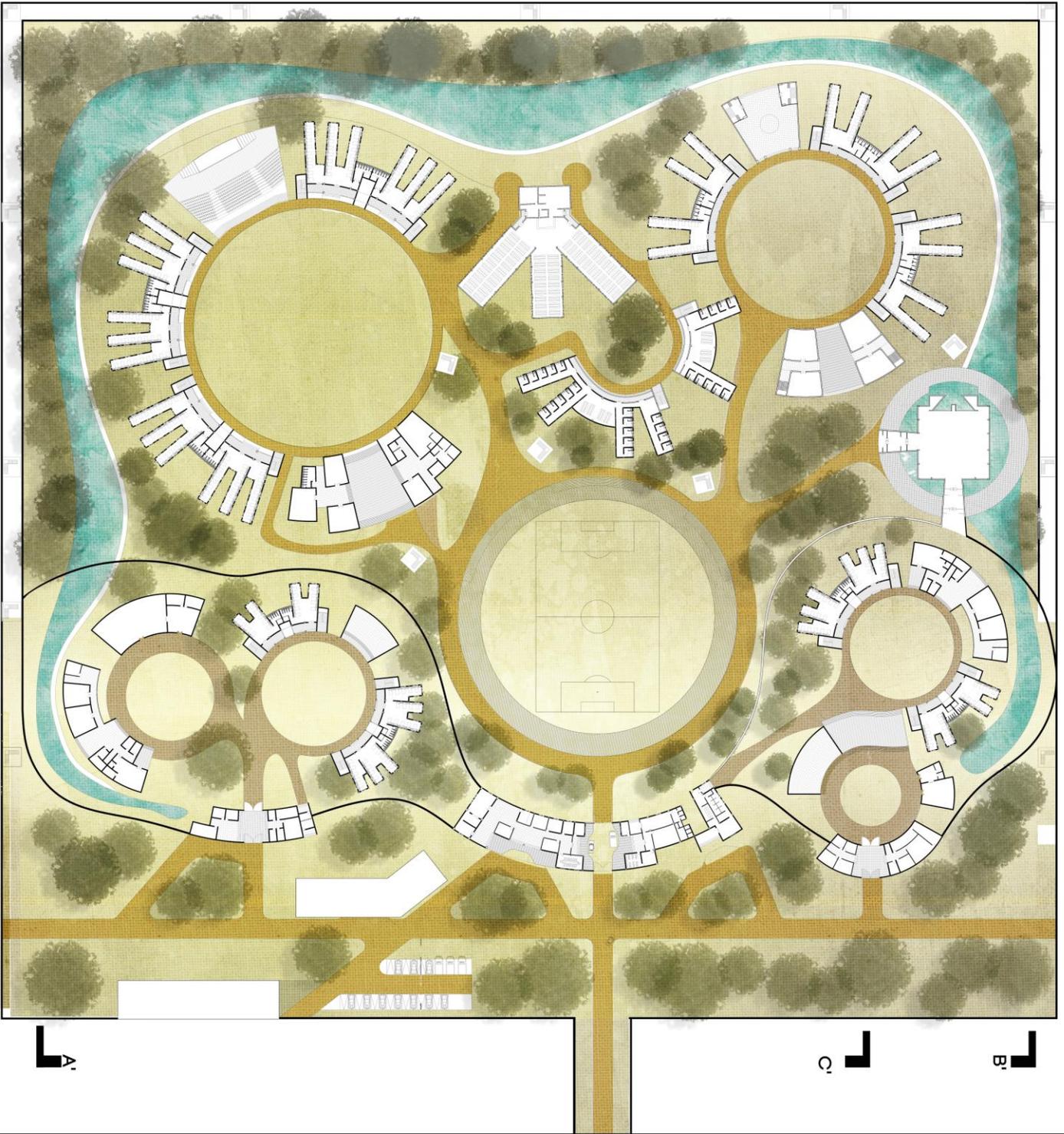


FORM EVOLUTION



7.2 Drawings







SECTION CC'

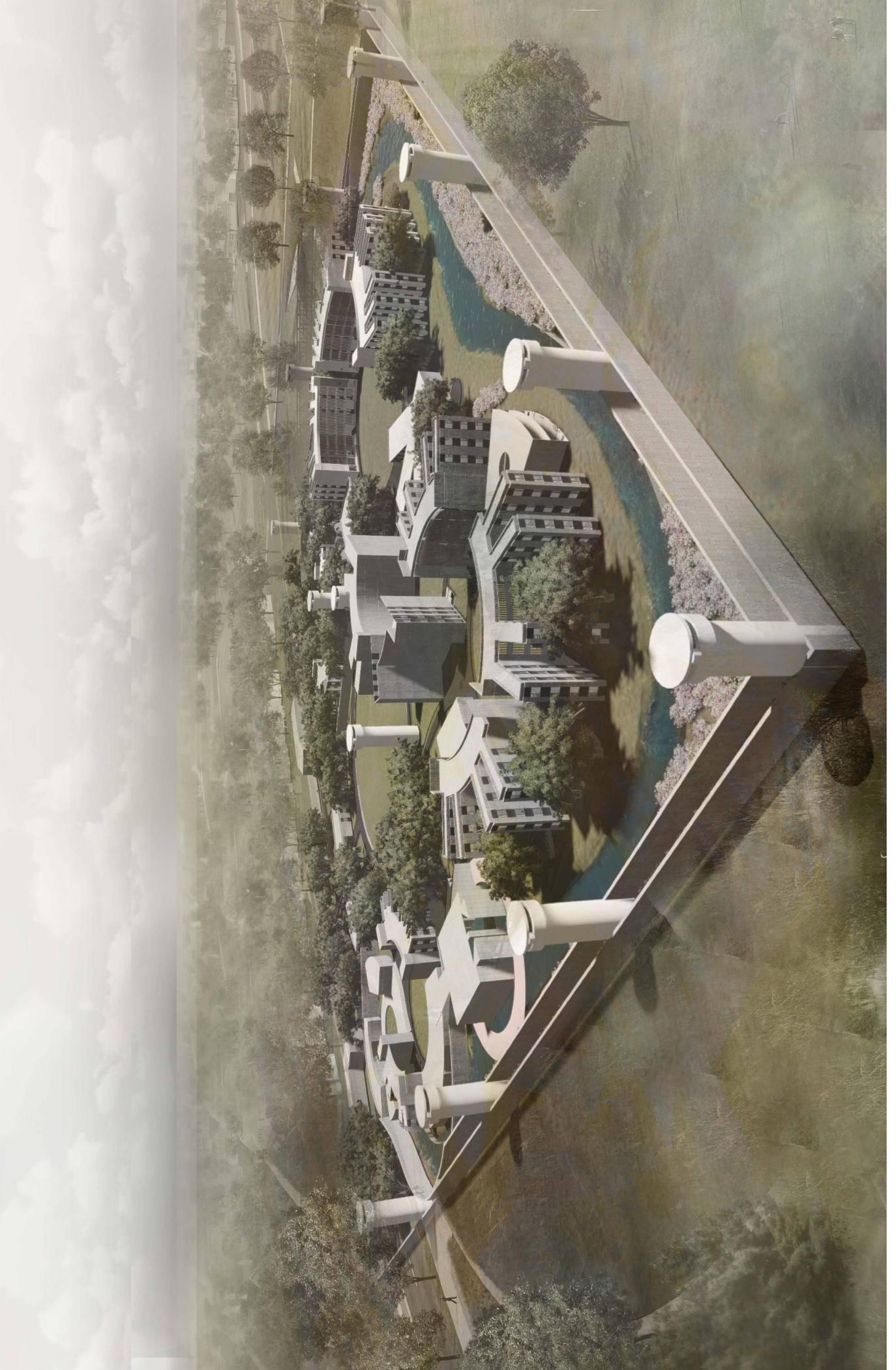


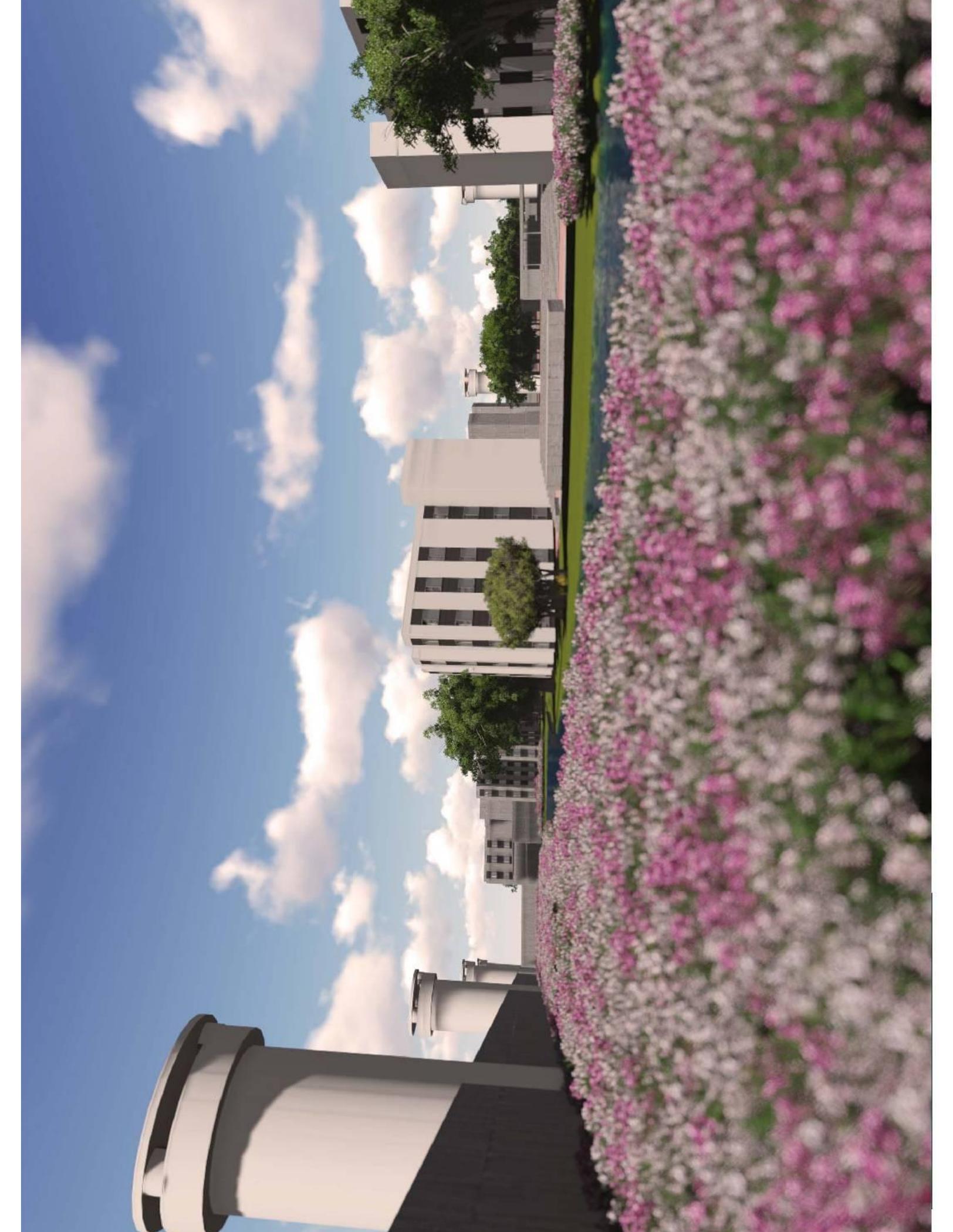
SECTION AA'



SCALE : 1/16" = 1'0"

SECTION BB'







CONCLUSION

The total design process included various phases from study of existing and futuristic prisons, study of sub-continental jail codes, to decide whether a jail or prison should be designed as comfortable place or a place that will feel like a living nightmare. The decision was taken to design it as a correctional facilities rather than a punishing machine. Apart from the prisoners convicted for grave crimes, all the other prisoners should feel that there is still a second chance for them to re-live the life they have, and the jail is the preparatory period for that second chance. Emphasis was given on making the design as humane as possible keeping in mind that behind every criminal there is a convicted society that failed to address the reasons that turned him or her into a convict. Other auxiliary spaces were accommodated as per requirement and guidelines outlined in the jail-code. As an architect, the highest challenge was to understand how to curve out prison spaces which will be both humane and not-ordinary at the same time, which will create a sense of guilt in isolation and also will keep burning the urge for a better world outside the high-walls, which will always give the message why no one should come back to the prison for the second time; in compilation of all these will lie the success of this project.

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