A DESIGN PROPOSAL FOR ABUJA BORSTAL HOME

[PROVISION OF A HOMELY ENVIRONMENT]

BY

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CERTIFICATION

This project entitled "A Design Proposal for Abuja Borstal Home" by Olajide Akeem Jibola, meets the regulations governing the award of Master of Technology in Architecture at Federal University of Technology, Minna, Nigeria and is approved for its contribution to general and professional knowledge.

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DECLARATION

I Olajide Akeem Jibola of the Department of Architecture, School of Environmental Technology, Federal University of Technology, Minna, Nigeria, hereby declare that this project is the report of a scientific research conducted by me under close supervision of Dr. (Mrs) Zubairu (Head of Department of Architecture, Federal University of technology, Minna).

The work has not been presented either wholly or partially by anybody for any degree anywhere. All reference are dully acknowledge.

DEDICATION

This thesis is dedicated to Almighty Allah, who make the completion of this program possible. Allah am grateful.

I also dedicate it to my parents, Mr. and Mrs Olajide and my entire family member.

Also, dedicated to my only love, Miss Mujidat Ronke Onawola and her entire family.

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This thesis was successfully completed with great support of almighty Allah and people created by him. Therefore, my gratitude goes to almighty Allah first. Also, acknowledge with profound gratitude, the contributions of everybody, by various means, direct or indirect, towards the successful completion of the work.

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ABSTRACT

Due to daily increase in youthful offenders in our society, this bring high criminal rate, which has brought the ideas of having a reformatory center to check the increase.

Borstal home is a place where young offenders are sent to reformation. Just to give them a more meaningful life, for them not to constitute a nuisance to the entire nation in future.

Chapter one is an introductory chapter, which examines the need for Borstal Home in Abuja. It also highlights the aim of the study scope and research methodology employed for the thesis.

Chapter two defines juvenile delinquent and how a juvenile delinquency can be prevented. It also mentions international action on juvenile delinquency. The historical background of institutions both internationally and in the country is studies in this chapter.

Chapter three discourses the research area, provision of a homely environment. The provisions.

Chapter four talks about the case studies undertaken for the purpose of this project, it also looks into the merits and demerits of the various institutions studied. Two of the case studies are within the country, namely Kaduna and Ilorin, while the third is international case study from Pleasonton California U.S.A.

Chapter five talks about the political and socio cultural background of Abuja and its people. It also talks about its location, the various climates, and geographical condition prevailing in Abuja.

Chapter six deals with various materials and the construction methods taking into consideration the various elemental parts of the building. The design concept, philosophy, and brief are also highlighted.

Chapter seven talks about building services like electricity, heating, cooling and ventilation, water supply refuse disposal, drainage and sewage disposal, solar control, fire safety and maintenance factors.

Chapter eight being the final chapter talks about the aesthetics and general appraisal of the thesis. It also contains the conclusive paragraph and finally the appendices.

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CHAPTER ONE

INTRODUCTION

1.1 PREAMBLE

Abuja is the Federal Capital of Nigeria, which has rapid growth in population daily. In this situation, there is tendency of having both well behaved and irresponsible set of people, even to the juvenile level.

The purpose of prisons at the early stage was to serve as custody and a fugitive institution. The sole aim of this custody and punishment was to rid the society of dangerous persons and also serve as deterrents to others. The present society in all its complexities has proven the earliest method of imprison them not very successful for this following reasons.

- That youths who spent a better part of their youth languishing in custody, tend to grow up without any trades or skills and thus fall back into the habit of crime.
- Prison terms do not necessary serve as a deterrent to desperate criminals (survey conducted by social scientists).

PROJECTED POPULATION OF ABUJA BY SEX MEDIUM VARIANT (1990-2006

YEAR	MALE	FEMALE	TOTAL
1990	198,381	160,769	359,150
1995	215,200	185,759	401,959
2000	266,256	214,144	481,400
2005	309,411	249,459	558,870
2010	358,374	288,376	646,570
2015	413,722	332,356	746,078
2020	476,262	382,041	858,303
2025	546,421	437,717	984,138
2030	632,961	499,123	1,123,048
2035	707,454	565,190	1,272,644
2045	885,989	704,912	1,588,901
2050	971,693	774,712	1,746,405
2055	1,052,223	839,350	1,746,405
2060	1,118,105	893,160	2,011,265

Source: National Population Commission Record, 1998

NPC 1998, 1991 population census of the Federal Republic of Nigeria, analytical Report at the National level, National Population Commission, April, 1998, PP 29-39, 354-358.

Borstal system is a correctional system involving specialized treatment of young offenders between the ages of 16 and 21. It was first established by Sir Evelyn Ruggles Brise in 1902 in the town of Borstal, England. The correctional approach is based on the theory of individualized treatment of youthful offenders. The system emphasises separate treatment and confinement, which reflects a philosohical presupposition predominant in English correctional theory of the great rehabilitative potentials of juvenile deliquents.

With this, there is supposed to be a place where offenders live and receive training designed to reform them in Abuja, ıot prisons. And is going to be under commitments and close supervision for approximately three years. Designed to stress close staff – inmate involvement, discipline, work, school vocational and religous instruction. It is patterned some what after the Nigerian boarding school system, which involves small residential dormitory living and extensive individual exposure to instruction, staff.

This is to establish special treatment to persons (males) of tender ages that are into one crime or another. It is to give them a more meaningful lief, for them not to constitute a nuisance to the entire nation in future. Reforming such people will help boost our socio-economic standard in the country especially very rapid growth in population daily, which will definately make-up for the previous social, emotional, economic and educational deprivation of the average inmate.

The achievement of this kind of training is to enable the returning offenders to become self-supporting and to escape the poverty cycle which is so highly correlated with criminal and delinquent behaviour. Provision will also be made for convicts who might be on probation and might need to visit the institution periodically.

1.2 MOTIVATION

Abuja is the Federal Capital of Nigeria located in the centre of Nigeria. Always presented whenever there is foreign visitor. There need tpeac in this territory to portray good image to the outside world, and rest of mind for the people staying there. Unlike former Federal Capital of Nigeria (Lagos), where there was no security guarrantee for visitors nor peace for people staying there.

To achieve this, a measure should be taking to stop increase in number of criminal activities in the territory, both adults who are regarded as offenders.

Criminals can be put in prison, while the Juvenile delinquents who, if left unchecked, may become adult criminals, can be put in a training centre called "Abuja Borstal Home" for reformation.

1.2 AIMS OF THE STUDY

The main aims of the study are:

- To provide a functional institute for young offenders rehabilitation.
- To create a suitable study and living environment for young offenders, where movement within the premises is free but the security is not compromised.
- To provide facilities in different vocational trades, to assist the imates in the institute discover their talent.
- To put a stop to situation whereby young offenders are thrown to prison together with adult criminals who influence them for the worse.
- To provide an environment in which those who pass through are espected to find their sojourn worhtwhile by themselves as they become better and productive citizens.

1.4 SCOPE OF STUDY

This thesis is basically divided into two main parts. The project report and the design of the proposed centre.

- The project report explains the reason for Abuja Borstal Home. Also sheds light on how this centre intends to reform and re-integrate the young offenders back in to the society.

- The second part is the planning and design of the proposed reformatory centre.

This shall focused on education and staff – inmate relationship, expected to solve deliquents problems.

The facilities necessary are as follows:-

1. Administrative units
2. Admission Units
3. Welfare units
4. Educational units
5. Dormitory units
6. Canteen units
7. Clinic units
8. Mosque units
9. Church units
10. Recreational Area
11. Staff quarters

Out of all these facilities, six units shall be detailed in this thesis and they are:

A. Administrative Unit

- Office of the principal
- Office of the vice principal

- Office of the teaching staff
- Office of the institution secretary

B. Admission Unit

- Recepition for new inmates
- Record room
- Office of the senior psychologist
- Office of the pyschologists
- Back call
- Conveniences
- Officers incharge office

C. Welfare Unit

- Guidance and councelling offices
- Senior probation officer's office
- Conveniences instructors office

D. Educational Unit

- Classrooms
- Library
- Hall
- Workshops
- Conveniences

E. Dormitory

- Sleeping area of three categories
- Common rooms
- Evening discussion room
- Offices sof the officers incharge
- Laundries
- Conveniences

F. Canteen

- Dining area
- Cooking area
- Stores area
- Kitchen yard

1.5 RESEARCH METHODOLOGY

The research method used for this thesis is descriptive survey method. And its involves direct interview with ex-inmates from various rehabilitation centres, physical inspection of the existing similar projects as case studies. And literature review from publications extracts books, magazines, journals, consultation of maps, unpublished and published works of past researchers.

CHAPTER TWO

LITERATURE REIVEW

2.1 HISTORICAL BACKGROUND

In early attempts to give differential treatment to person of tender age, Monarch, King Atheleitan of England of 10th Century may be mentioned. Who enacted a law that "Man shall nc stay with anyone younger than a fifteen winter of man". This means that a man should not be detained with any man younger than 15 years of age.

There are other historical precedents which led to the birth of the concept of juvenile delinquency that deserve brief mention occurred 1704 when Pope Clement XI founded in Rome a centre for the correction of profilgated youths this was the earliest attempt made to separate juveniles at different categories form adults in connection with imprisonment. In 1756, the marine society of England established a special institution for the reformation of juvenile offenders and other institutions of similar purpose soon followed in America. The first of such institutions was established in New York City about 1825. All these early institutions laid more emphasis on hard work than on education.

Movement in this form of institution, however, was not felt in full force until 1859 when the reformatory school act was passed in England (source) (Encyclopedia America Vol. 8). This legislative recognition gave the necessary impetus for the spread of the idea of separate institutional treatment for juvenile delinquents. The development of this movement coincided with the humanitarian outlook of the western world at that time and it emphasized that juveniles should be reformed instead of punished.

At the end of the 19th century, a number of such institutions were established in England and a number of countries under British Administration. The best of such pioneer institution established based on humanitarian bases was in Borstal town England, established in 1902 by Sir Evelyn Roghts Brise. The correctional approach was based on individualized treatment of youthful offenders who were aged between 16 and 21 years of age.

2.2 DEVELOPMENT IN NIGERIA

The establishment of separate institutes for the rehabilitation of juvenile delinquents was passed in 1956 by legislation. It was not until 1958 when the first of such institutions for male offenders was set up and commissioned in Kaukuri, Kaduna.

Ever since then, not much of this institution has been provided to put drastic stop to young offenders being thrown into prison with adult.

PRISON ADMISSIONS BY TERMS OF IMPRISONMENT

TERMS OF IMPRISONMENT	1988	1989	1990	1991	1992
Remand & Awaiting Trial	19,745	21,063	19,219	20,251	19,257
Short Term	13	13,926	11,756	11,532	10,725
Long Term	16,740	16,418	15,830	064	12,989
Condemned	918	849	862	915	928
Detainees	653	593	140	84	95
Others	939	1,047	6,272	7,790	8,210
TOTAL	53,208	53,896	54,079	55,626	52,204

Source: Nigerian Prisons Service

PRISON ADMISSIONS CALSSIFIED BY RELIGION AND STATUS OF INMATES

	1987	1988	1989	1990
Total Admissions	51,346	65,606	47,286	8,293
Religion of Inmates				
Christian	24,460	31,183	18,500	4,729
Islam	17,134	28,400	22,377	2,433
Tradition	1,589	2,544	1,691	131
Atheist	2,239	1,318	1,265	483
Others	5,924	2,161	3,453	517
Status of Inmates				
Convicted	31,771	30,953	30,344	27,586
On Remand/				
Awaiting Trial	18,950	19,745	21,063	19,219
Detainee	460	653	593	140
Others	1,629	939	1,047	6,272

Source: Nigerian Prisons Service

PRISON ADMISSIONS BY AGE GROUP

STATE	1990	1991	1992	1993	1994
Under 16 year	147	743	204	753	209
16 - 20 years	7,084	12,617	5,344	7,854	3,996
21 - 25 years	12,698	17,287	8,216	7,856	9,944
26 - 50 years	15,145	90,423	17,452	22,737	19,848
51 and above	994	5,122	549	1,598	716
TOTAL	127,741	12,741	31,765	40,801	34,713

Sources: Nigerian Prisons Service

1990: Data not available for Akwa Ibom and Kaduna States.

1991: Data not available for Akwa Ibom, Anambra, Borno, Gongola, Imo and Sokoto States.

1992: Data not available for Akwa Ibom, Delta, Kaduna, Katsina, Kogi, Rivers, Sokoto and Federal Capital Territory.

1993: Data not available for Adamawa, Akwa Ibom, Anambra, Bauchi, Borno, Katsina, Kebbi, Kogi, Rivers, Yobe and Federal Capital Territory.

MINOR CRIMES AND OFFENCES REPORTED TO THE POLICE

	1990	1991	1992	1993	1994
False pretence/ cheating	12,858	11,936	13,899	13,845	13,546
Unlawful posession and receiving stolen property	13,882	11,067	9,790	10,408	10,018
Arson	1,302	1,155	1,519	1,716	1,615
Perjury	7	10	11	13	61
Other Minor Crimes	-	-	17,298	3,954	3,321
Gambling	315	374	279	465	1,307
Breaches of peace	9,613	9,256	9,258	9,950	8,129
Escape from custody	963	803	843	748	672
Local Acts	5,922	6,598	4,733	6,928	4,724
Others	5,031	5,066	4,617	218	225
TOTAL	49,893	44,270	62,247	48,245	43,618

Source: The Nigeria Police Force

2.5

NIGERIAN PRISONS DATA

TOTAL CRIMES REPORTED TO THE NIGERIA POLICE BY TYPE

CRIME	1990	1991	1992	1993	1994
Cases reported to the Police (Excluding Traffice Offences)					
Serious Crimes	291,472	251,557	317,101	272,645	228,281
Minor Crimes/ Offences				**48,305**	**3,618**
Cases Prosecuted					
Serious Crimes	144,864*	123,030*	129,858	120,215	n.a
Minor Crimes/ Offences			**5,817**	**6,920**	**n.a**
Cases Pending Investigation					
Serious Crimes	128,174*	124,101*	140,999	18,516	n.a
Minor Crimes/ Offences				**2,121**	**n.a**
Cases closed Undetected					
Serious Crimes	15,720*	15,449*	16,273	3,845	n.a
Minor Crimes/ Offences				1,513	n.a

Source: The Nigeria Police Force.

Note: * Figures in 1990 and 1991 are inclusive in both serious and minor crimes

n . a = Not available

2.2 GENERAL CHARACTERISTICS

Borstal definition in oxford dictionary is an institution for reforming young criminals. It is also referred to as a detention centre or reformatory institute. Encyclopedia America gives reformatory definition as an institution that works to reform as well as confine young person who have been convicted of a crime or offence.

Young offenders are usually referred to as juvenile delinquents, their issue is very fundamental to the developments, their issue is very fundamental to the development of any nation. This is due to the fact that any nation with a high number of young offenders is a potential nation of criminals, if the situation is not properly managed and changed before it mature.

The vast majority of laws dealing with Juvenile delinquency throughout the world provide an age limit beyond which special procedure and measurement of juveniles are applicable. The age limit not only varies form country to country but also form state to state within a country as in United States, in Europe the variation ranges from 16 years in Belgium to 21 years in Sweden. Majority of the European countries fix the age limit however at 18 years.

In Nigeria however the age limit is between the ages of 16 to 21 years of age. In addition to the upper age limit, most laws employ a lower age limit below which criminal responsibility in accordance with common law tradition can not be attributed to a Juvenile. Majority of countries throughout the world accept either seven or eight years as

the lower age limit often in conjunction with the refutable presumption concerning discernment, although there are some countries where it is higher, apparently the highest being found in Finland where the lower age limit is sixteen years.

There is a general agreement among the countries of the world that an anti – social act which in their respective laws is defined as a criminal act or offence constitutes delinquency when committed by a Juvenile. Beyond this, however, various meanings are attributed to the term. In United States, there are over 30 forms of behaviour which are regarded as delinquency when committed by a Juvenile. They include armed robbery, petty theft, drug addiction, rape, etc. What is delinquency in another for example according to common English law a boy under the age of 14 years is presumed to be incapable of have sexual intercourse and he cannot therefore be found guilty of a sexual offense in England. Might be considered as delinquent in United State.

2.4 THE EXTENT OF DELINQUENCY IN NIGERIA

Juvenile delinquency in Nigeria is a major social problem and to calculate it's extent accurately is impossible. A large proportion of juvenile delinquent acts are undetected or unreported and are hidden from public view.

A comparison of research studies with enforcement agency reports reveals that only about one fifth of all juveniles involved in delinquency in Nigeria come under official security. There are limitations

in all sources of data. Research studies often under estimate the number of serious delinquenct acts. Official data from police, courts and correctional institutions provide the most comprehensive information handled, but the data do not include hidden or informal arrests of juveniles under ten are relatively infrequnt. Children under ten are more likely ot be handled informally and therefore not reported in official statistics. Arrest and official handling increase as older youths are considered. Older youths (ages 16 through 20) account for the majority of arrest of juveniles in fact, juveniles accounts for a large share of all arrest for property crimes in Nigeria. Juvenile delinquency, traditionally has been a predominantly male activity. Females, however, are engaging in juvenile delinquency more freequently. Although running away and other offences such as promiscuity or incorrigibility sitll contribute significantly to female arrest rates. However, males continue to account for the major share of juvenile delinquency reported in official statistics and the western industrialized countries. Delinquency is found among individuals of all income, educaitonal and status levels of society in Nigeria. It is not clear from research whether upper or lwer – incoem produce more delinquency, but juveniles form the lower – income groups come in contact with the juvenile justice system more frequently. While juvenile delinquency is most visible in cities like former Federal Capitals (e.g. Lagos), Kaduna and Kano. The nature of delinquency does not differ greatly form one geographic area to another.

2.5 CAUSES OF DELINQUENCY

Juvenile delinquency has been explained by many developed theories. These theories generally have taken oen of three major approached. The biological approach attempt to explain why individuals become delinquent by referring to body or physical dysfunciton. The psychological approach focuses on the development of mental dysfunction and the learning of behaviour patterns. The sociological approach concentrates on the influences in the social environment that shapes the individuals behaviour. These have been severally attempts to link the major approaches to develop interidsciplinary theories.

BIOLOGICAL AND PSYCHOLOGICAL THEORIES

Biological theories, the fist developed to explain juvenile delinquency, considered body, shape, gland dysfuncitons, hereidty and physicla malformaitons as possible causes of delinquency. Research studies have provided little support for biological theories and as a result, they are generally discounted in scientific circle (source?) (Lindia – Davidoe, introduction into psychology third edition) sociobiology, an attempt to link the bioligical approach with sociology, considers chromosomal abnormalities and hyperkinesia as possible causes. No convincing evidence has been demonstrated to support this approach.

Psychological theories focus on environments that govern behaviour. Psycholdynamic theories stress the inner environment of the human mind. Following sigmoid fraud, psychodynamic theories

consider the conflict that occur in the human mind between human drives and social controls. According to these theories, problems experienced during childhood may determined how the individual resolves conflict in the mind and "act out " in delinquent or other behaviour, psychodynamic theories have been emphasized in favour of behaviourist theories focusing on the learning process, behaviourist believe that individual continue activities that are reinforced with rewards and avoid activities that are ignored or punished. If delinquent acts are rewarded, the individual will learn to continue and expand them. The behaviour view has been linked with the sociological approach to produce socio – psychological theories such theories examine the learning process in the social group. This linkage between the psychological and sociological approaches has gained wide acceptance.

SOCIOLOGICAL THEORIES

The sociological approach has been more extensively developed than the psychological or biological approaches. Sociological theories have been used to explain delinquency both of groups and individuals.

Much of the early sociological analysis of delinquents and delinquent gangs is associated with Fredrick Thrasher and the Chicago School of Urban Sociology. These theories were concerned with the apparent social dislocation or disorganized that occurs in rapidly changing areas (source?) (Rodne sark: Sociology) They suggested that

when major social institute break down social controls are weakened. In the absence of strong social control immature youths form spontaneous groups. These groups engaged in a wide variety of activities, both legal and illegal, to satisfy unfulfilled needs. The ideas developed by the Chicago school served as a basis for much of the current sociological theorizing.

Sociological theories that focus on problems in the social structure rely on the work of Robert Morton. When individuals are unable to reach through legitimate channels, the success goals defined by a society, there is pressure to engage in illegitimate behaviour that is perceived to provide success. The individuals may turn to delinquent behaviour to achieved wealth or recognition. Richard Cloward and Lloyd Ohlin state that instead of acting alone the individual may join preexisting groups or gangs, to achieve the desired success. Subculture theories assume the presence of alternative value systems in a heterogeneous society. According to Albert Cohen, behaviour is problem – solving. Early socialization in the working class does not adequately prepare youth to compete in a world dominated by middle – class individuals. When the child reaches school, he or she is likely to fail. An informal counter culture develops among the failure to provide an alternative sets of criteria for assessing success. The alternative pattern that develops is defined as deviant or delinquent by the mainstream of society. Other theories have identified a teenage

subculture and a male adolescence sub culture that provide juvenile delinquency. (Rodne Sark; Sociology).

Labeling theories have focused on the distribution of power in a society. Howard Becker suggest that the cause of an individuals commitment to a delinquent lifestyle is not prior delinquent behaviour but rather the burden of bearing the label "delinquent" many juveniles break laws, but only a few generally of lower income families are labeled as juvenile delinquents and so treated. The juvenile justice system itself contributes to juvenile delinquency.

Sociological theories that focus on social learning rely on the work of Edwin Sutherland. These theories indicate that a preside position to engage in delinquent behaviour is acquired form individuals with whom a youth interacts and respects. If those individuals show disregard for the law, the youth may adopt their attitudes and behaviour to gain a favourable response from them. Along with their rationalization the youth acquires their techniques for violating the law.

Popular ideas about the causes of juvenile delinquent emphasize the social environment. The family, drug abuse, failure of schools, and the weakening of religious bonds, all have had popular support and as explanations for delinquency. Research in these areas has produced the cause. But, none out of this factors can stand alone as the primary cause.

In conclusion, theories about the cause of juvenile delinquency are constantly changing as old theories become suspect, new theories

are developed to replace them. No singe theory can explain all delinquency of the major approaches, the sociological theories have been more thoroughly tested than others, Brenda Griffin and Charles Griffin indicate that a comparison theories have the greatest amount of empirical support. Association with delinquent friends and awareness of parental disregard the law, because it appear to produce attitudes favourable to law violation and delinquent behaviour.

However, no theory of juvenile delinquency should be ignored. Even outdated, naive theories provide information that is helpful to current theorizing. This show fruitless avenues for investigation, and their study prevents theories for investigation, and their study prevents theories from repeating past mistakes.

2.5.1 PREVENTION OF JUVENILE DELINQUENCY

It is commonly accepted by the authorities in the field of juvenile delinquency that general prevention however desirable cannot by itself automatically solve the problem of juvenile delinquency, specific measures therefore are essential in any preventive policy and program. Such measures consist of child and family guidance's services and on educational system in which teachers are alert to the problems of their students.

The effectiveness of preventive programs can not be judged until more knowledge is gained with respect to causes of delinquency behaviour. Research must go hand in hand with the organization of

preventive programs so that the letter can be improved as knowledge is gained.

2.5.2. INTERNATIONAL ACITON ON JUVENILE DELINQUENCY

United Nations, since 1948 has taking into consideration that juvenile delinquency is causing concern in many countries of the world, has been implementing a program of international policy and action on juvenile delinquency. Apart from publishing comprehensive studies on the problem in different regions of the world, the organization has also request for government technical assistance in the form of regional seminaries, expert, fellowships and scholarships.

CHAPTER THREE

3.0 PROVISION OF A HOMELY ENVIRONMENT

3.1 INTRODUCTION

Borstal system was first established by Sir. Evelyn Ruggles Brise in 1902 in the town of Borstal, England. The correctional approach is based on the theory of individualized treatment of youthful offenders.

This is aimed at establishing special treatment to persons (makes) of tender ages that are into one crime or another (juvenile delinquents). Just to give them a more meaningful life, for them not to constitute a nuisance to the entire nation in future.

However, ever since the inception of this idea in Nigeria, there is no improvement on the existing reformatory center. Juvenile delinquents do not reduce in number, instead, they increases daily. In the process of this research, I discovered that if a homely environment can be provided as a reformatory center for youthful offenders will definitely have a great effect in them, which shall gradually check juvenile delinquency in Abuja.

3.2 What a reformatory center needs to be homely

Provision of a homely environment is based on three area. And they are:-

1. Premises outlook

2. The structures

3. The security

1. **The Premises outlook**

In recognition of the special requirement and psychological effect of a reformatory center, right from the planning of the site, cognizance was taken to maintain balance between the landscape and the micro climate to achieve a suitable correctional environment. Landscaping is an important element of any ideal or an homely environment. A beautiful environment is capable of arousing one's interest and intellects and can enhance higher performance.

The use of landscaping to complement the premises is restricted to collection of shrubs, well demarcated lawns, interspersed with standing shrubs along the walk ways and courtyard. The hard-landscape comprises mainly of the pedestrian walkways that lead all the facilities together.

2. The structures

The design of the building has strive to marry between residential and institutional forms of buildings. The façade treatment is a product of modern technology with low maintenance cost. As a correctional center for young offenders, care was taken to make the center conducive for the inmates in terms of all necessary comforts a building needs e.g. Cross ventilation.

Dormitory combined with canteen is also to enhance a homely environment for the inmates. The glass used for windows has a glassy effect from the approach. From the inside, a continuous visual appraisal of the landscape is allowed. The users are given the comfort of the inside and the same time appreciates the beautiful landscaped lawns and trees.

Covered sit-outs are provided at the dormitory for evening sitting, relaxation area and conversation area for inmates and councilors.

The workshop designs are of two floors, which give different chance between serious and unserious inmates in their vocational training. Show glass design in the workshop enable the instructor's to display the best student work, which when continuously seen by the inmates can gradually change the unserious ones.

3. The Security

A homely environment is a friendly surrounding one feels relatively free to do things by oneself without much fear in mind.

Therefore, facility like perimeter control system that allows considerably free movement of inmates within the Borstal Home is provided. The perimeter control consist of two lines of fence 12 to 15 feet high separated by a space less than 20ft. Varying degrees of surveillance techniques ranging from staff patrol to electronic detection systems are employed to keep perimeter fence under scrutiny.

CHAPTER FOUR

4.0 CASE STUDIES

4.1 GENERAL SURVEY

Ever since the existence of reformatory center in Niger, there has not been any to meet up with the rate at which juvenile delinquents increase daily, neither any to really justify for the reason at having them.

Looking at the present situation of former Federal Capital like Lagos in terms of criminal rate and daily increase of juvenile delinquents brought the idea of studying the situation in order to improve on the existing one and be able to site an improved reformatory center in present Federal Capital Abuja as a measure to check the usual problem of rapid growth in population daily. (National Population Commission Record, 1998).

4.2 CRITERIA OR CASE STUDY

The major criterion for selecting a situation for study was similarity in character. A selected case must therefore be one, which was originally intended to serve a purpose similar to a solution of the problem in question.

4.3 CASE STUDY ONE (BORSTAL TRAINING INSTITUTE KADUNA)

4.3.1 INTRODUCTION

The Borstal Training Institute, Kaduna South. It is under the Nigeria Prisons service and is sited within the same premises as the prisons college and the junior staff residential quarters.

The institute was set up by the Colonial administration 1958, the sole am of which was to cater for the growing number of delinquents in the society. It has been the only institute of it's sort offering vocational training as a mode of reformulation for juvenile delinquents.

The institute has a capacity for 170 inmate but currently has a population of 239 inmates which is beyond it's capacity. the ages of the inmates range between 16 and 21 years and 90% of them are brought in by their parents wile the remaining 10% are brought in by the commissioner of police, but first notifying the parents.

The administrative block is the first block sited on visiting the institution, next by hostel block units, other units include church, mosque, kitchen and various workshops which offer various kind of vocational training. The vocational Training. The vocational training include plumbing, welding, carpentry, crafting, tailoring, photography and electrical wiring installation.

The main recreation activity is football, which is only played on Fridays, a day set aside for physical training activities only.

The institute is made up of individual blocks built around an open area. The buildings have no character of an institution. The absence of a perimeter fence reduces the security of the center.

DAILY ROUTINE

The normal day starts at about 6.00am, when the inmate wakes up to clean their hostels. They are usual supervised by the various hostel captains inmate by the prison welfare officers in the center. Their daily routine entails:

- 6.00am – 7.30am
- wake up, clean up and take bath.
- 7.30am - 8.00am
- The Breakfast
- 8.30am – 1.00pm
  Workshop
- 1.30pm – 2.00pm
- Lunch time
- 2.00pm – 3.00pm
- Siesta time
- 3.00pm – 5pm
- Confound within their hostels

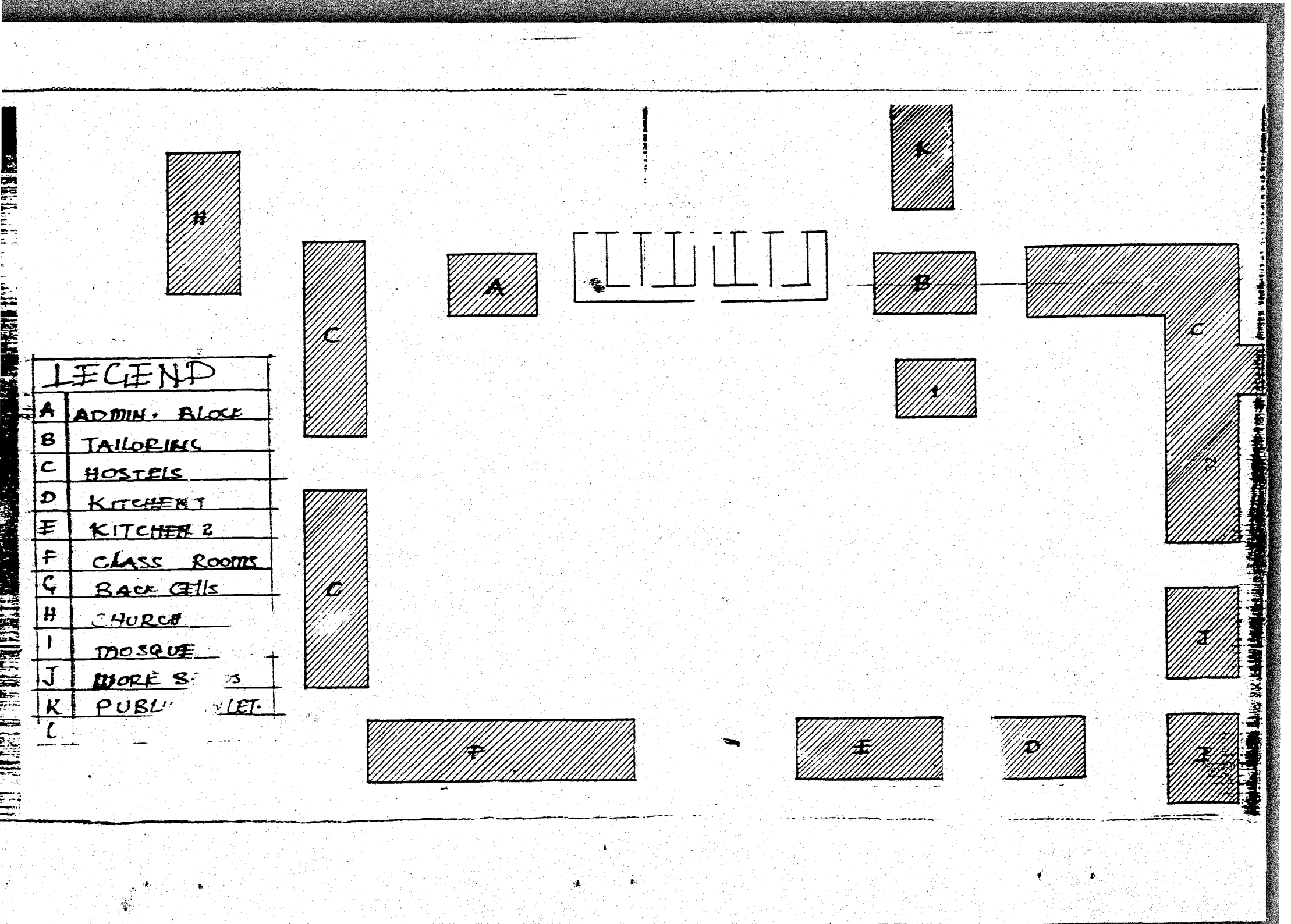
- 5pm - 6pm
- Dinner
- 6.00pm – 6.00pm
- Locked up within the hostel.

4.3.2 OBSERVATIONS

1. Well locked within an environment that offers some form of control.
2. The institute is well stuffed with both academic and welfare offices.
3. Inmate have unrestricted movement within the premises and are only restricted at lockup times.
4. The institute is easily accessible
5. The institute is close to the services rendered by the Nigeria Prisons service.

DEMERITS

1. There is no perimeter fence to demarcate the boundary of the institution.
2. The hostels are not suitably design for the purpose they are serving.
3. The hostel are not adequately protected i.e there are no security posts or points in case any danger when they are locked up.
4. They have very poor medical facilities.


H
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1
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E
D
I
LEGEND
A ADMIN. BLOCK
B TAILORING
C HOSTELS
D KITCHEN 1
E KITCHEN 2
F CLASS ROOMS
G BACK CELLS
H CHURCH
I MOSQUE
J WORKS
K PUBLIC TOILET.
L

4.4 CASE STUDY TWO (BORSTAL INSTITUTE ILORIN)

4.4.1 1 INTRODUCTION

Borstal institute Ilorin is located in Ganmo Village not far from Ilorin township and close to NTA Tower station. When coming from Ilorin approaching NACB before Afan junction, there is a filling station, opposite this filling station in NTA road in which the site is along the road by the right.

It has not been in use for quite sometime which make it look shabby. And give chance for thief to vandalize the buildings.

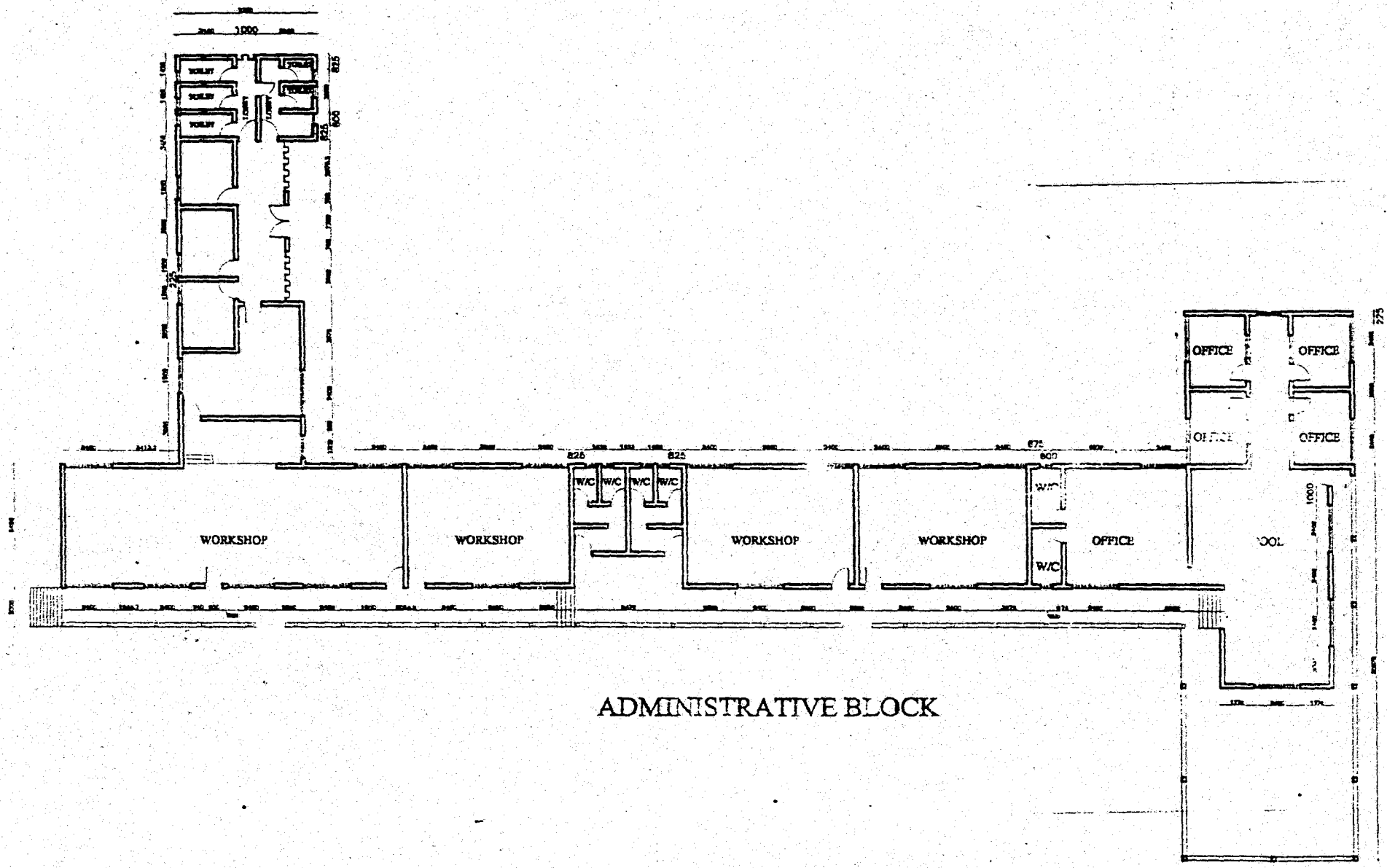
4.4.2 OBSERVATIONS

MERITS

1. Well located in a conducive environment.
2. Well plan for its purpose
3. Very big land that allow numbers of vocational training and also big enough for recreational area.
4. Has enough land for expansion.

DEMERITS

1. Loose security
2. Has not been in continuous use which give room for thieves to vandalize the buildings.
3. It was not really design to meet p with the rapid increase of juvenile delinquent in our society.



ADMINISTRATIVE BLOCK

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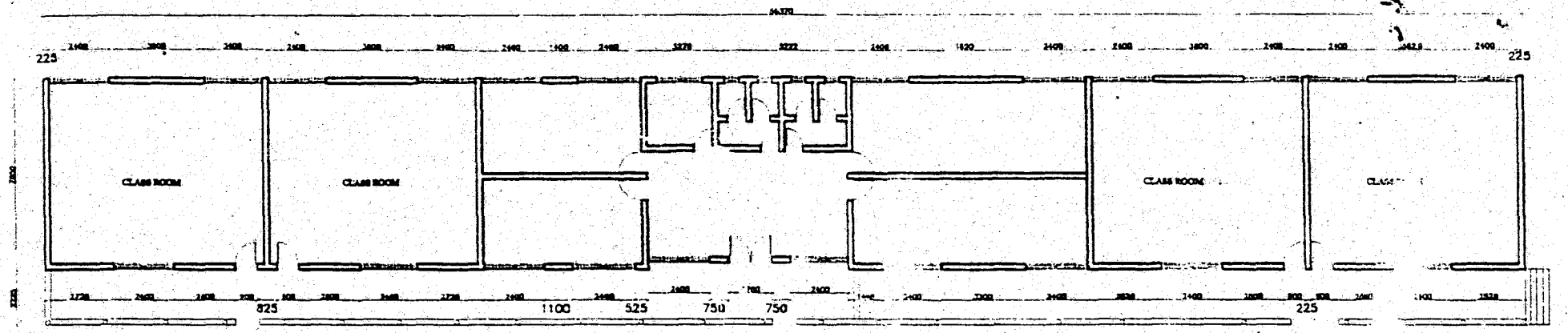

BLOCK B

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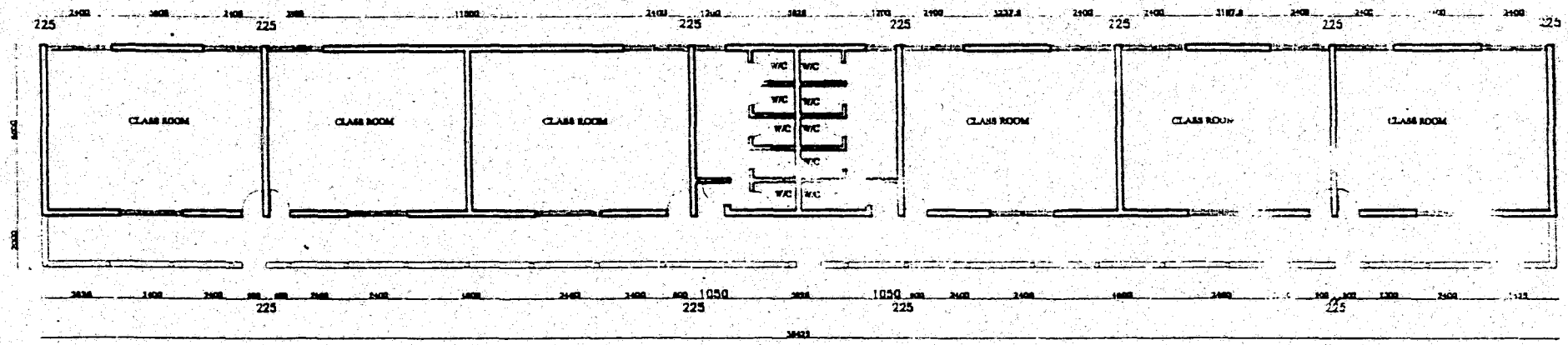

BLOCK A

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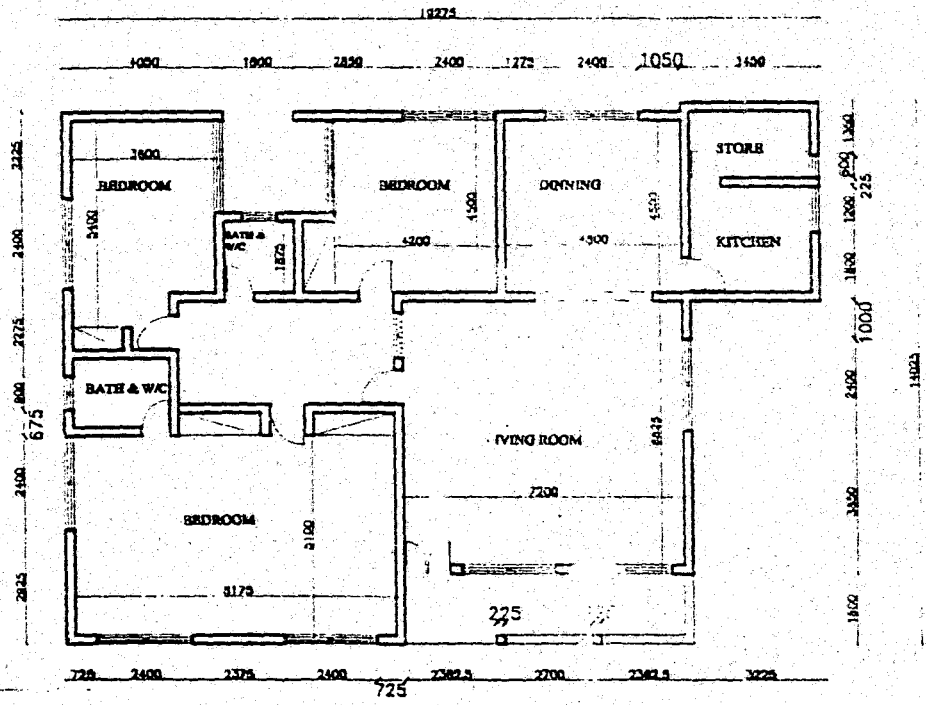

STAFF QUARTERS

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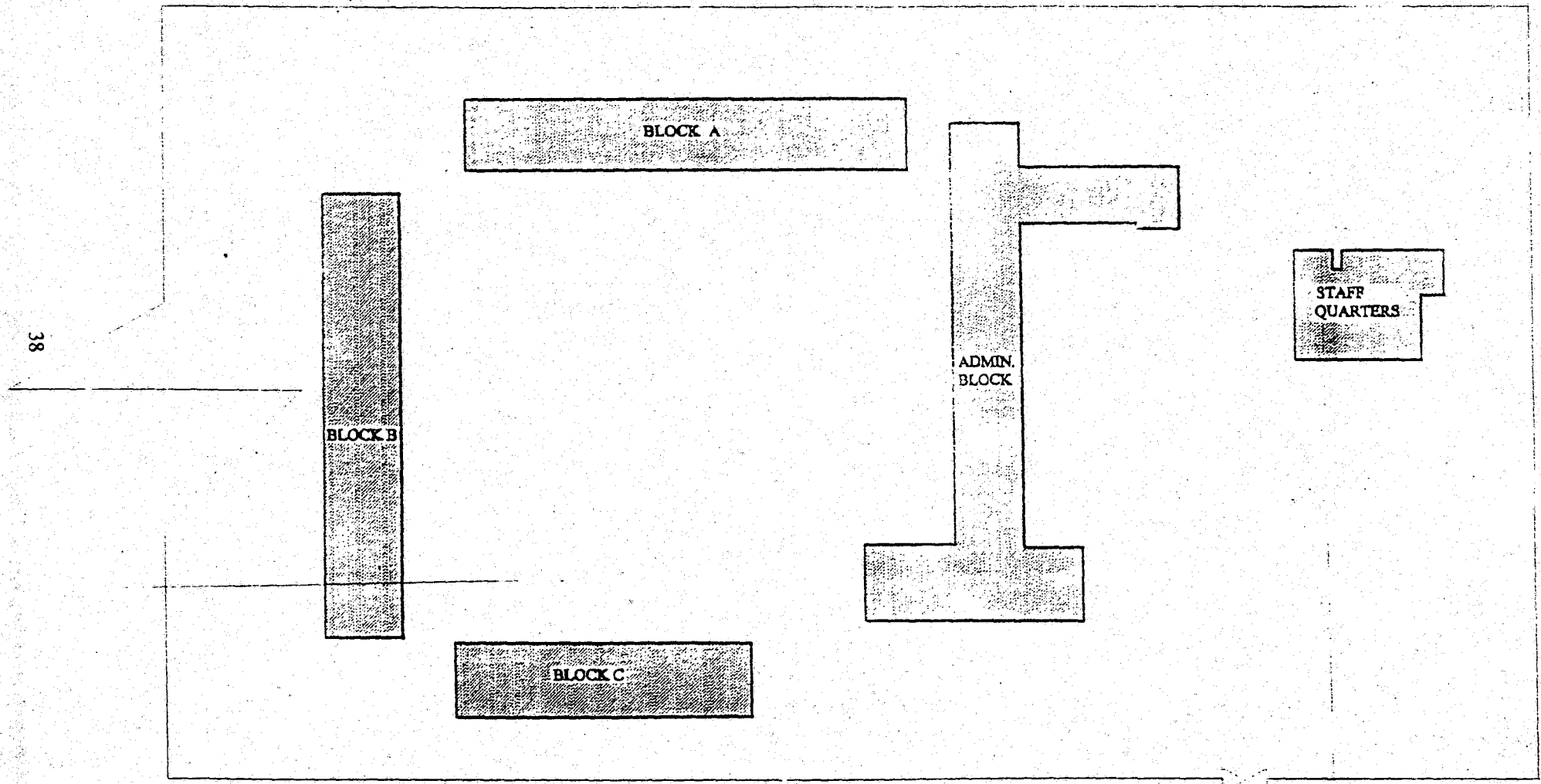

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4.5 CASE STUDY THREE (FEDERAL YOUTH CENTRE PLEASANTION)

4.5.1 INTRODUCTION

The Federal Youth Center at Pleasanton, California, is the first of several regional youth correctional institute built by the Federal bureau of prisons, which reflects the reforms in prison programs at these national levels. The non institutional look expresses the program emphasis on community reintegration for the offenders and it's over all character indicates the age group to which those sent there are between 18 and 25 and their offences run the gamant of human frailty. Their youth and their first time status, ever, give them better than average potential for rehabilitation and reintegration. It is a minimum/medium security institution, controlled by perimeter fencing and an electronic detecting system, television monitors inside, but without the usual conspicuous guard towers. The environment which results from the rehabilitation program and it's implications permit, within certain restrictions, more normal living conditions than the old type of prison. The "village" is planned around a non-made lake on an almost fenceless 87 acre, sited 30 miles from San Francisco, consists of two 120 person housing units and the necessary core facilities like admission, administrative, education, dining and recreation.

The heart of the "village" and of the program is the 30 persons housing sub-unit, where direct contact between counselor and inmate takes place on a regular basis. Sub-units may be combined to function as a unit for a specific rehabilitation program. vandalism to date has been minimal inmates showing an exceptional regard or the building and the guards.

4.5.2 OBSERVATION

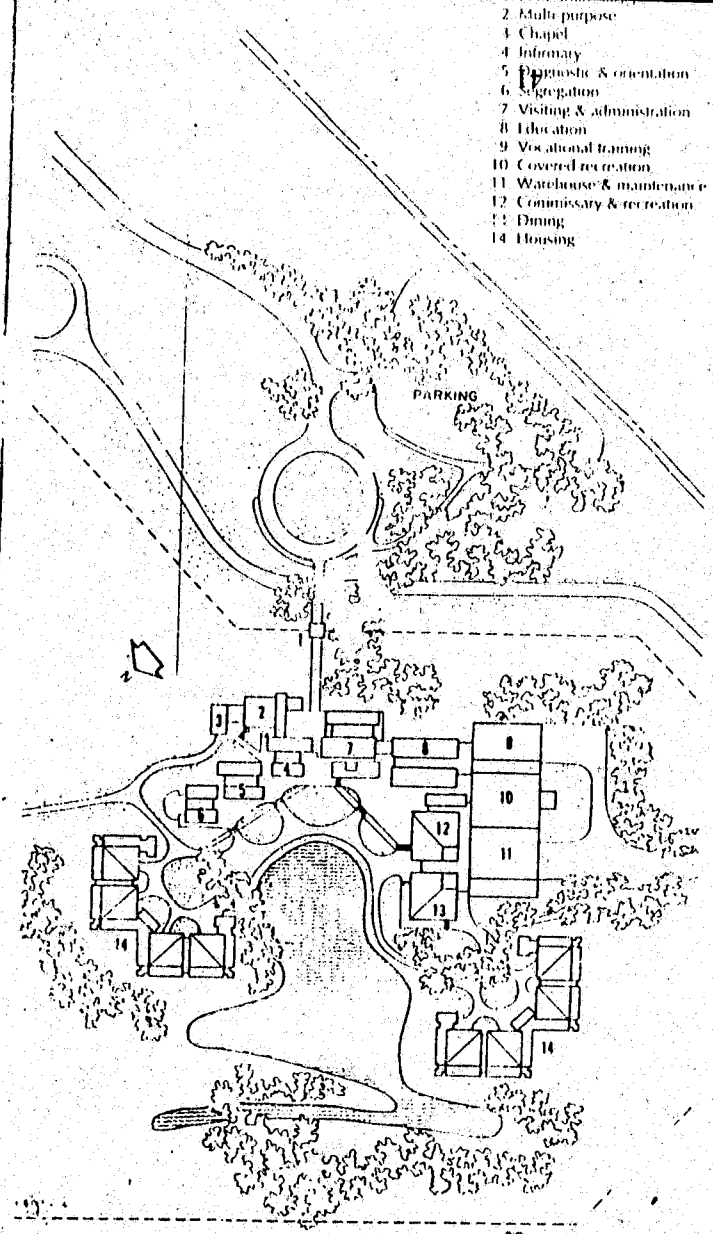
MERITS

1. It's minimum/maximum security institution, controlled by perimeter fencing and an electronic detecting systems with television monitors inside.
2. The institution permits normal living condition at certain area.

DEMERITS

1. The materials used for the buildings are typical prison forms. E.g. reinforced concrete block, percent concrete floors and roofs decks.

2 Multi-purpose
3 Chapel
4 Infirmary
5 Diagnostic & orientation
6 Segregation
7 Visiting & administration
8 Education
9 Vocational training
10 Covered recreation
11 Warehouse & maintenance
12 Commissary & recreation
13 Dining
14 Housing



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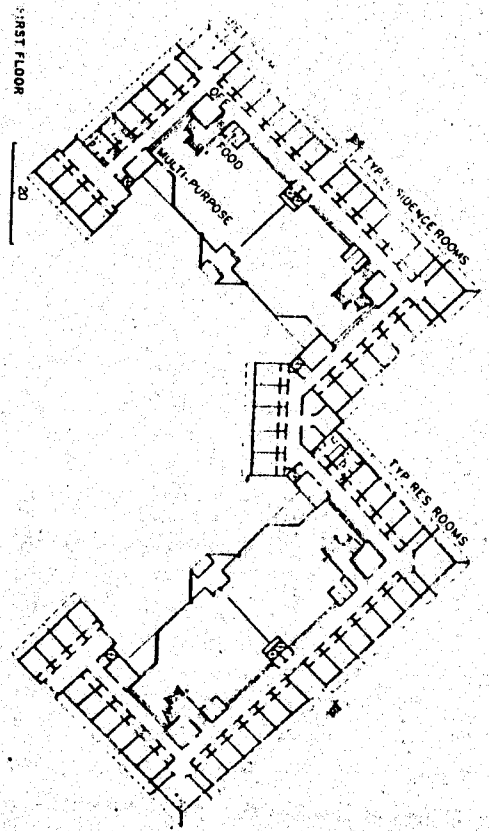
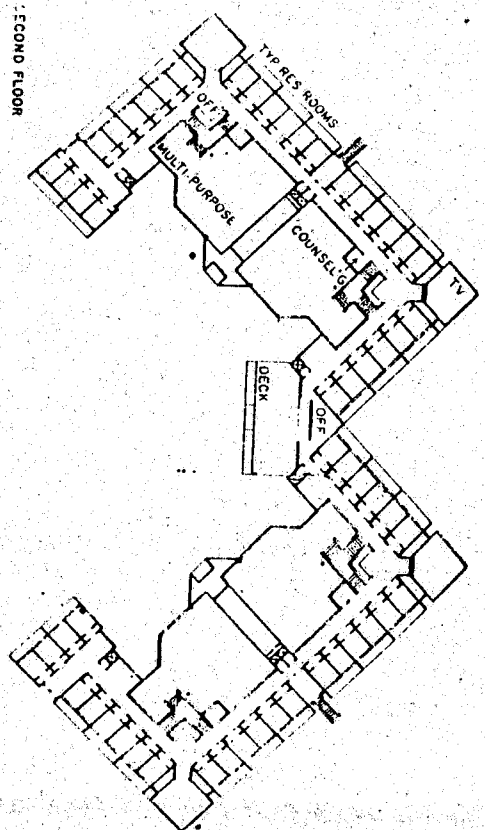
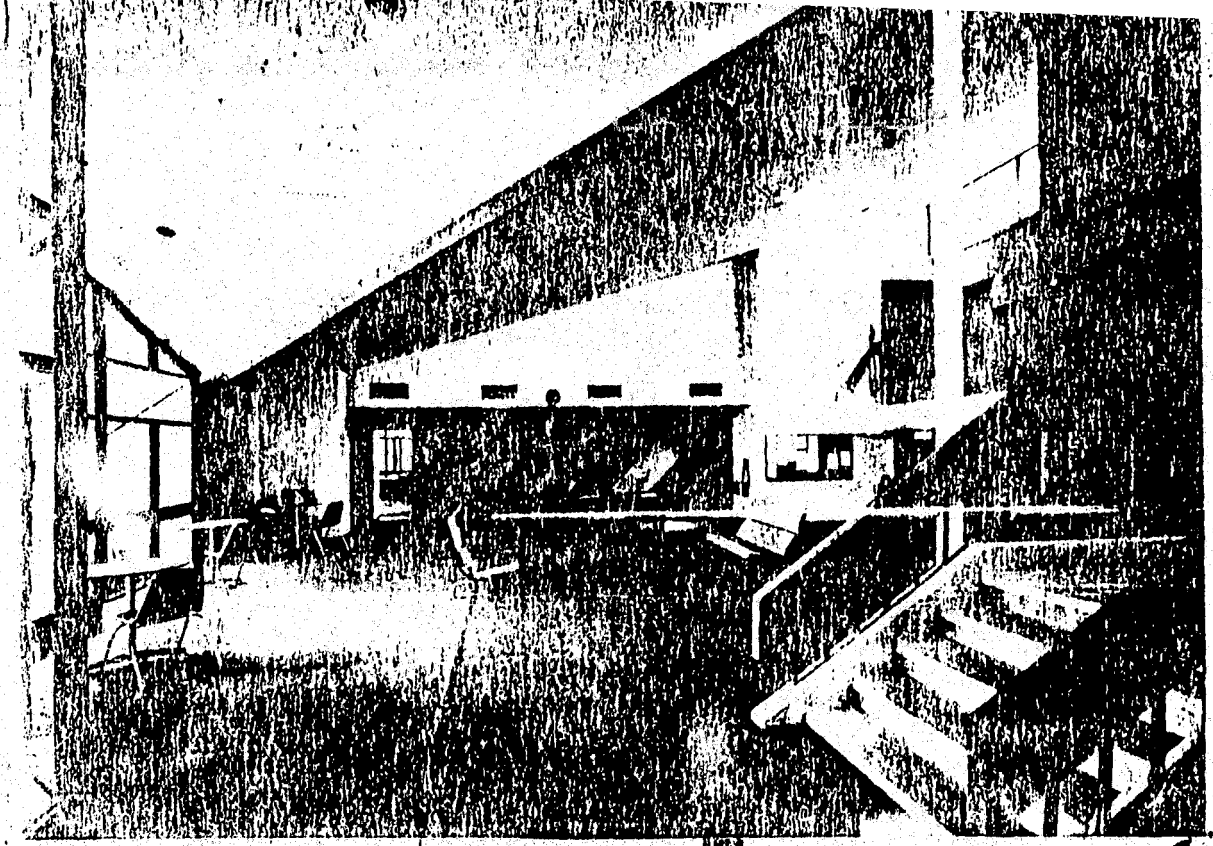
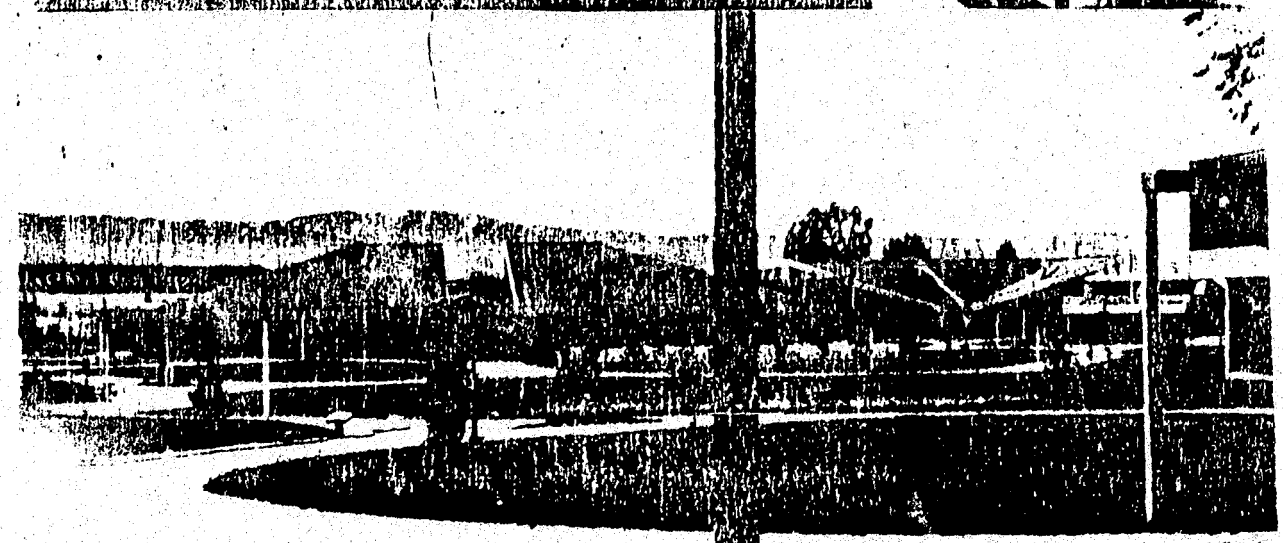
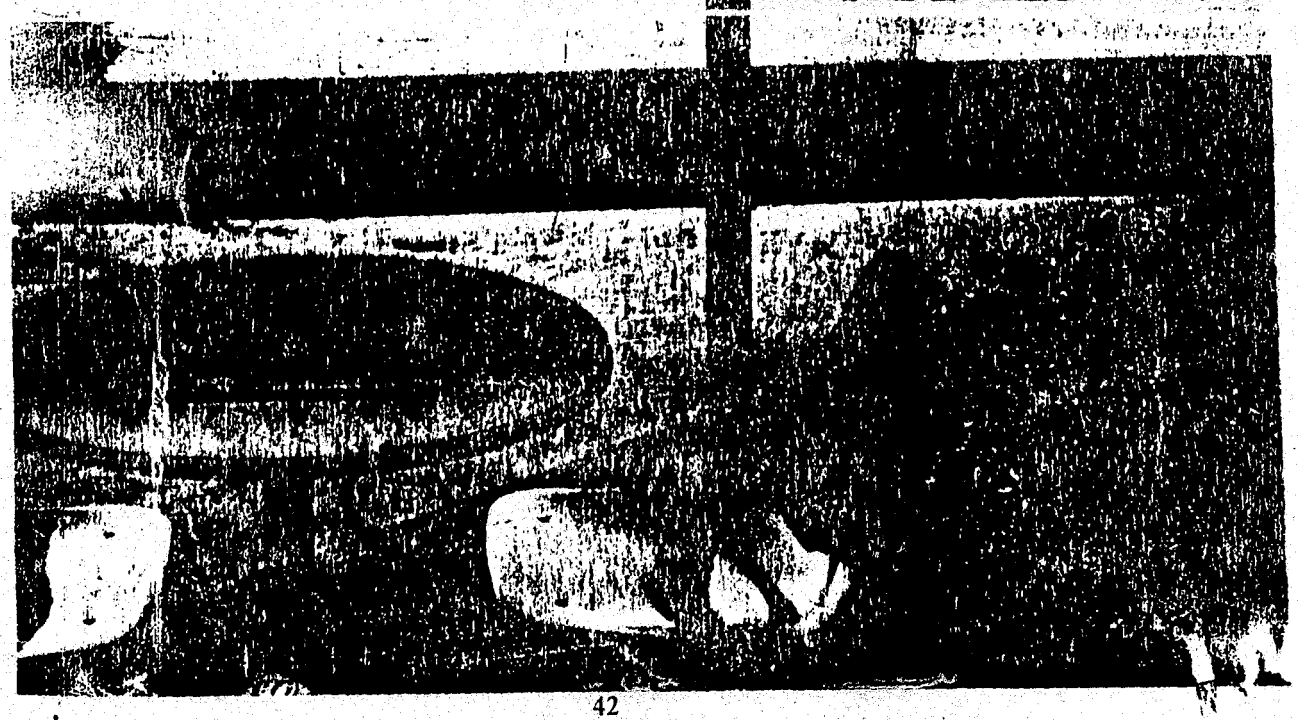








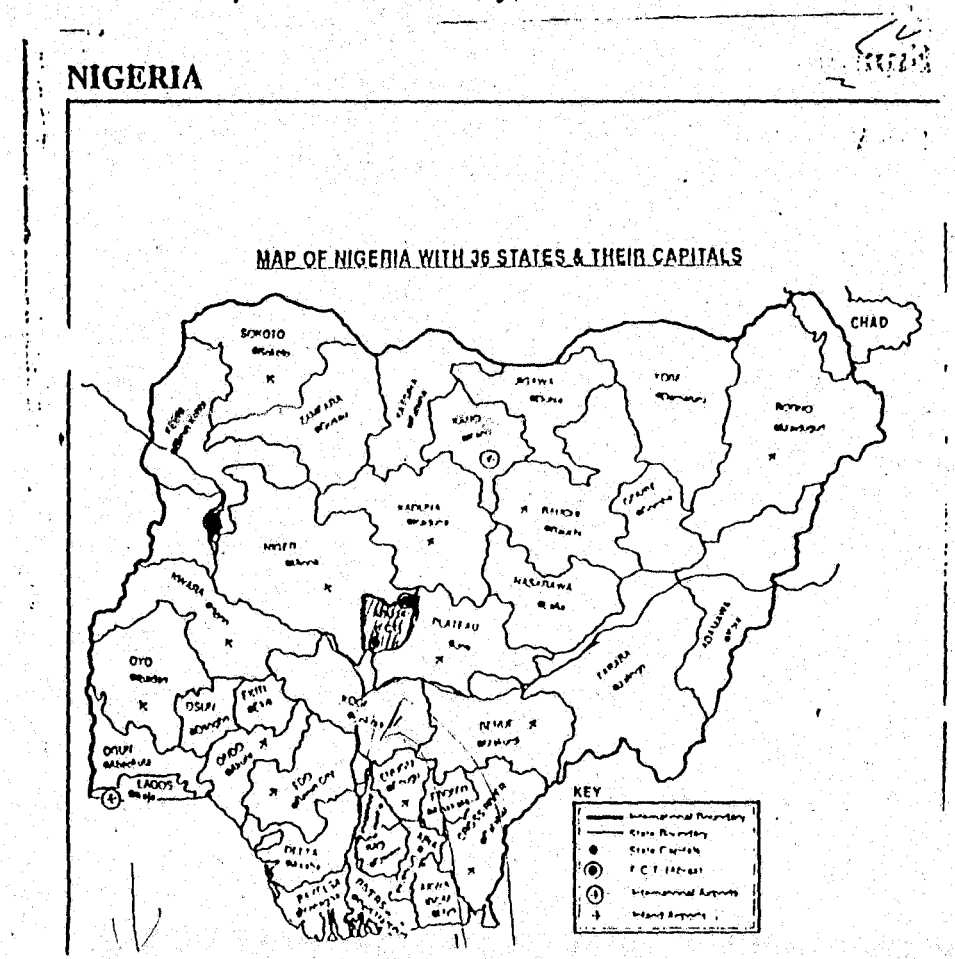


CHAPTER FIVE

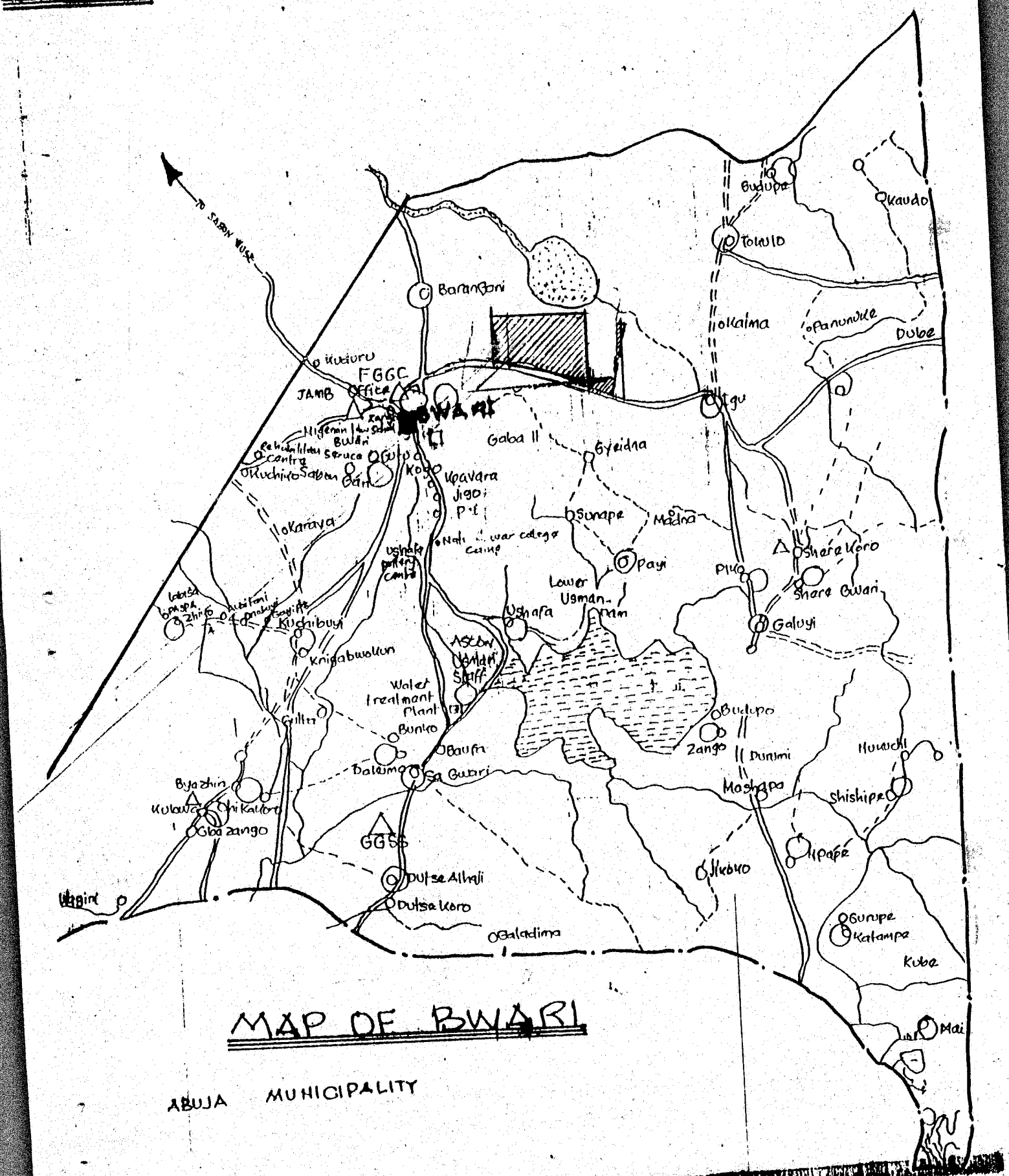
5.0 THE SITE

5.1 LOCATION

The Federal Capital Territory is located in the less developed middle belt of the country. The site was selected by the location committee, an 8000 square kilometer area, surrounded by Niger, Kogi, Plateau and Kaduna States which was defined in 1976 F.C.T. Degree. Located between Longitude 60% 5' to 70' 20' E and latitude 80 3(to 90 i15 N that is, approximately at the center of the country on the Gwagwa plains, lying around the hot and humid low lands of the Niger – Benue, but below the drier part of the country, North.



MAP



MAP OF BWARI

ABUJA MUNICIPALITY

5.2 POLITICAL AND SOCIOCULTURAL BACKGROUND

Abuja, land of hills 250 sq.km, Capital City, located in the northeastern fringes of 8000 sqkm. The territory consist mainly of virgin land dotted with settlements,. Ethnically, its composed of Gwari (64.9%), Koro (8.3%),Gandara (7.9%), Gada (6.5%), Hausa (4.9%) and Fulani (4.6%) (Max Loks Group, Abuja master plan).

The philosophy of the establishment of the new Federal Capital Territory lies in the premises of the late General Murtala Muhammed idea, an area that should not be within the control of any ethnic group in the country, virgin land for all Nigerian, a symbol of oneness and unity.

Abuja is yet to organize a new political structure which is reflected by the amended basic constitution and transitional provision service of 1990, such as to allow the Abuja municipality council to consist of an elected mayor, deputy, supervisors and secretaries to the municipal governments which is an autonomous entity relating directly to the federal government.

The political status and administration, according to former president Ibrahim Babangida would be in such a manner as to avoid the politic, constitutional and administrative confusion, which had been part of Lagos problem

5.3 PHYSICAL CHARACTERISTICS OF ABUJA

5.3.1 VEGETATION

The vegetation type in Abuja area, like most other places within the middle belt zone is Sudan Savannah. Although there was great destruction of this vegetation in the city, also there was a plan to preserve the natural cover in some places where is unnecessary to remove then in order to reduce digression. Some others, which were cleared for agriculture, were later turned to shrub Savannah.

Adjacent to the city, wood lands are being preserved or their value as aesthetics and recreation sources.

5.3.2 TOPOGRAPHY

The central city of Abuja is situated in Gwagwa plains, which is on the north eastern section of the F.C.T. The general elevation of this plain is about 305m in the west to 610m in the east within the area of the city. But because of wideness of this plain, the average slope is less than 15% Granite Clusters occupy about 8% of the total plains and other plains like Iku – Gurara plains in the west and the Robo plains in the, south are surrounded by chains of hills and ridges, (Max locks groups, Abuja master plan).

5.3.3 GEOLOGY

With the Federal Capital city itself, the major underlying rocks are categorized as below:

1. Metamorphic Rock, underlying majority of the city site and also in it's various forms in and around the Usman River Valley.
2. Igneous Rock of large intrusive masses forming dissected zones of the Zuma, Bwari and Aso hills.
3. Sedimentary Rock are located in stream beds in Abuja territory.

The above rock structure has not course any major restriction for any structural proposal up till date.

5.4 CLIMATIC CONDITIONS OF ABUJA

The climatic conditions of Abuja is been determined by the pattern of variations of several elements. These elements are as follows:

5.4.1 RAINFALL

Rainfall is seasonal in Abuja area, rainy season normally spans the period of the month of April through October and the remaining part of the year are dry months. As with most tropical locations, rainfall

depth is about 1,500mm in a year with duration of about 200 days in a year.

5.4.2 TEMPERATURE

Abuja area records it's highs temperature during the dry season when there are few clouds in the sky. 17^0C has been recorded as changes in temperature between the highest and lowest temperatures in a day. During raining season, the maximum temperature is lower due to dense cloud cover.

5.4.3 WIND/DUST

Abuja is dominated by two Major air masses. These are the tropical maritime air mass and the tropical continental air mass. The tropical maritime is formed over the Atlantic Ocean to the south of the country which is warm and most. It moves in a south-west to northeast direction. The tropical continental air mass is developed over the Sahara Desert and is warm and dry. It blows in opposite direction of northeast to southwest. The oscillation between these two air masses produces a highly seasoned character of weather conditions in the country. the tropical continental air mass is associated with dry season, while the maritime mass is associated with wet season. The two masses are characterized by the presence of prevailing wind.

The tropical continental mass is associated with northeast trade wind while maritime is associated with south west monsoon winds.

There is variation of intensity of each type of wind in a particular place, due to interference of those two masses.

In June, only the southern flow of air component dominates, while northern flow always weak which brings lost of rain. However, the southeast trades wind become the dominant wind October and March, which bring dryness, cloudy and dust which is associated harmattan season.

5.5.4 SUN / CLOUD COVER

During the dry months (November and April) the monthly variation of amount of sunshine follows the general trend of an increase from over 275 hours on the city. As the rainy season approaches the cloudiness increases. The city site is exposed to 2500 sunshine hours annually (Mobaginje 1997). The decline in sunshine hours becomes more intense as the rainy season progresses and it gets to it's lowest value in August. At this period there is an inversion in the city where there is less sunshine hours compared to the southern parts of the territory.

5.5 SITE SELECTION CRITERIA

The selection of site for this thesis was based on an evaluation of candidate locations according to the following major factors:

5.5.1 MACRO SELECTION FACTOR

These are:

1. Urban Habitability: Habitability of an urban environment is defined by a combination of environmental factors including soil characteristics, vegetation, quality, geological characteristics, probable conservation zones, quality of climate and suitability of terrain. By itself, no environmental factor is particularly meaningful to accredit location for habitation. Unless it is interpreted and made relative to some other factors which may transform such a factor either into useful or useless measures for site selection. The following correlating factors were considered in conjunction with the aforementioned factors:

(i) Most comfortable and healthful site

(ii) Suitable climatic conditions

(iii) Adequate / sufficient size to allow for future expansion.

(iv) Buildable soil, not requiring special engineering measures for construction.

To be able to find whether an environmental character is suitable for the purpose in question, such as character must be tested under the following negative criteria:

A. **Slopes of over 15%:** Some sites present construction problems through their slopes. Buildable slopes ranges from 3% to 15%. Slopes over 15% are not suitable.

B. **Poor Soil:** Poor soil is a soil type characterized by:

i. Many types of laterite

ii. Valuable drainage

iii. High propensity to erosion

iv. Medium drainage density.

C. **Reverie, Rainforest and Swamps:** These are very expensive to develop

D. Geology faults, joints or share zones.

2. **Accessibility:** This criteria is preferably treated on it's own simply because of it's importance. Some sites may be habitable, but there may not be an easy access to it.

5.5.2 MICRO SELECTION FACTORS

These are man-made constraints, which includes adequate space, water, power, waste disposal, playing requirement and infrastructure services.

5.6 SITE ANALYSIS

LOCATION

The chosen site is in Bwari district of the Federal Capital City. The Bwari district is situated North-west of the city, adjacent to the Abuja Municipality. The site is on the North east of Bwari, outpatient of the town, but easily accessible because of the major road that passes the front. Also the site is not in an obscure area as it can be seen from the main road.

View of the site is generally good and interesting with a vast expense of bush green fields. The major source of noise is from the major roads and due to vehicular.

AREA OF SITE

The site covers a total area of land. This give room for the erection of the necessary facility needed in Borstal Home.

SITE VIABILITY FACTORS

The site is not centrally located within the city. This singular demerit has been overwhelmed by the numerous merits associated with it. A Borstal home is a place where enough vast land should be available for. These characteristics are not only for control of security alone, but also for adequate availability of size of land needed for the necessary facilities.

SITE ACCESSIBILITY

The site is easily accessible from the city. This is being made possible by the construction of secondary feeder road which is tapped from the Abuja – Suleja road. With the effective network of well planned tarred and untarred roads currently existing within Bwari, access to the site is very viable as it is presently linked up. Vehicles easily reach access from other towns.

SITE GEOGRAPHICAL / GEOLOGICAL FACTORS

The effect of the site geographical factors on design cannot be over emphasized. The most relevant things are soil, topography and vegetation. Generally, the soils underlying Bwari area is predominantly derived from granite and their suitability for development varies with depth. By observation, the entire site is relatively flat in terrain.

SITE CLIMATIC FACTORS

The basic climatic characteristics of Bwari via Abuja have been discussed in previous chapter. However, the basic climatic elements like sun, win, precipitation, and temperature have tremendous influence on building design in a given locality.

CHAPTER SIX

6.0 DESIGN CONCEPT AND CONSTRUCTION

6.1 DESIGN CONSIDERATIONS

Design consideration is divided into environmental considerations and climatic considerations.

6.1.1 Environment Considerations

Environment profoundly affects human development. Man in his daily life constantly responds to buildings, landscapes, tree and other elements of the non-human universe as much as he does to social experience. The openness of vast plains or seashores makes the body and mind different from what they would have become in the subdued light of forest clearings or mountain valleys.

Any good building respond not only to the climate and other environmental condition in its own area, but also to the traditional way of lifer of its users.

One of the primary functions of any building is to counteract at least some of the main disadvantages of the climate in which it is situated by filtering, absorbing according to their adverse or beneficial contribution to the comfort of its inhabitants or users.

The analysis of physiological requirements is based on the outdoor climate and not on that expected within the building in question. Well designed can provide comfortable condition without the use of expensive, energy consuming mechanical equipment. This is only possible if climate is taken into account from the onset, it is taken into account when deciding on the overall concept, on the layout and orientation, and on the shape and character of the structures among other things.

Some measure of relief from climate stress can be obtained through skillful designed, but comfortable living is often assisted by adaptation of individual life-style, which the designer must also take into consideration.

6.1.2 Climatic Consideration

I Site Features

Climatic design is based on typical or normal weather conditions at the site. It is obvious that a building in the tropics should differs from one situated in the temperature zone, but even less obvious that there are microclimatic differences, within the same areas, which should be recognized in the design and construction of buildings.

(a) Topography: The shape, orientation, exposure, elevation and hills or valleys at or near the site must be investigated as they can have an effect on not only temperature but also the distribution of solar radiation, wind and perception.

(b) Water: The proximity of water bodies can moderate extreme temperature variations. Humidity may also be affected, depending on the general temperature pattern. The larger the body of water, the greater its impact on the microclimate.

(c) Ground surface: The portion of solar radiation which reaches the earth raises the temperature of the ground. The amount of this radiation depends on latitude, the season, the slope of the ground, the hour of the day and the nature of the terrain.

A peculiarity of microclimate, therefore, is that the closer one approaches the ground extreme it becomes.

The natural cover of a terrain tends to moderate extreme temperatures and stabilize condition. Plant and grassy cover reduce temperature and reduce humidity.

(d) Vegetation: Vegetation provides protection against glare, dust and erosion it can, however, be disadvantageous when left close to a building, as roots can damage foundations, drain pipes, leaves can block gutters and desirable air movement can be drastically reduced or directed away over the building.

(e) Windbreaks: Physical features such as neighboring buildings, walls, trees, etc may influence air movement or cast shadows and, as such, musty be taken into account.

Though the general climate is essentially unalterable, the climate of a specific portion of the land can be influenced easily and altered by design.

II. Orientation:

The orientation of a building determined by the climate factors of wind and solar radiation as well as by the view, noise and requirement of privacy which may, at times override the climate consideration.

III. Form:

The shape of a building affects the heat gain or lose. The most satisfactory shape is one in which the building is elongated in some general east-west direction. With a proper orientation, this shape minimizes the solar radiation impact on the outside walls and provides a cool area within the building.

The use of courtyards provided with water and plants acts as a coaching well and modifies the microclimate. These elements also help to raise the very low humidity of the air to a more comfortable level.

IV. Structures:

The amount of heat penetrating a building depends largely on the nature of the walls or roofs.

With appropriate properties, it is possible to achieve and maintain comfortable internal temperatures over a wide range of external conditions. The materials and types of constructive to be used must be

assessed in term of abosrptively / emissivity, insulation value, and thermal capacity.

V. Shade:

The impact of solar radiation on building in hot climates must be reduced not only by orientation and effective design of the structure, but also adequate shading. Though it is not always convenient or economical to shade roofs and walls. Various methods are available for screening walls and windows, and when deciding on the shading requirements each façade must be separately considered to achieve the most effective solar control.

(a) Vegetation: Existing trees and shrubs provide the simplest way of protecting a low building (or part of it) from solar radiation.

(b) Horizontal screens: These are most effective against a high sun and are normally used on the north or south sides. The nearer one is to the equator, the easier it is to screen these facades with a roof overhang. The overhangs are generally sufficient to protect the interior of the building from slanting sun and driving rain, as well as to provide shade over some portion of the surrounding floor slabs and also common forms of horizontal screening.

(c) Vertical screen: These come in form of closely spaced columns, vertical fins or rotating louvers are useful against the low sun on the east and west facades.

Combine vertical and horizontal screening the egg-crate grill, for example – can be effective for any orientation depending on its depths and the dimension of the openings. Whatever type of screening used should be placed outside the glazing, be of low thermal capacity materials to ensure quick cooling after sunset, and should be designed to prevent not only reflection on to any part of the building but also trapped hot air.

VI Glare and Daylight

One of the problems in hot climates in to exclude not only radiant heat but also glare, while at the same time admitting sufficient daylight. To achieve comfort in daylight, the building must be properly oriented on site. This is the primary consideration. After this, roof overhangs, positioning of windows, recesses in the walls can also be used to eliminate glare as much as possible.

Natural ventilation and air movement perform three separate functions. The supply of fresh air for health, the cooling of the interior by convention, and the cooling of inhabitants under certain circumstances. The forces producing natural ventilation in buildings as result from air changes caused by differences in temperature and by air movement produced by pressure differences. The only natural force, which can be relied on for the provision of thermal comfort, is the

dynamic effect of winds and every effort must therefore be made to capture as much wind as possible.

Indoor airflow is affected by various factors including orientation, vegetation, and cross ventilation.

6.2 DESIGN CONCEPT

Within a given architectural problem, it is important to be sensitive to the nature of the concept being used. The building concept aim is to satisfy the design goal, objective and may symbolize the function of the building.

In the tropics, the building is designed to expel heat energy rather than conserving it, as it is in the temperature region. For this reason, I thereby employed courtyard concept system. As we all know that cross ventilation is very important.

Courtyard concept give a space within a building without a roof, but enclosed by walls, which allow air to enter easily and move freely through the rooms and the entire building.

6.3 DESIGN PHILOSOPHY

To achieve the various outlined objectives of the projects, guiding principles have to be held onto the design philosophy includes:-

1. Consider what the designer wishes to express through the building as well as to its adaptability and usefulness for the activities it is to entail. The building should be a friendly place attractive and should be

designed for maximum use at minimum cost. Also the design should be evident from outside i.e. without being told what is put on ground, individual should be able to guess right what function it is being used for.

2. The element of control of the buildings should be given major consideration. Security room, officer in charge office and porter office should be related to the activity areas to be supervised by respective staff members.
3. Maintenance base. The rooms to be used by inmates should be readily be reduced. All interior decorations and construction should have a colorful appearance, durable and easy to maintain.

6.4 DESIGN BRIEF

The reformatory center is a correctional system involving specialized treatment of young offenders between the ages of 16 and 21. The correctional approach is based on the theory of individualized treatment of youthful offenders.

The Borstal Home should be designed in such a way that commitment of inmates to such a correctional institute at any level should be a positive turning point in the inmates life.

In addition, the center should be designed to stress close staff inmate relationship, discipline, school, vocational training, religion enlightenment, and an homely environment and an homely environment.

The kind of education in such an institution should not only be academic and occupational skills alone, but include the social adjustments and related problem solving skills necessary for life outside the institution. The kind of training is to enable the returning offenders to become self-supporting and to escape the poverty cycle, which is so highly correlated with criminal and delinquent behavior.

The site is planned on a relatively flat land located in Bwari local government. It consists of three housing type with a capacity of 150, 200 and 250 people at minimum capacity and with a total capacity for 600 inmates. This permits free movement within the site and control by a perimeter fencing and electronic detection system, but without the usual auspicious guards' towers.

The commitments and supervision of the home are for approximately three gears.

The architectural goal of the proposed Borstal Home based on the brief would be translated into the following facilities:

1. Administrative Unit
2. Admission unit
3. Welfare unit
4. Education unit
5. Dormitory unit
6. Canteen unit
7. Clinic unit
8. Mosque unit

9. Church unit

10. Recreational Area

11. Staff quarters

6.5 SPACE REQUIREMENT

The criteria for the space derivation is thus as follows:

1. Furniture utility space

2. Circulation space

3. Furniture operational space

Below is a list of space requirements.

Administrative, Admission and welfare units

Principal office	5 X 6
Secretary Office	3 X 6
Vice Principal Office	4 X 6
Toilet	1.5 X 3
Offices	5 X 6
Board room	7.5 x 13
Reception	10 X 11
Probation officers office	6 X 10
General store	5 X 6
Tutors office	8 X 15
Toilet	1.25 X 2
Officer in charge Office	6 X 10
Cell	3 X 4

Dinning	11 X 15
Servery	4 X 8
Changing room	3 X 4
Educational unit	
Class rooms	8 X 10
Hall	10 X 20
Library	4 X 10
Toilet	.25 X 25
Reception	8 X 10
Maintenance office	4 X 5
Outside workshop	18 X 46
Workshop(1)	8 X 15
Workshop(2)	9 X 10
Workshop first floors	4 X 15
Store	2.5 X 5
Workshop show glass	2X 5
Dormitory and Canteen Unit	
Single rooms	3 X 6.5
Room1	6.5 X 10
Room2	6.4 X 11.5
Laundry	5.5 X 11
Toilet	1.25 X 2
Bath	1.25 X 2
Stair case	3.5 X 4.5

Reception	5 X 7
Chief porter officer	5 X 7
Common room	12 X 21.5
Evening discussion room	12 X 15
Sit-out	17.4 X 40
Dinning	28 X 32.5
Office	4 X 5
Changing room	3 X 6.5
Toilet	1.5 X 1.25
Wet store	3 X 5.5
Dry store	4 X 8
Servery	3 X 10.5
Kitchen	10 X 10 + 7 X 11
Kitchen yard	5 X 10

6.6 MATERIALS AND CONSTRUCTION

6.6.1 BUILDING MATERIAL

The array of available building materials for use is extensive. In addition, as extensive as they are, so as extensive the purpose for which they variously apply. However, choosing a building material type depends on the following factors:.

A. Availability: The material must be readily available for use whenever needed.

B. Durability: The material must be of the type that is able to survive the actions of the elements under given circumstances.

C. Cost: Only materials, which are affordable at the time, shall be specified for a purpose.

D. Suitability and Aesthetic

Airapeter D. in his book, Architectural Material Science said that, the technologies of materials and optimum applications, technologies of material are very important in architectural profession. In the past, it was a tradition norm that "architecture follows materials". Today, however, the reverse is the case "Material follows architecture". This is belief to be the result of recent advancements in science and technology of architectural materials.

A good knowledge and understanding of building materials are of great usefulness to all persons whose professional activities are, in one way of another interwoven or associated with architecture and building construction. Without at least a fairly comprehensive knowledge, Airepeter said, of the present time building materials, one will never be able to design, left alone to build up any structure, be it primitive or contemporary.

This materials are:-

1. Timber
2. Sandcrete block
3. Aluminum sheets

4. Concrete

TIMBER

Timber is a wood sawn and ready for use in construction work. It has many advantages as a building material. It is a lightweight material to be used for roof structures, frames and doors generally. As a structural element, its weight is favorable to cost, strength, modulus of elasticity ratios and co-efficient of thermal expansion. With sensible selection, seasoning fabrication, and assembly, it is a durable material in relation to most building life.

ALUMINUM SHEETS

Aluminum roofing sheets will be used for this proposed Borstal Home. Pure aluminum sheets, which contain at least 99% aluminum, shall be used. Because they (sheets) have moderate mechanical strength and can be readily bent and beaten into quite complicated shape without damage. The usual sizes of sheets used are 1.8 x 600, 1.8 x 900 and 1.2 and long span sheets. In this proposal, the long span sheets shall be used.

SANDCRETE BLOCK

This will extensively be used for load and non-load bearing walls, either externally or internally.

The aggregates are sand, cement, and water. The usual mix is 1 part cement to 6 or 8 of aggregate by volume.

CONCRETE

Concrete is a building material consisting of Portland cement, sand, gravel and water which binds the aggregates into a rocklike mass as the mixture hardens via the chemical reaction of the water and cement. This material will be extensively used in this proposal.

As already mentioned, the aggregates are sand, gravel and the commonly used aggregates for preparing concrete. These aggregates should be clean, free from dirt or debris of vegetal matter. The type of mixture is dependent on the purpose of use.

6.6.2 CONSTRUCTION

SITE INVESTIGATION

This is the first step taken prior to any construction. It involves taking stock of what is on the ground, above and below the ground, this includes the numerous facilities present on the soil for instance existing feature on the site like electric pole, drainage, structures, and so on. The solid and topography of the site is also studied i.e. site analysis which would help in determining the depth and type of foundation to be used. The soil bearing capacity, determination of water level of the soil, to be able to predict settlement of the selected foundation and lastly provision against constructional difficulties.

SITE CLEARANCE

In most cases of building construction, this project not being an exception, the builder in possession of the site, the site lay out plan and the necessary drawings for erection of building. The setting out only completes the operation of site possession or clearance. Site clearance involves the removing of all unwanted features on the site before the setting out.

SETTING – OUT OF SITE

Establishing the baseline for the whole building is the first task on site, which is called setting out of site. The position of this line must be clearly marked on the site so that it can be re-established at any time. Steel tapes should be used for measuring the site, 30mm suitable length, linen tapes tend to be stretched. After setting out the baseline, it should be marked using a start peg.

ESTABLISHING A DATUM LEVEL

It is important that all levels in a building area should be taken from a fixed point called datum. This point should be established and must relate to an ordinance benchmark.

This is an arrow with a horizontal mark above the arrow. The Center line of the horizontal being the actuarial level indicated on an ordinance survey map. When there is name on site, a suitable permanent datum must be established.

FOUNDATION

Foundation is base on which a building rests and its purpose is to safely transfer the loads of a building to suitable subsoil. In the dormitory canteen design, because of the massiveness, raft foundation is being used.

Concrete foundation would be the reinforced type to reduce cost and ease construction, but will required the services of a structural engineer to formulate an economical design. The engineer must define the area in which tension occur and specify the requirements, since concrete is a material weak in tension.

Strip foundation is made up of continuous reinforced or plain concrete under load bearing wall. The foundation spreads load to an area of subsoil capable of supporting load without undue compacting. It would be appropriate for the administrative, admission, welfare blocks, and gate house.

Pad foundation is suitable to accommodate the structural system of the classroom and workshop. Isolated pad foundation at the column points should be used since the soil nature is predominantly cohesive soil with a bearing capacity of 600kn/sq. The foundation type can successfully handle the bearing capacity of the soil type.

WALLS

Apart from the hall interior requiring acoustic treatment on the walls. The walls will be constructed using traditional hollow separated

standard blocks of 450 x 225mm. The wall materials must be durable and able to withstand soluble rafts, atmospheric pollution, and other adverse conditions.

ROOFS

The general principal of roof is to perform insulation, strength, fire resistance, weather resistance and appearance. Most of the structures are roofed and designed to specification. Long span aluminum roofing sheets are used. Timber is used in roofing the supporting facilities provided.

CHAPTER SEVEN

7.0 DESIGN SERVICES

7.1 ELECTRICITY AND LIGHTING

Electricity and lighting is a very important part of building services which was brought about by improved technology, before only natural ventilation and illumination from sun ray is used for the brightening up of the interior, but today most of the services aspect of a building work is through the aid of electricity is a must in a modern building. However, there are two sources of electricity supply to the site, the cheapest is from N.E.P.A. board and alternative power source is from a generator set (pant). The plant is only use when there is outage (power failure) from N.E.PA.

The electricity supply to the Borstal home is in three phase, feed in through underground armored cable from the transformer into the Brostal home. The need for the Borstal home transformer is to ensure that the three phases is always complete and to ensure even distribution of the light to the point of usage. Automatic Voltage Regulator and Circuit breaker are provide for use at all the power and lighting feeders. All the meter, control panel, circuit breakers and other like equipment are kept or installed in a secured strategic position with burglary proof on it to prevent intruders, but with enough space left to take the human hand in case of emergencies.

The internal distribution power within the facilities is through PVC i.e. Pipe embedded in the walls and decks, this is every effective in reducing the spread of fire in case of an outbreak. Light is provided in all the facilities for illumination of the interior at night and also to supplement during the day. Fluorescent tubes and bulbs is mostly used in the interior and halogen and sodium bulb used outside for security purposes.

7.1 HEATING, COOLING AND ENTILATION

In Nigeria, heating of the room is not always done because of its geographical location. For the purpose of this, design cooling and ventilation would be created. The cooling of the interior is necessary when there is heat building in the interior. This could be achieved with ceiling fans. These involve the artificial ventilation of an enclosure or space. For the administrative building and staff quarters split a.c units are used because of the sizes of the space to be cooled. Enough windows are provided for natural ventilation but alternatives for a.c. is also made in case of heat buildup.

7.2 WATER SUPPLY

The water supply to the site is going to be through the water board Lower Usman Dam is not very far from the site i.e. the main pipe is very close to the site and so regular or constant water supply is

certain to the Borstal home. Boreholes are dug at strategic position with pumps and overhead tanks for shortage in case of water failure.

Underground pipes are used in connecting the water to the site from the mains and embedded in walls and floors in areas of application, while doing this an experienced plumber or mechanical engineer should be used to maintain a constant pressure and water flow in the pipes and also the choice of good materials and workmanship to prevent leakage of the pipes in the wall which will cause the weakling of block and floor.

7.2 DRAINAGE AND SEWAGE DISPOSAL

This is a system of pipes (drainage), generally underground used to convey the discharge from roofs, paved areas, and sanitary fittings to a point of discharge or treatment. The discharge of rainwater can be conveyed in a single drain to the public sewers according to the local authority direction based on their treatment. The drainage of the site was designed within the limits of the terrain, even though the site is relatively flat, so that the discharge can flow by gravity from the point of origin to the point of discharge. In addition to this, the pipe sizes and gradients are selected to provide enough capacity for maximum expected volume flow to prevent deposits or overflow. In the case of sewage disposal, it can be defined as a means of conveying waste soil or rainwater below the ground that has been collected from the drains and conveying it to the disposal point. Sewers can be classified into

two, namely public sewer and private sewer. The sewer owned by the Local Authority is called the public sewer while the one owned by an individual is called private sewer. The piping of the waste from the toilet and bathroom point is channeled through the duct and straight to the soak away then to the central septic tank.

7.3 REFUSAL DISPOSAL

Waste baskets/bags are placed at strategic positions within the hostel, dining, administrative, hall and all over the Borstal hone to maintain a good hygiene, sanity and disease free environment. These waste are collected by the porters and dumped at the incinerator located within the Borstal home where it is being burnt or conveyed outside the Borstal home to be dumped at a place designed for refuse dump.

7.4 ACOUSTICS

This can be described as the process by which auditory considerations are minimized. It is necessary for the audience to hear sound evenly from the audience area, the architect must work towards eliminating all unwanted sound to enhance maximum audio production by all members of the audience in the hall, is of equal intensity, acoustic planning must be part of the architectural design and building construction to have a sound acoustic environment. In order to have effective acoustic treatment, there is need to understand the action, transmission and distribution of sound transmitted through air or through

the structure. In dependent treatment is necessary for each of the modes of transmission. Sound transmitted by the structure can be isolating spaces affected by the noise from the whole building. Careful curving is necessary as structure borne sound waves travel efficiently with minimal loss of energy from part of rigid structure to the other. Sound absorbing materials are used with the space involved in order to eliminate air borne sound. In order to control noise, shorten or prolong reverberation and to eliminate echo; leaks such as cracks surround doors back to back light switches, electricity, electric service cutlet pipe, partitions and opening above partitions through which noise may be transmitted.

In acoustics, it is necessary to consider reverberation time as a prerequisite for the equal distribution of sound and sound intensity. Standard reverberation time for various spaces is recorded in applicable data. Reverberation time in direct proportion with the volume of the hall and the inverse proportion to the amount of absorption in it.

7.7. FIRE SAFETY

The safety of the building and occupant is a very important aspect of services. True out break or incidences in the country is becoming rampart and the causes are mostly due to negligence and lapses from the construction. The problems of avoiding the outbreak of fires and preventing their spread is known a "fire prevention" or "fire Protection". The two designations are easily reconciled, for without an accurate and comprehensive knowledge of the hazards involved, it is not possible to

prevent fire; on the other hand, a full knowledge of them usually suggests the remedy.

However, the use of fire – resisting construction method may be adopted. It is impossible to construct an absolutely fire proof building, as all materials are detrimentally affected in some way or other if they are subjected to a sufficiently high temperature but having a high degree of fire resistance and thus hold on the fire for long.

For the purpose of this design segregation method of preventing or restricting fire outbreak to affected area is being used.

In addition, three staircases are provided in the dormitory, for exit and easy movement from all the rooms. Standpipe is also proved in strategic positions within all the functions and its directly connected to the overhead tanks to ensure the flow of water always in case of emergencies. Fire alarms are also located within all corridors in the Borstal home. Last but not the least, portable fire extinguishers all around and public address system should be done to enlighten the juvenile delinquents on what to do in case of an outbreak and how to use this equipment provided.

7.8 MAINTENANCE FACTORS

Maintenance is a major public problem in Nigeria as of date. Most government owned buildings have fallen into a state of disrepair and dilapidation. This is due to the poor maintenance culture in Nigeria today.

This problem has extended its roots deep into the system, ranging from small properties rented out to people and even private homes. In order to alleviate the problem of maintenance, the building materials selected play a major role. All materials selected for the construction of this Borstal home have self-cleaning abilities and long life span. This alleviates the burden of a yearly renovation exercise, also goes a long way in reducing cost of maintenance.

7.9 SOLAR CONTROL

Orientation of the building is very important factor to be considered for maximum comfort of the users. Most of the building/structures on the site at an angle to the north direction. Windows blinds are also used to serve as sun breaking devices. Other including balconies and roof overhangs.

CHAPTER EIGHT

8.0 AESTHETICS, GENERAL APPRAISAL AND CONCLUSION

8.1 AESTHETICS AND GENERAL APPRAISAL

8.1.1 AESTHETICS

Aesthetics is concerned with what is good, beautiful and appealing. It captures human psychological interest. Man look for it consciously and unconsciously. The earliest 'Structures' were purely functional; they were shelters. Yet, on the inner walls of these caves, man produced the first painting incredible and beautiful and lifelike – more than 70,000 years ago. It is therefore important to make aesthetic a design consideration so that the design would be acceptable by man.

Though aesthetic elements are no doubt expensive, the researcher skillfully achieve aesthetics in the project by giving due consideration to the following factors:

A. **Space:** space is vast. It is not created. Architect however captures space and defines it within the scope of a function. When it fits the function, the 'architectural dress' manifests aesthetics. Spaces allocated to the various functions in the projects were consciously done to fit the functions.

B. **Scale:** As shape has to do with the meaning of individual things, scale has to with their physical size and therefore their importance and their meaning in relation to something else. No

matter how important or plain it may be, every part of a building has a size. And so scale, which involve arranging various sizes in order, and choosing particular sizes when the option was available, was the greatest interest of the researcher, just to achieve aesthetics. The available 'Miniature scale' were rejected for the choice of "human scale", to achieve aesthetics.

C. **Proportion:** Proportion plays a good role for one to be able to identify an object. There is scale. There is also this closely related concept of proportion, which has close connection with scale. Thus, a room whose proportions are pleasing at, say, intimate scale, would be disastrous if the same proportions were duplicated at monumental scale. In view of this, proportionality was used also as an instrument of achieving aesthetics.

D. **Rhythm:** Any recurrent or cyclic item, idea, object or function in a time space continuum that can be recognized and predicted, is said to be a rhythm. In this project, the researcher chooses the kind of rhythms that expressed the emotion he wished his building to convey and his capacity to feel that emotion himself. Nothing that any researcher who disclaims any special interest on a project on the grounds that he is " just doing a job", would fail to achieve the expected beauty.

E. **Light:** We perceive light as contrasted to darkness; a symbol of light is space; a symbol of darkness on the other hand is confinement. These cognitive interpretations are so engrained

that what is perceived becomes its symbol – the concrete and the abstract become one and the same. Therefore, the light must shine in darkness. In this view, provision was made to admit natural light into dark interior of the enclosed space and for artificial light sources to compliment the former and complete the course of aesthetics.

F. **Color:** The ability of color to evoke unconsciousness was considered by the researcher as an instrument of achieving beauty.

8.1.2 GENERAL APPRAISAL

The objective of the design is to create a well planned and built environment eminently suited to its functions and the capability of adapting to changes in use.

The architectural approach used seeks to reflect geometric architectural forms and to produce an overall concept in accordance with the geographical as well as socio cultural setting of the area.

The criteria for the location selection is obviously for the fact that, Abuja is the Federal capita; which need Borstal Home to check juvenile delinquents from growing to criminal.

The structural systems used in the design are all durable and easy to construct. Serious attempts are made at achieving natural lighting and ventilation. The structure orientations are in such away to accommodate adequate fresh air. This establishes adequate fresh air

and natural temperatures established within the internal enclosed spaces within the building.

8.2 CONCLUSION

Reforming youthful offenders will help boost our socio-economic standard in the country especially in Abuja that have very rapid growth in population daily, which will definitely make-up for the previous social, emotional, economic and educational deprivation of the average inmate. Just to give them a more meaningfully life, for them not to constitute a nuisance to the entire nation in future.

The correctional approach is based on the theory of individualized treatment of youthful offenders between the ages of 16 and 21.

The design stresses close staff inmate relationship discipline, school, vocational training, religions enlightenment and an honesty environment for their reformation.

The home commitments and supervision are for approximately three years. After the first two years, thee will be a break of two months release to their respective home. In which they shall be under close watch of unknown officer in charge, which will give detail report about their life outside and this shall determine their graduation. In addition, after graduation, the same close watch, for good one year, this is, unknown to them shall determine their final release to the society.

With this, they are expected to find their sojourn worthwhile, as they become better and productive citizens at the end.

APPENDICES

1. Linadac Davidoff: Introduction to Psychology third edition.
2. Francis D.K Ching: Building Construction Illustrated.
3. Rodne Stark Sociology
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5. Louis G. Redstone: Institutional buildings.
6. Maxlocks Group: Abuja Master Plan
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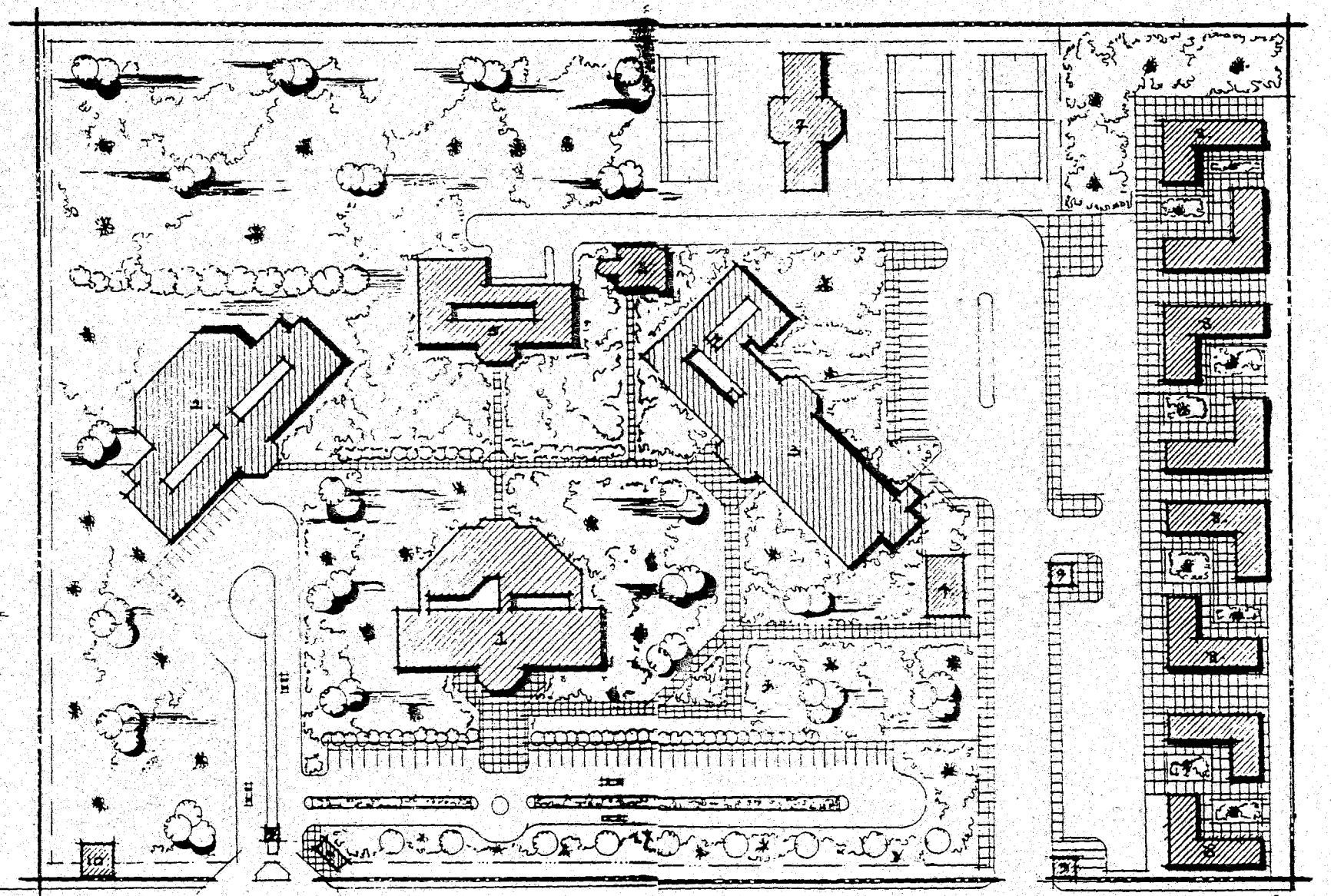
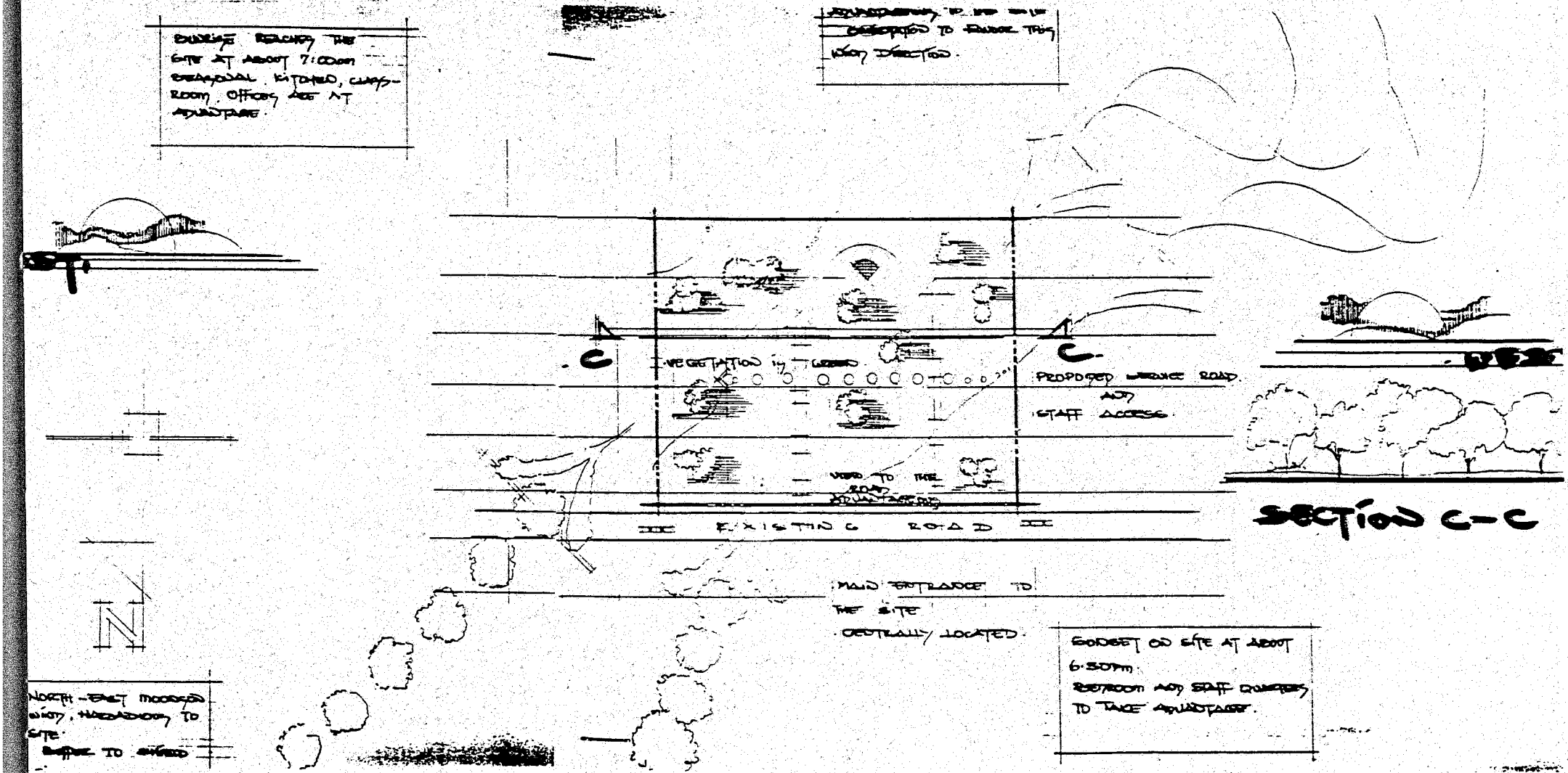
14. Encyclopedia America Vol. 16
15. Encyclopedia Britannica Vol. 18
16. Colliers Encyclopedia Vol. 5
17. New age Encyclopedia Vol. 10
18. New age Encyclopedia Vol. 15

SITE PLAN



BORSTAL


VEGETATION
PROPOSED SERVICE ROAD AND STAFF ACCESS
VIEW TO THE
EXISTING ROAD
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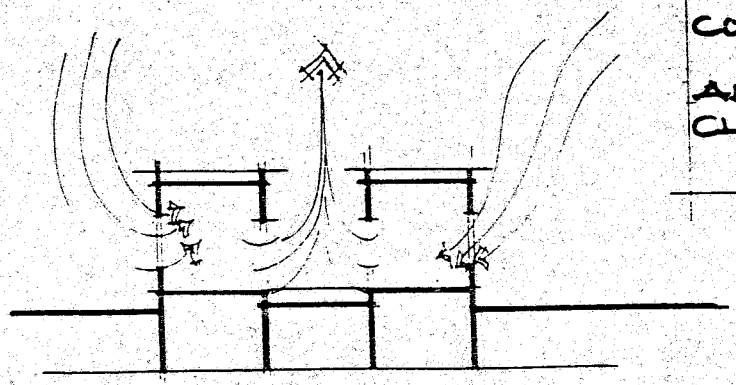
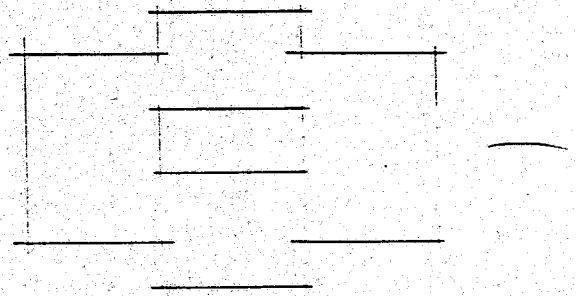
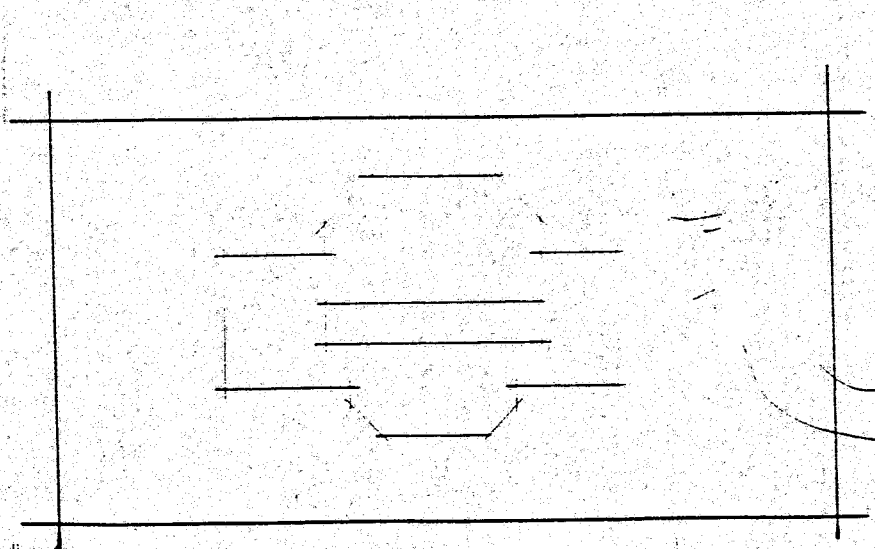
SECTION C-C

COURTYARD CONCEPT —

ALLOW CROSS VENTILATION IN TWO CLOSE STRUCTURES.







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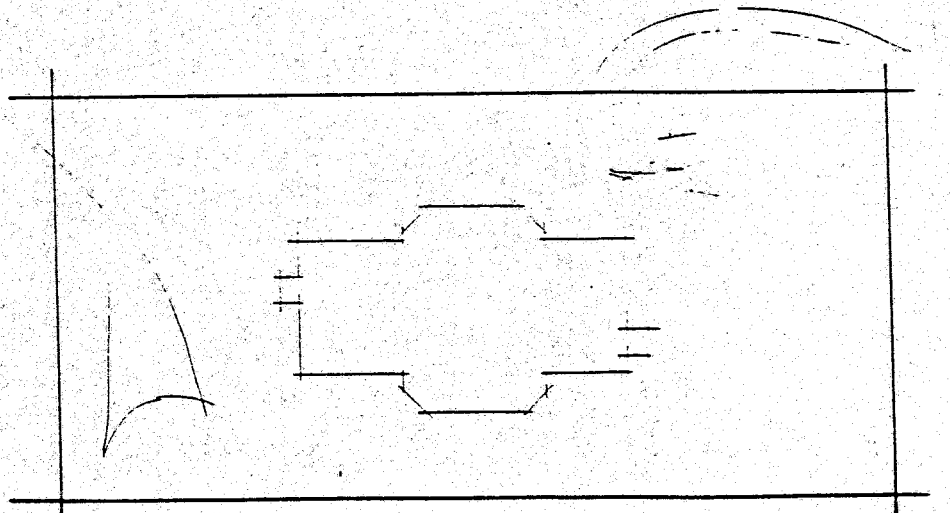

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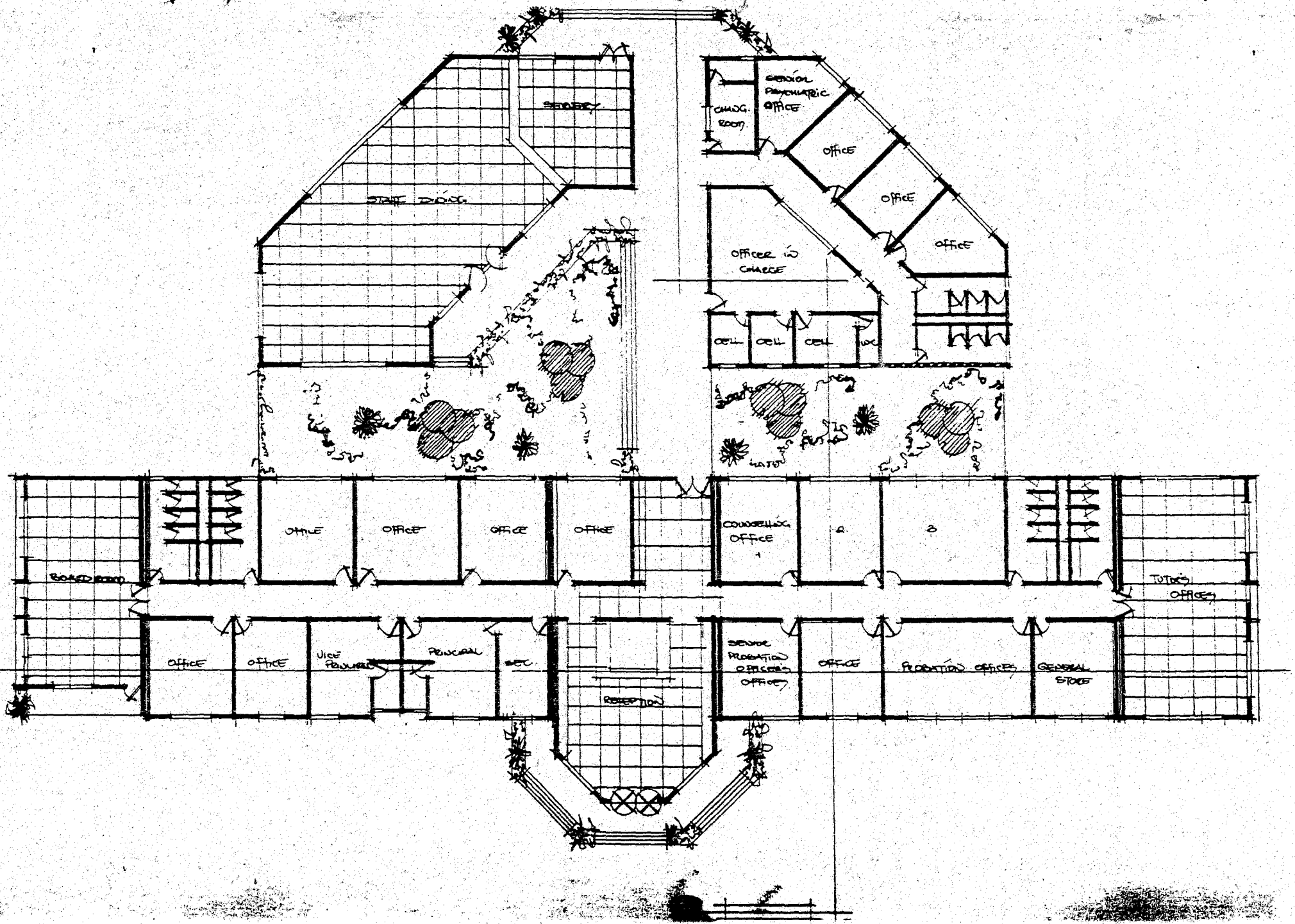
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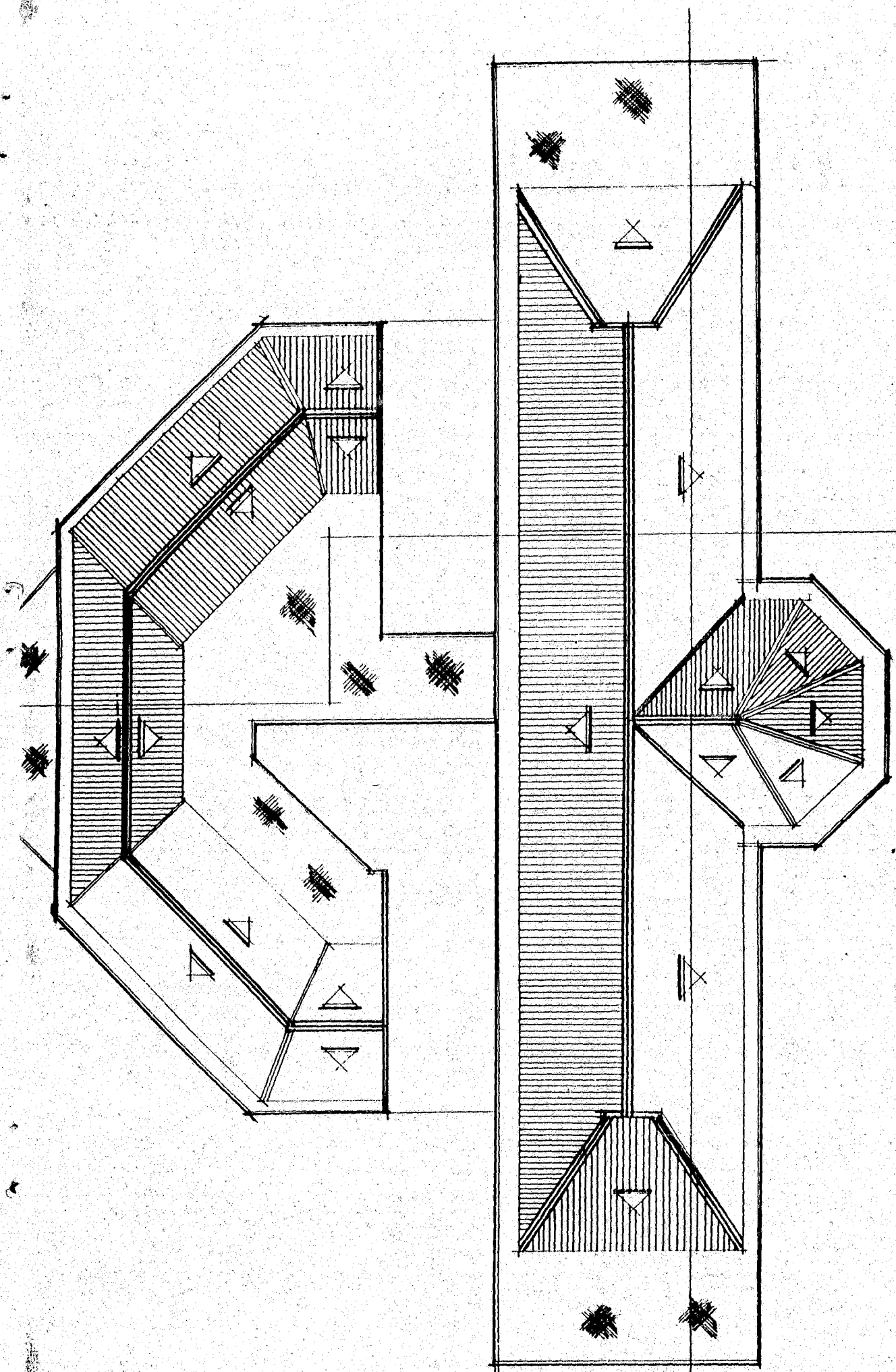

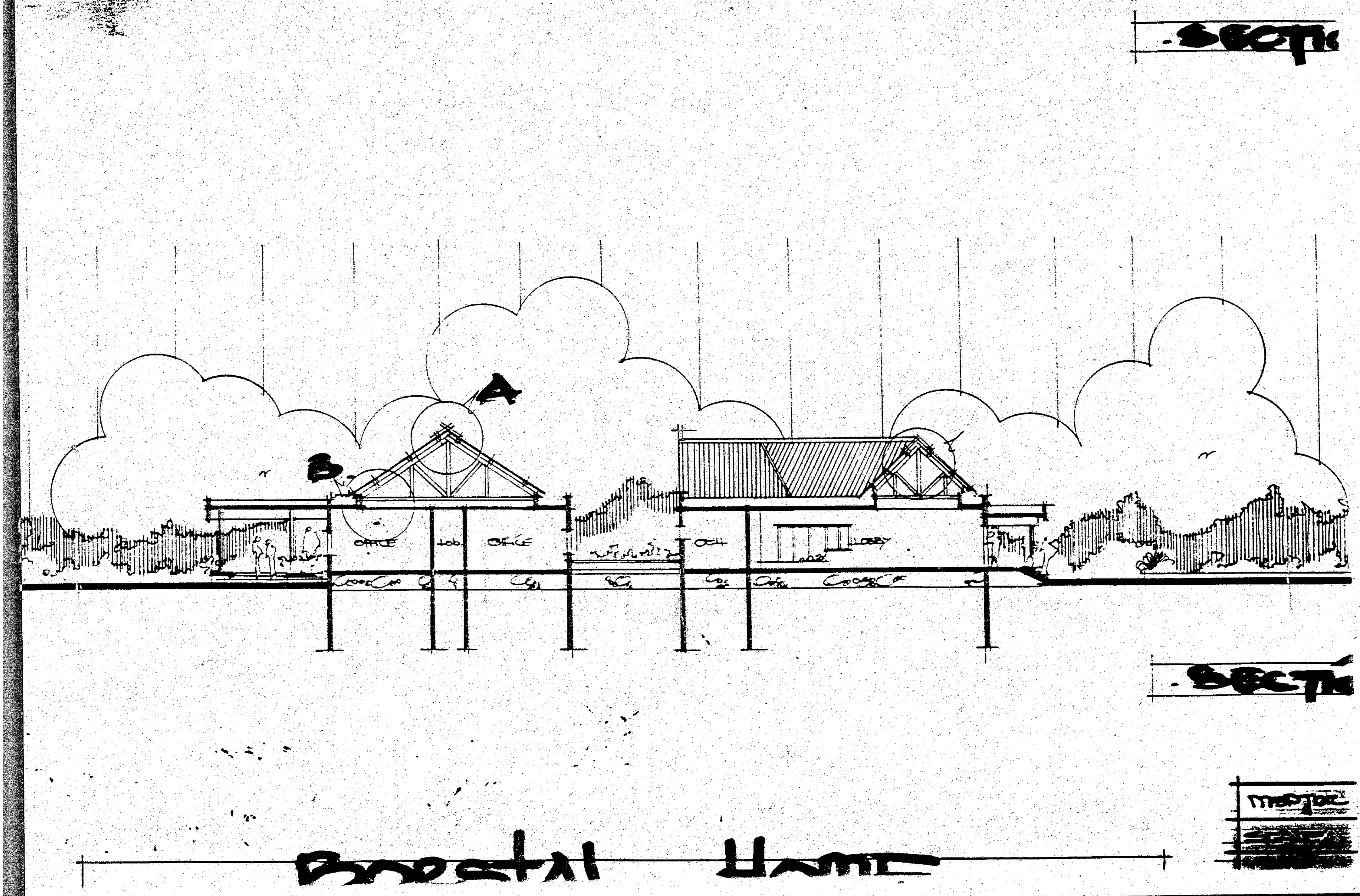
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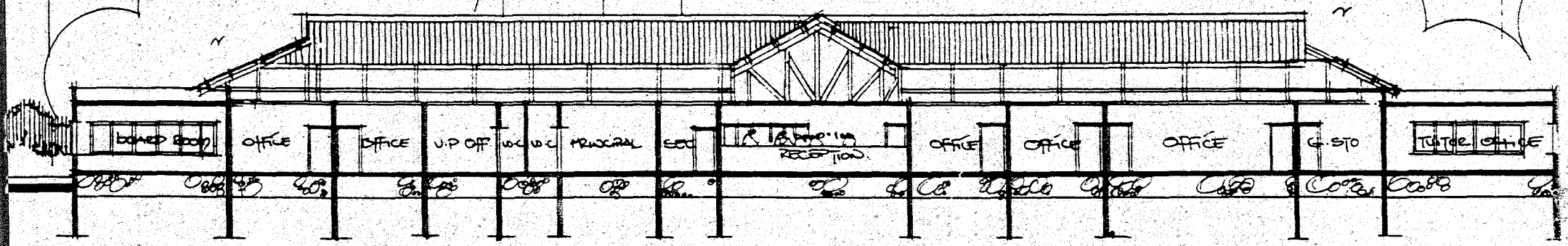
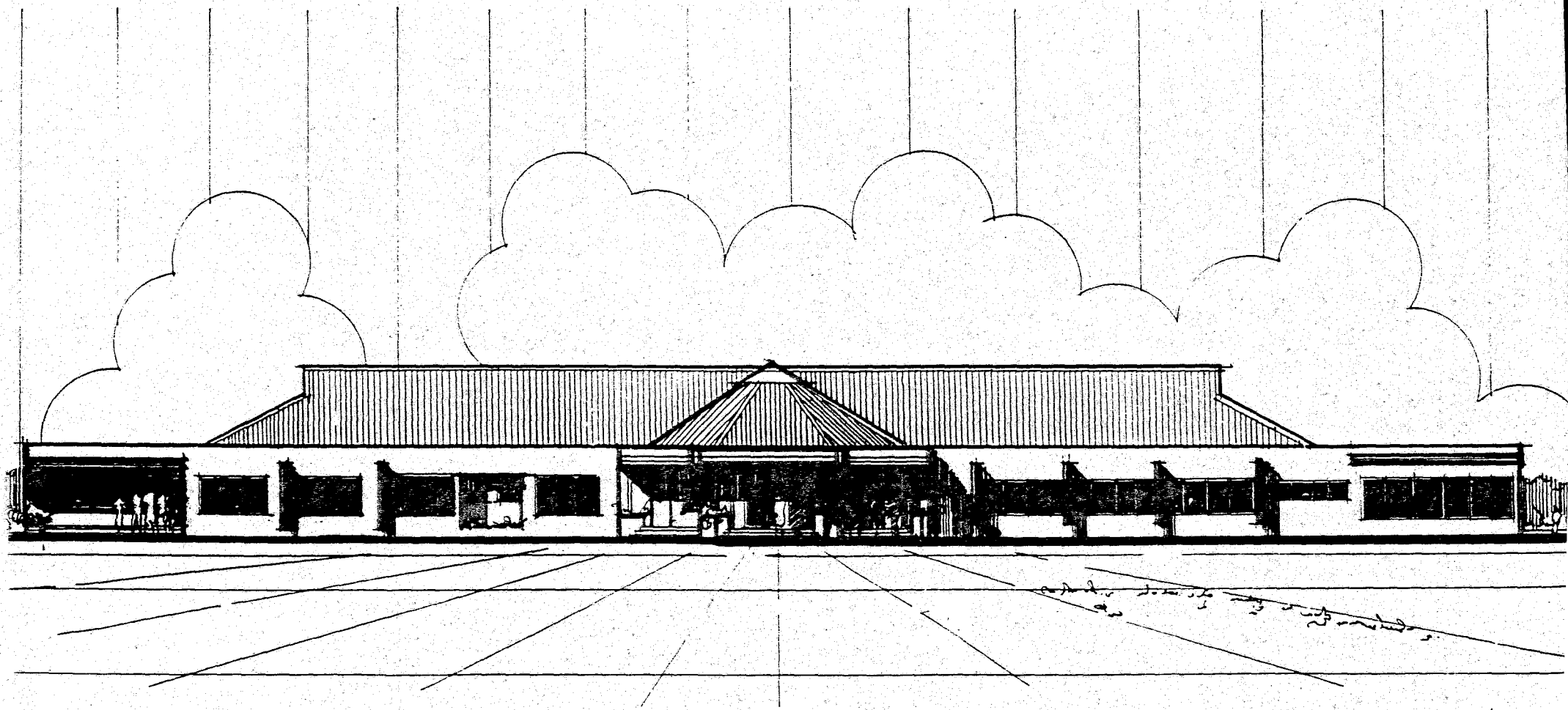
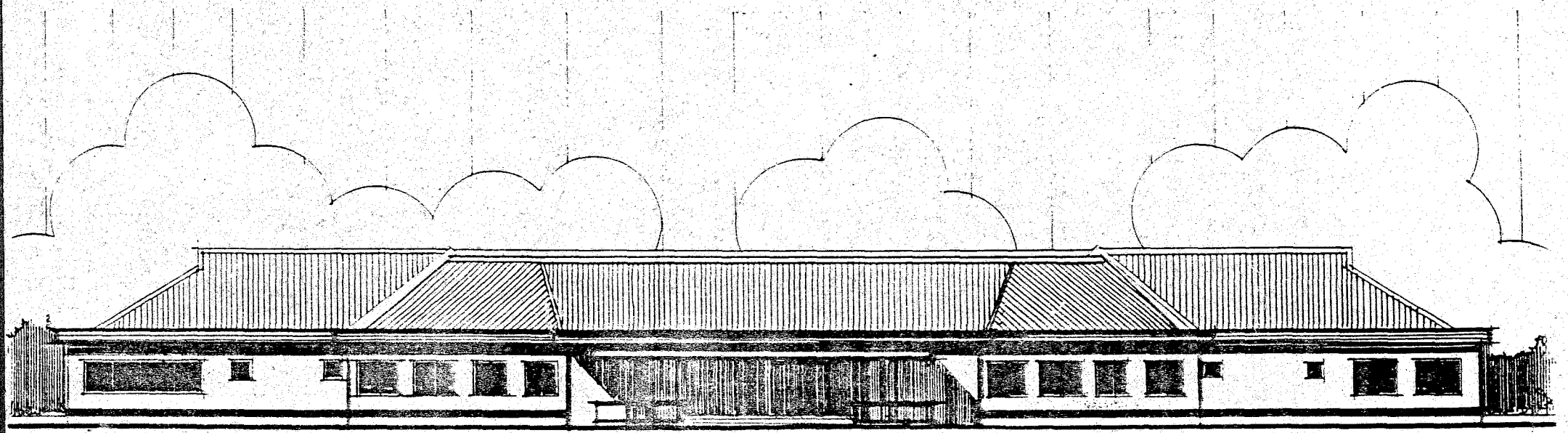
SECTIONS - ADMINISTRATIVE, ADMISSION AND WEL







REAR VIEW.

BOARDING HOME. ARUSHA.

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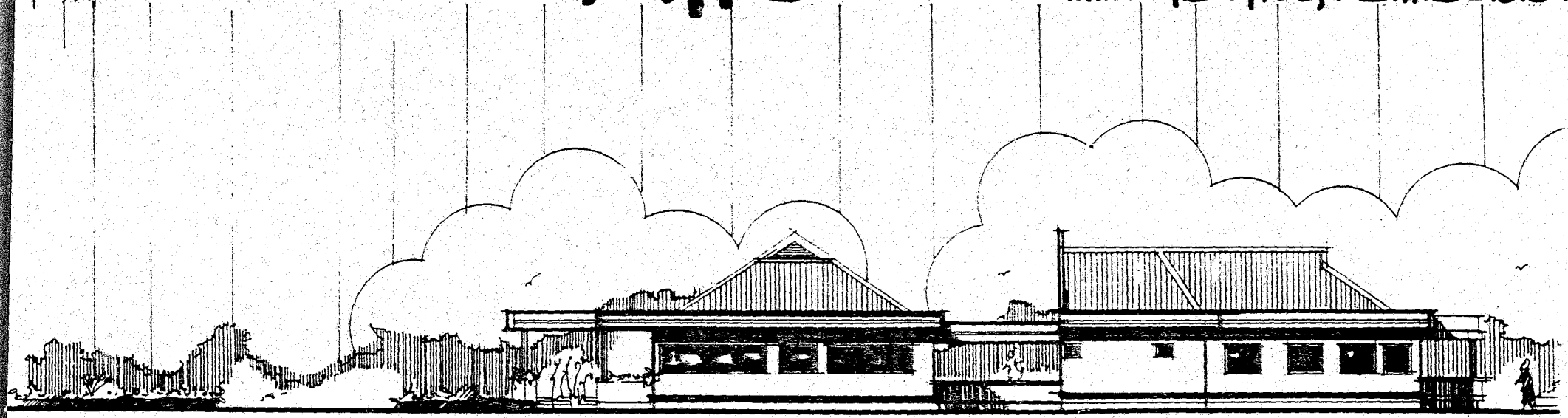
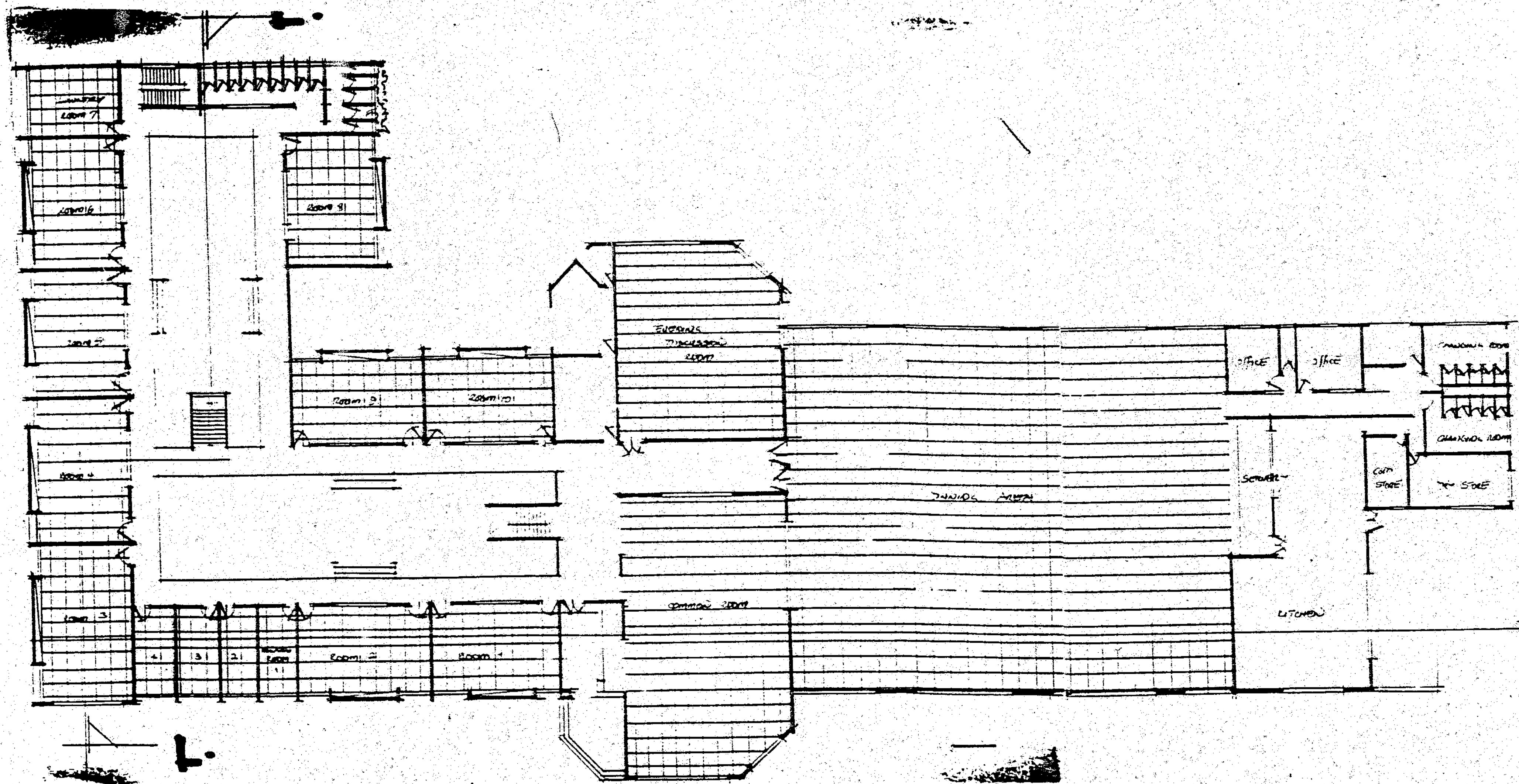
ELEVATIONS - ADMINISTRATIVE, ADMISSION :

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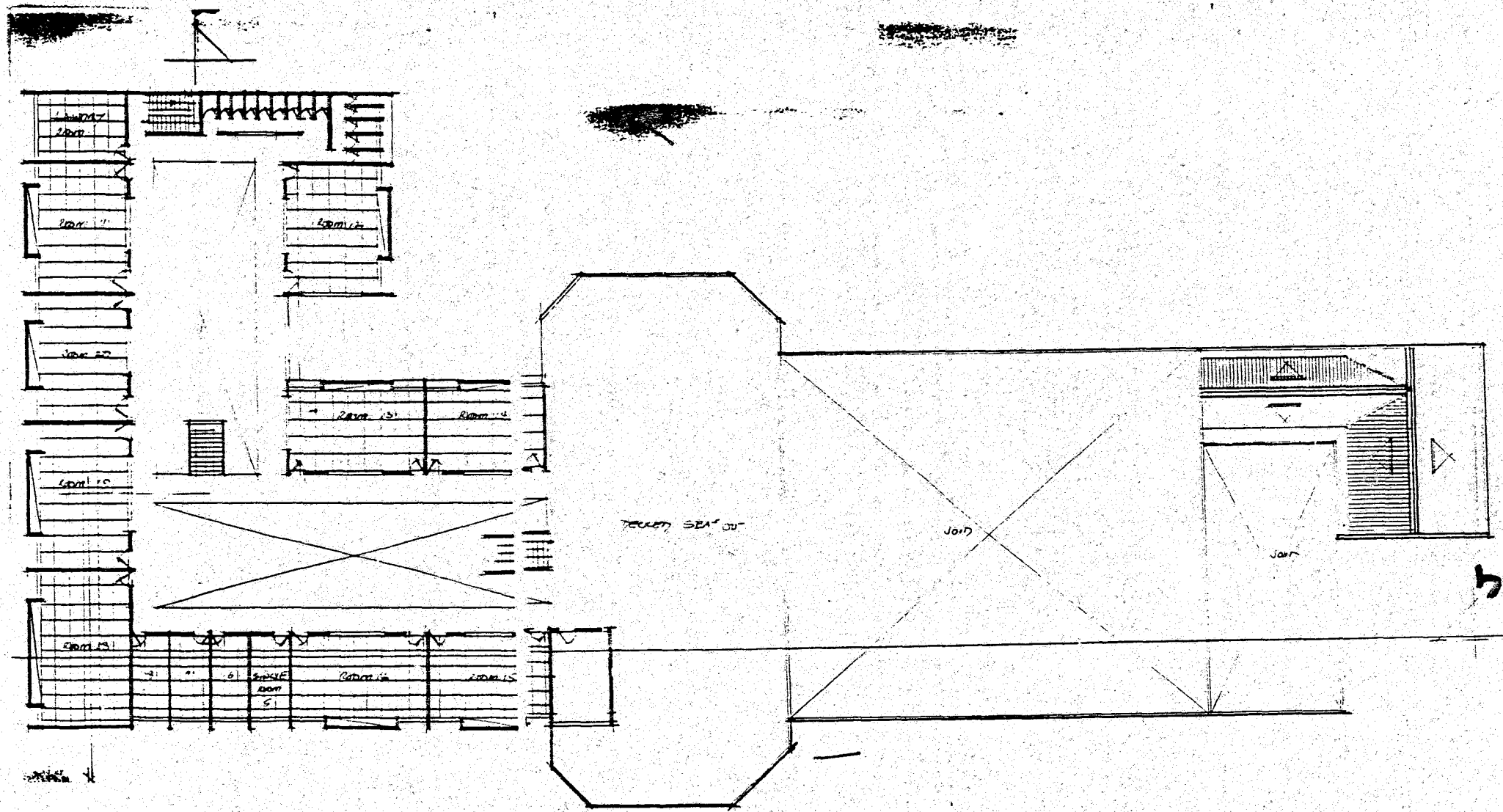
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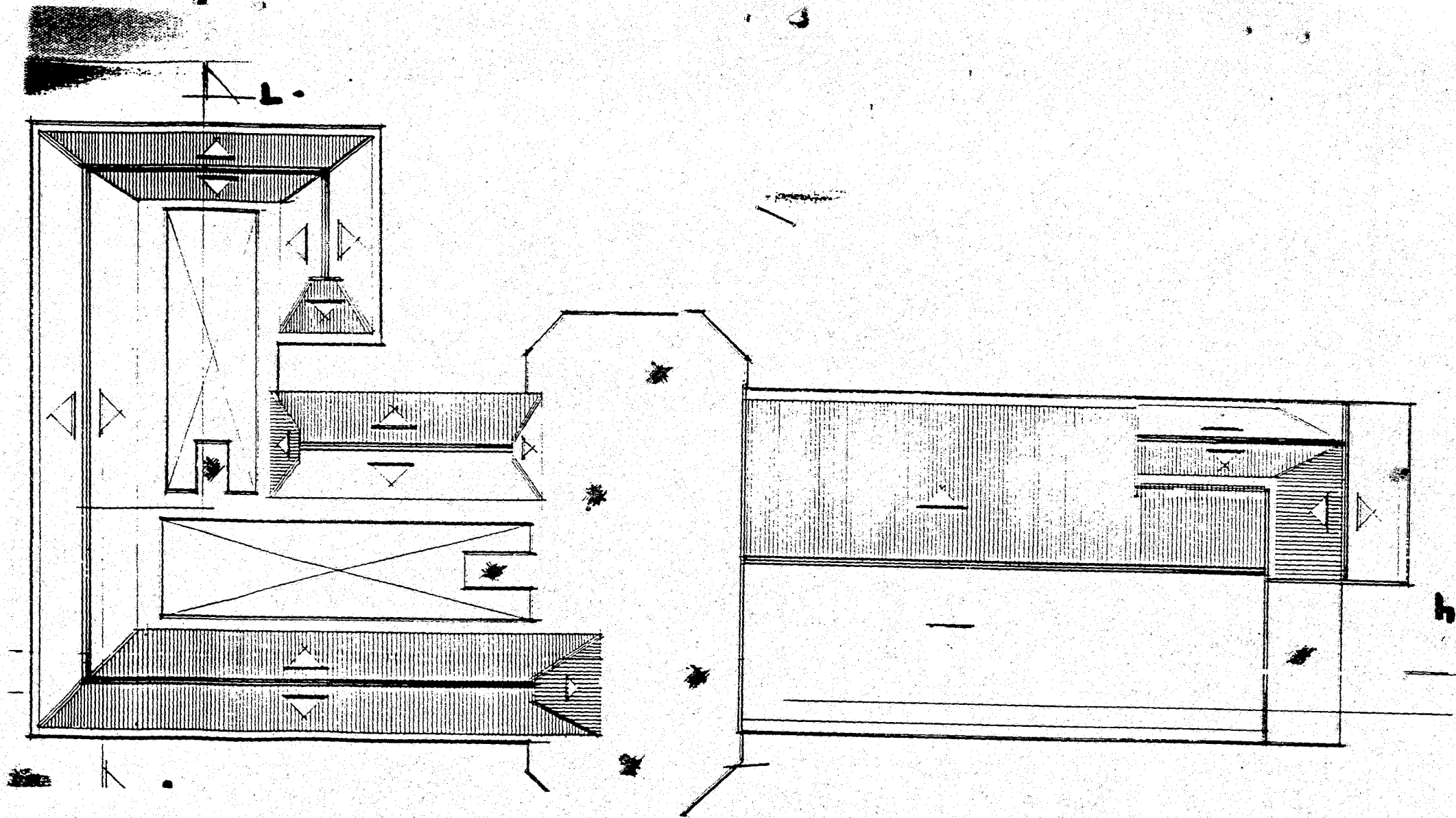
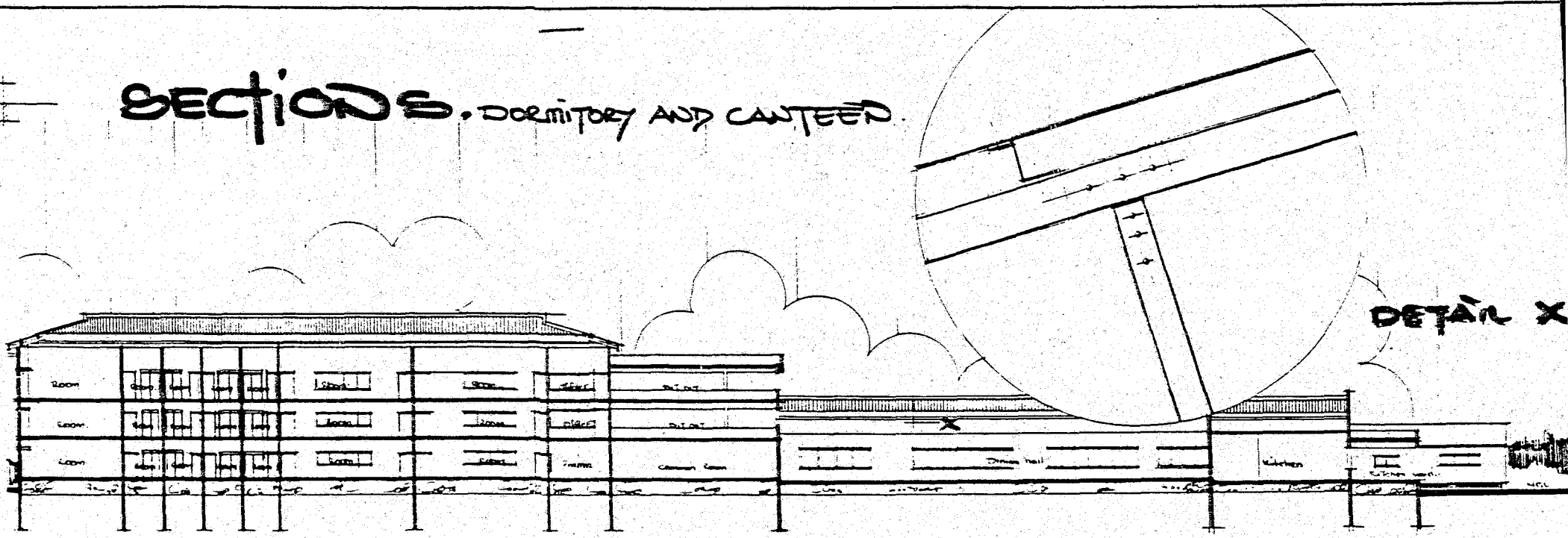
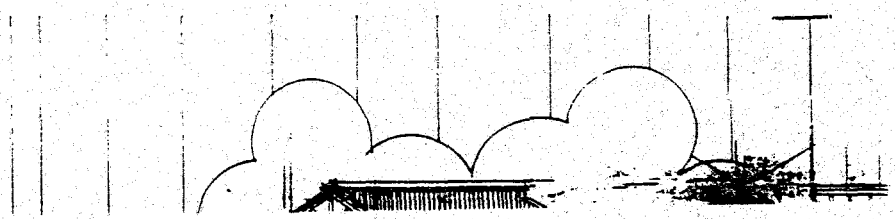
Room 33
Room

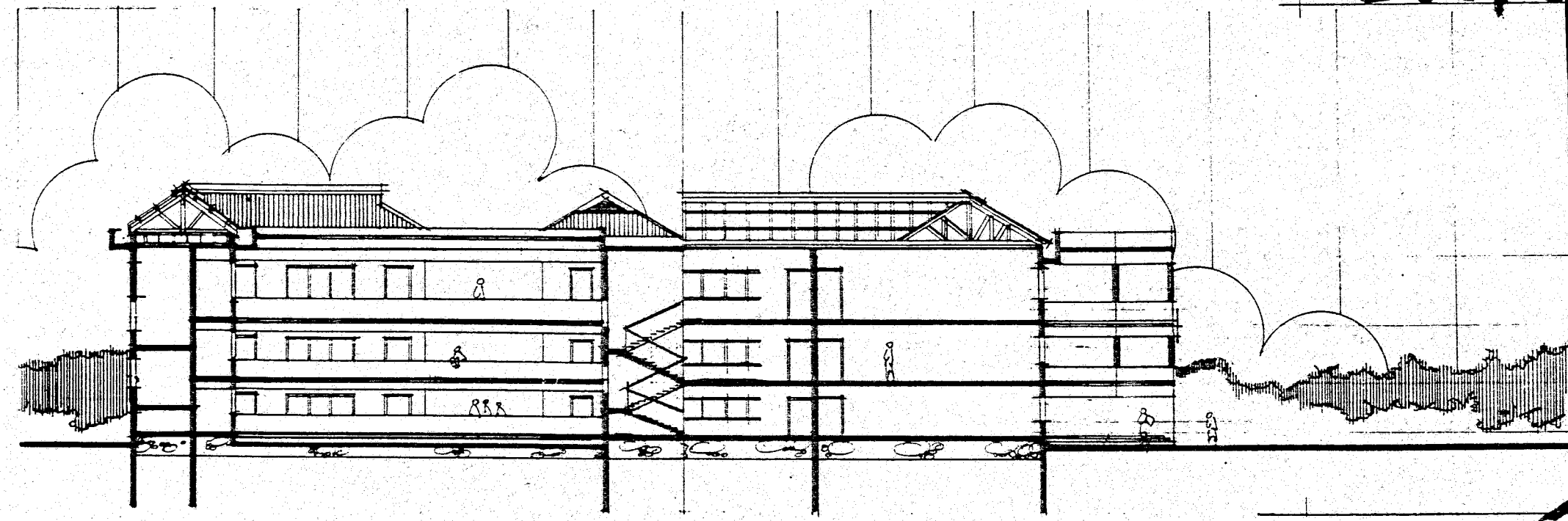


SECTIONS. DORMITORY AND CANTEEN.



SECTION A-A.





- SECTION

- SECTION

BORSTAL HOME ABUJA

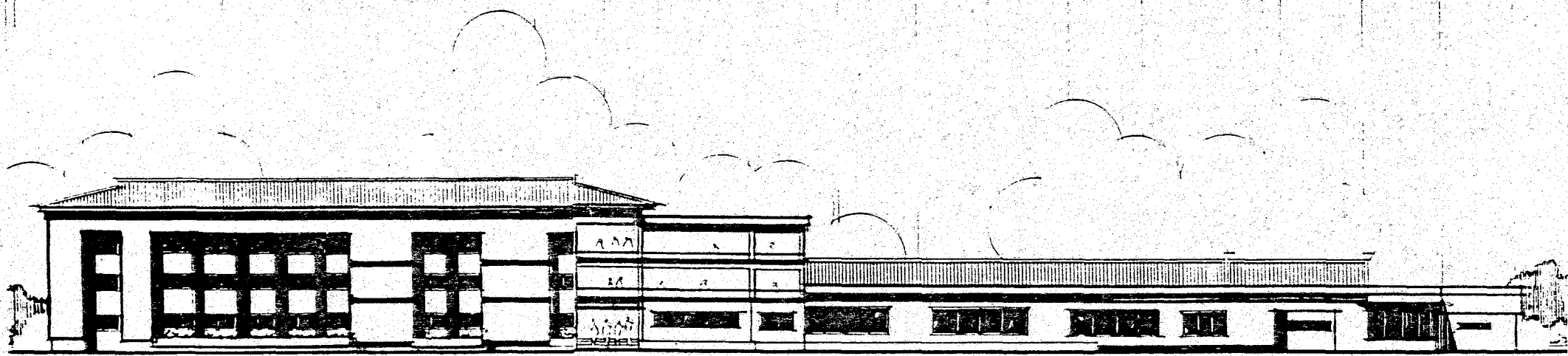
MENTOR

SCALE

DATE

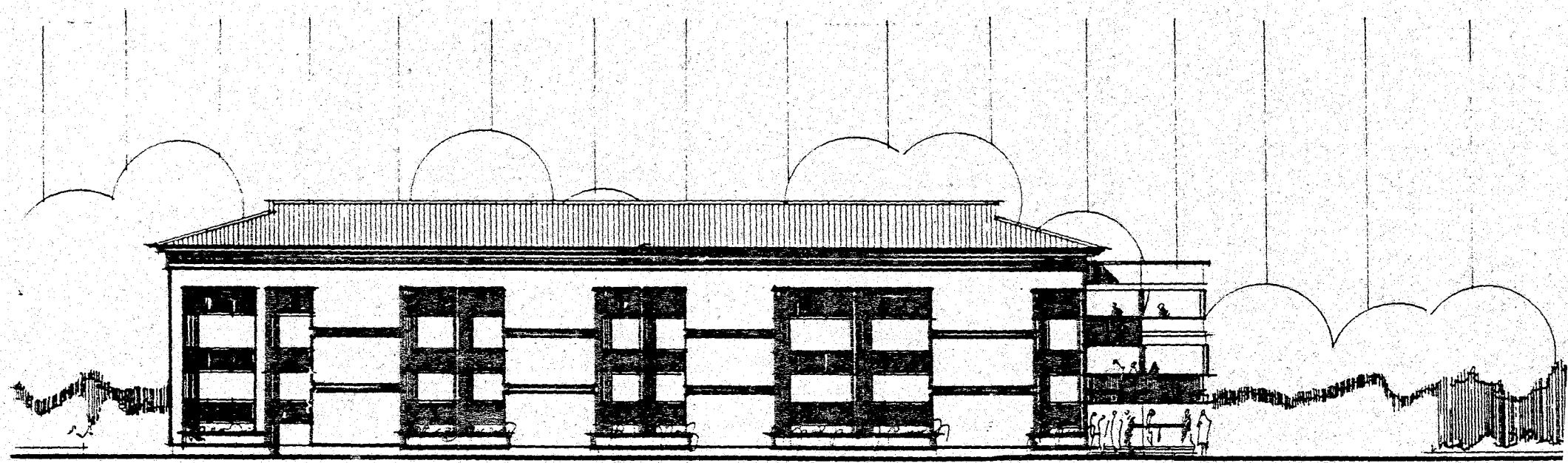
SHEET

ELEVATION. DORMITORY AND CANTEEN.

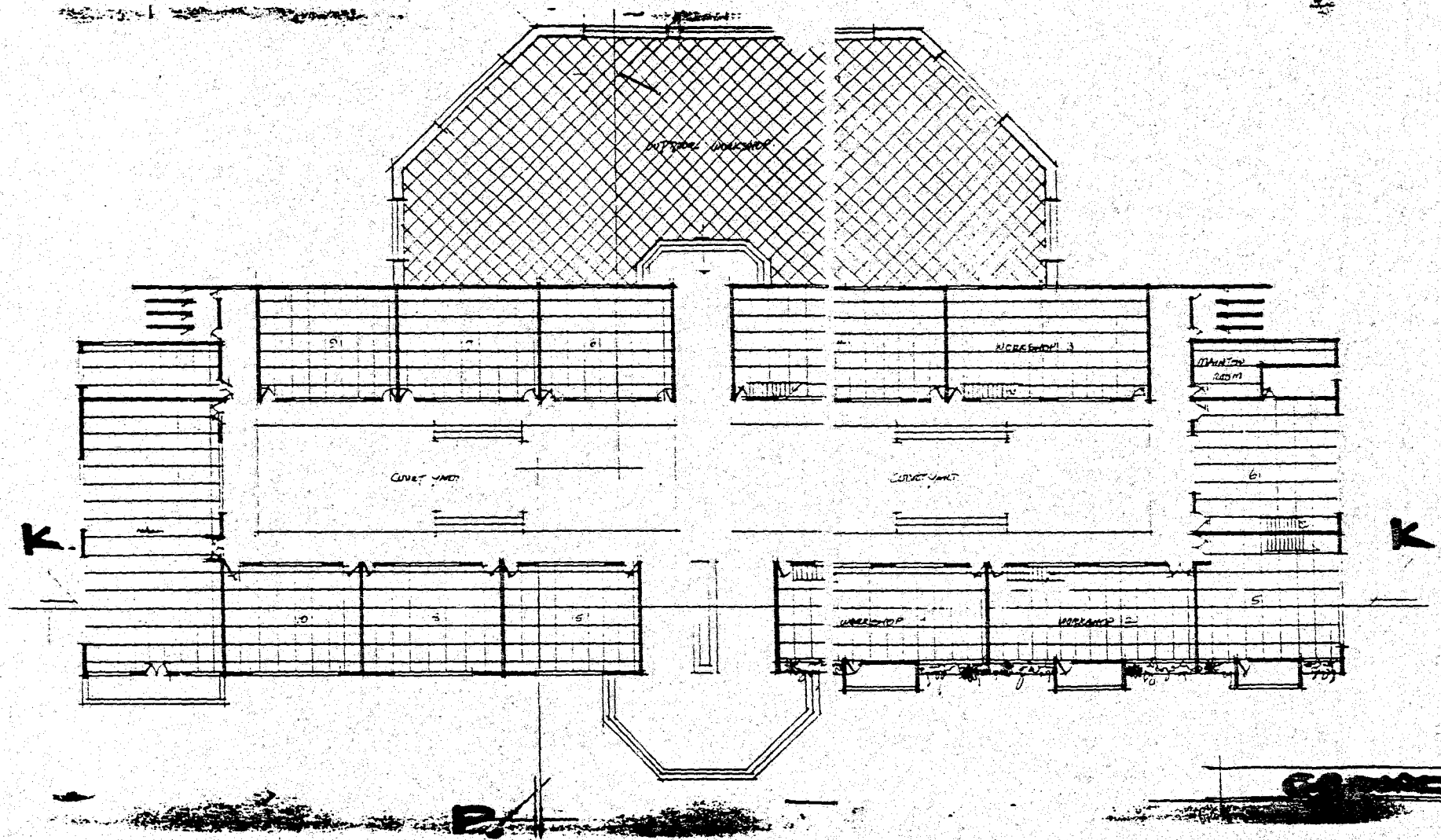


APPROACH VIEW.

REAR VIEW.



BORSTAL HOME. ABUJA.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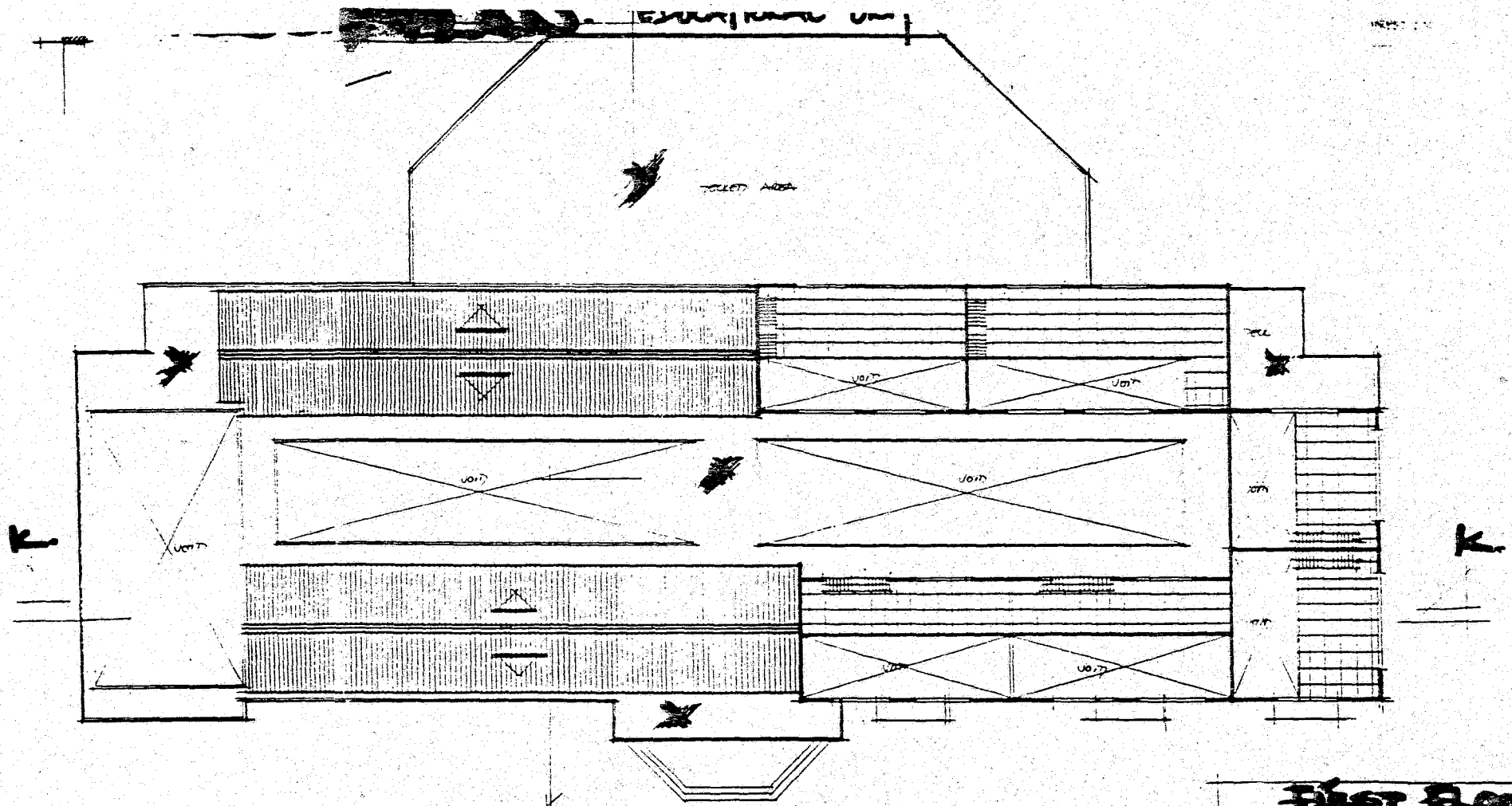
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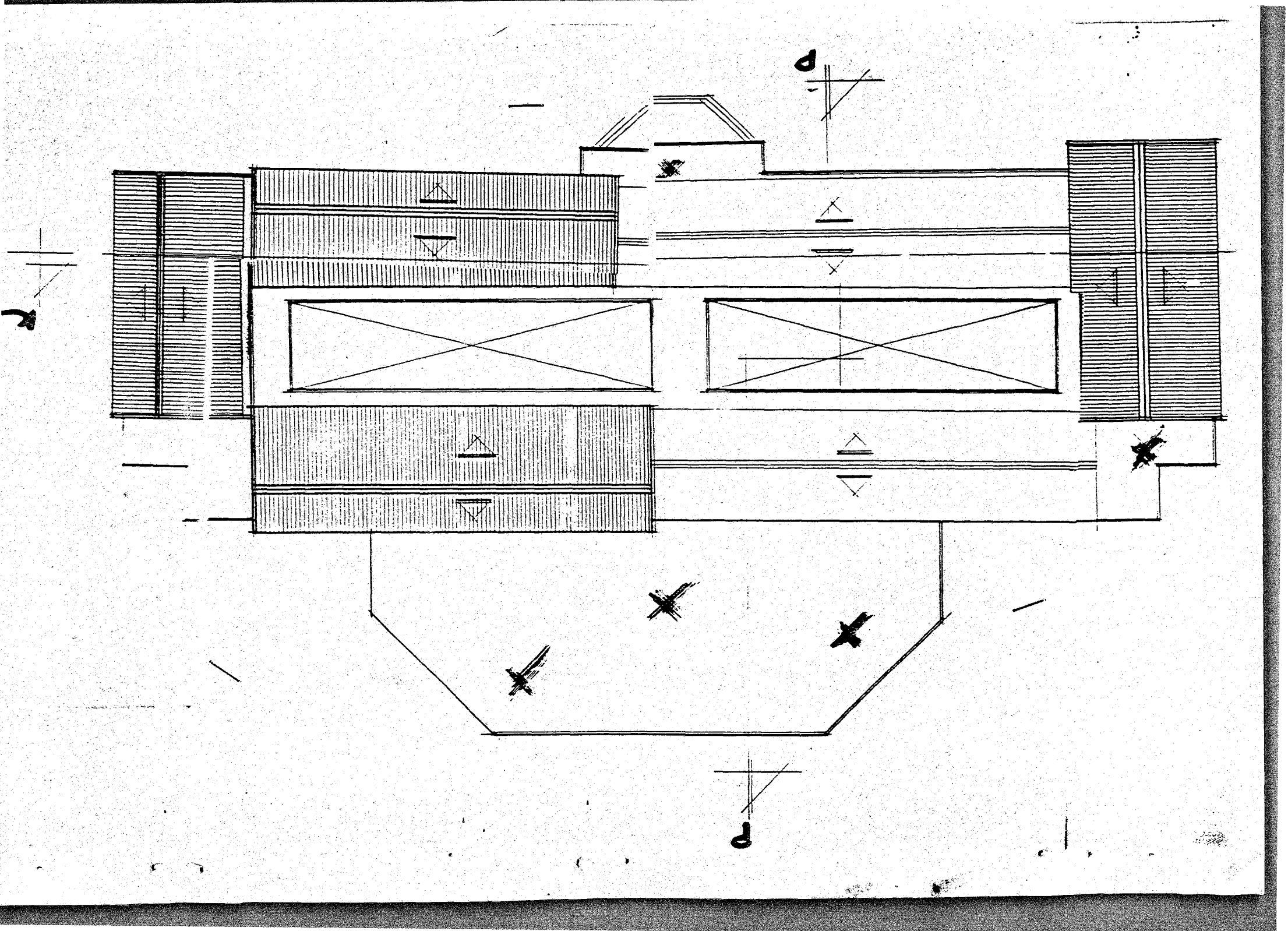
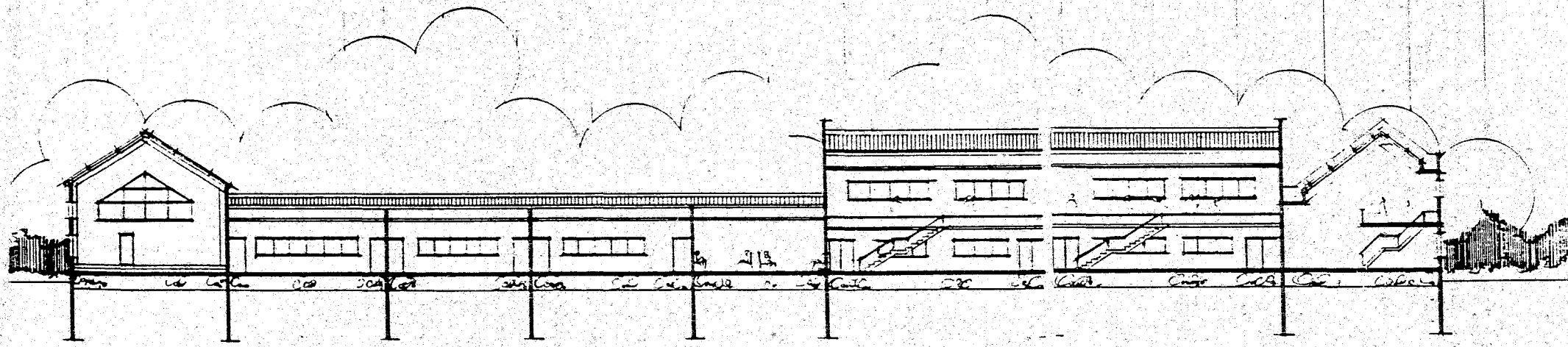


SECTION - EDUCATIONAL UNIT



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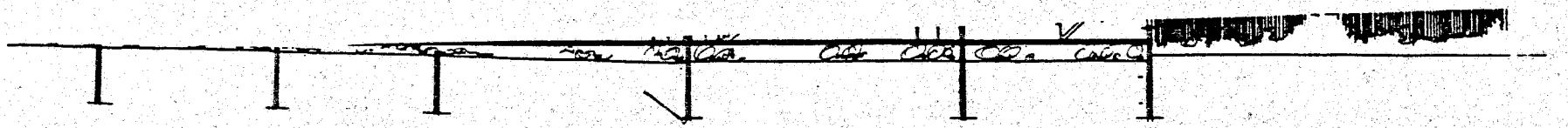

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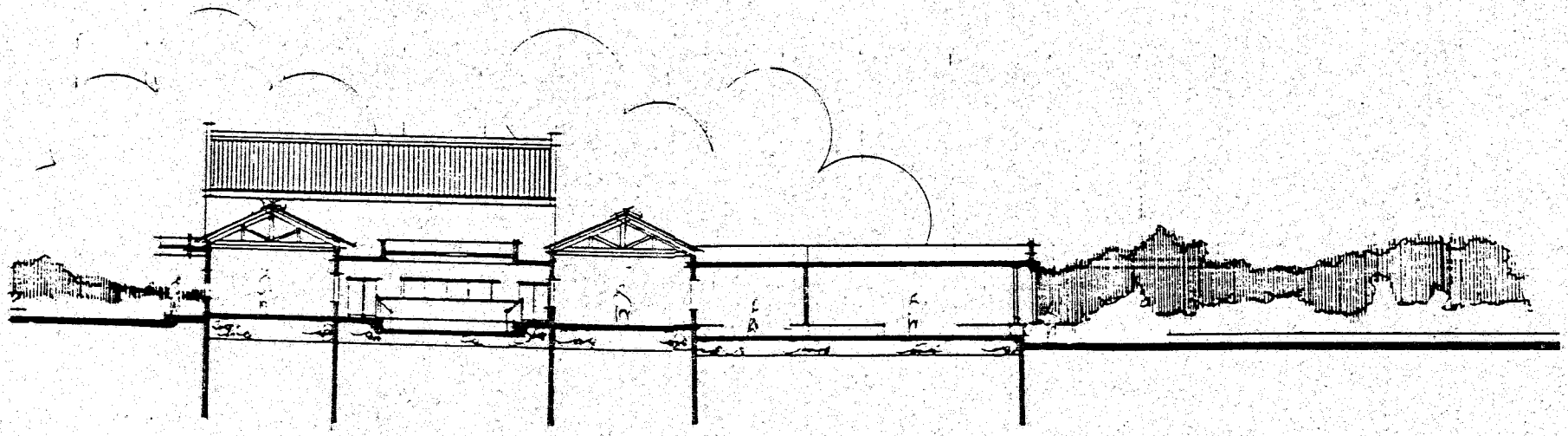
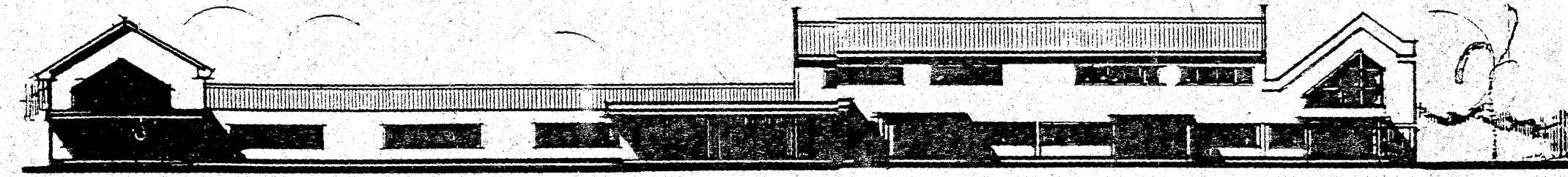
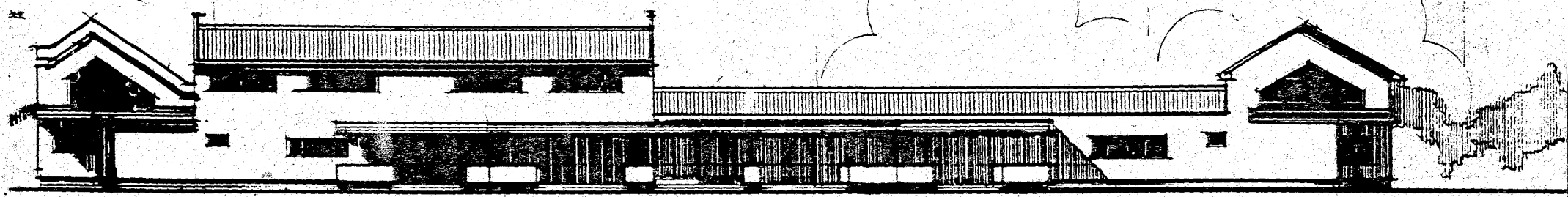


Section P–P.

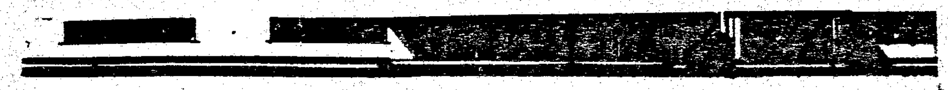
ELEVATION. EDUCATIONAL



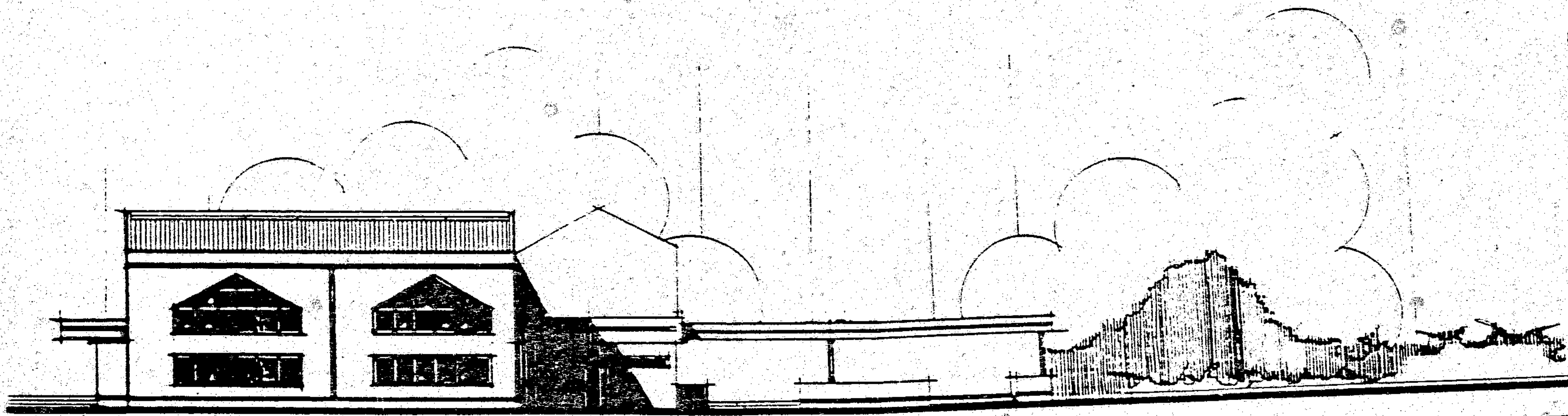
APPROACH



REAR VIEW



APPROACH VIEW.



RIGHT - SIDE VIEW.

MENTOR	DR(MRS) S.N ZOBAIRU
SCALE	1 : 200