PRISON DESIGN AND PRISONER BEHAVIOR:

PHILOSOPHY, ARCHITECTURE, AND VIOLENCE

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TABLE OF CONTENTS

Introduction .........................................................i

Section One

Part 1: Penal Philosophy..............................................1

Part 2: Early European Origins and Development .................13


Section Two


Part 2: Contemporary Architectural Examples, Features, and Conditions........62

Section Three

Part 1: Psychological Implications of Imprisonment..............83

Part 2: Crowding in Prison..................................97

Part 3: Violence in Prison................................115

Problems and Recommendations..................................134

Bibliography.........................................................146
INTRODUCTION
"A total institution may be defined as a place of residence and work where a large number of like-situated individuals, cut off from the wider society for an appreciable period of time, together lead an enclosed, formally administered round of life... [its encompassing or total character is symbolized by the barrier to social intercourse with the outside and to departure that is often built right into the physical plant, such as locked doors, high walls, barbed wire, cliffs, water, forests, or moors]" (Goffman 1961: xiii-4).

Without doubt, prisons best fit Goffman's conception of a "total institution." Prisons bring to mind an array of images for different people; some may think of a warehouse for criminals where maximum bodies per minimum space is the rule, while others see a drab and gloomy monastery where repentance is fostered. Both notions are archaic, yet both are represented by architectural configurations which continue to function at this very time.

The majority of the public does its best to avoid all thought of prisons. Prisons reflect an ugly side of human nature, in terms of those who violate social norms and in terms of the manner in which society chooses to sanction those violations. Only when something newsworthy occurs---most frequently, a riot---does the public take notice. Nine years ago it was Attica, and in February it was New Mexico. Aggressive behavior, en masse, seems periodically characteristic of correctional institutions in the United States. In actuality, aggressive behavior at the individual level is exceedingly common in prison; in a number of institutions it is positively an everyday occurrence. In the eyes of many, this is not a surprising fact: prison inmates have
already been established by the court system as having committed crimes against society. Further unsocial actions may well be expected, may they not? And yet, I am not convinced.

All behavior, Flynn notes, "occurs within the limits of specific physical surroundings and is to a certain degree affected by it" (1976:120). In other words, no behavioral act can be wholly removed from the environment in which it takes place: that is its context. An action is often better understood when its physical setting is taken into consideration. The aim here is to inspect the psychological effects of prison, and prison violence, in terms of prison environment and design.

I contend that the architectural environment of the prison can directly affect prisoner behavior in terms of violence and pathology. Certain design configurations can promote inmate aggression and negative psychological effects. Thus, I shall explore the physical and philosophical state of the prison briefly through history and intensively at present, and shall attempt to present suggestions for the modification of these effects via change in the architectural environment.

My investigation shall commence with an overview of penal philosophy through time. Then, I shall present a brief consideration of the development of prison styles from early Europe to this century in the United States. This historical perspective will be valuable in helping to establish an understanding of the way in which present
correctional styles evolved.

The next major section will be concerned with the basic architectural designs seen in American prisons constructed since approximately 1910, and contemporary examples and features of these facilities. Here, the aim will be to depict the state of the prison at present.

The following section will be comprised of three parts: an examination of the psychological implications of imprisonment; a look at crowding in prison; and a consideration of violence in prison. This section will be based largely on various types of experimental studies, of which few have specifically concerned the issues of violence and pathology as related to the physical environment. Therefore, there are certain unavoidable limitations in the data.

Finally, I shall present a concluding chapter in which some specific problems are addressed and recommendations made. Perhaps the essential thrust of this work is to show that the architectural design of a correctional institution can affect not only the behavior of the prisoner but the success or failure of the institution as a whole. This is what must be recognized by prison planners and administrators if prisons are to be improved.

Despite its length, this is truly an introductory work on the subject of prison design. In many areas the level of analysis is low due to the relative inexperience of the author in prison matters. I was very fortunate to be able to visit several prisons and jails during my research; the information garnered through this fieldwork was truly in-
valuable to my understanding of the state of the prison today. I would like so much to thank the individuals responsible for enabling me to carry out my research within the actual institutions, but in order to protect the anonymity of the facilities to which I refer in this work I must regretfully refrain. Nevertheless, to these unnamed persons I am most grateful.

As the vast majority of prison inmates are male (96.6 per cent in 1970), this work will deal predominately with men's correctional institutions. Women's prisons will be included as well, but not to as great an extent: they require an in-depth examination all their own.

Let us now begin to analyze the matter of prison design and prisoner behavior.
Section I

Part 1

PENAL PHILOSOPHY
Through time, several basic purposes of penal institutions have been noted. These are: punishment; deterrence; quarantine (removal of the offender from the community); rehabilitation; and, most recently, reintegration of the offender into the community. Such purposes are necessarily influenced by a society's definition of correction, and its moral-ethical orientation: the perceived value of security as compared to individual rights (Nagel 1973:12).

Imprisonment has been the dominant mode of criminal sanction in the United States for approximately two hundred years. Over time, penal philosophies have waxed, waned, competed, and—consistently—been replaced by new, purportedly superior ideologies. Prison design has reflected these developments to varying degrees. More often than not, changes in penal philosophy, and therefore institutional design, have occurred when officials and administrators have arrived at the realization that the systems and goals of imprisonment prevailing at the time were neither effective nor realistic. Therefore, penologists and architects have periodically turned to new and innovative constructs in an effort to create a prison which will serve its predicted purpose of reform, rehabilitation, or what have you. The history of penology has been characterised largely by false starts which were permitted to continue to grow despite inherent weaknesses in the plan. In short, correctional methods have generally failed to accomplish their ends, but the officials and administrators persist in trying, trying again.
Another reason behind changes in corrections and prison reform has been the historically evident ebb and flow of public interest. In the 1780's, the 1830's, the 1880's, and the 1930's, prisons received significant public attention in America. The first period of heed was due to a prison reform movement instigated in Europe by John Howard; the next two stemmed from the introduction of momentous new penal methods, supposedly destined to solve all the problems in the field of corrections; and in the 1930's, the "Big House" type movies produced by Hollywood were responsible for the increased public interest. At present the major concern is with the civil rights of inmates. Apparently, public attention comes at fifty-year intervals; perhaps this decade, particularly because it started off with the bloody New Mexico State Penitentiary riot, will become mindful of prison conditions and the need for change. At least, we may hope so.

It should be emphasized here that until the mid-1700's in this country and Europe, imprisonment was quite rare as a form of punishment; its early origins will be discussed further on, but these primitive examples of confinement were unusual for their time. Instead, capital and corporal punishment were the basic methods of sanctioning criminals. These physical punishments have essentially disappeared today, but some places---South Africa and Ceylon, for example---retained the use of the whip as a legal punishment as late as the 1960's (Sellin 1972:11).

At the most basic level of consideration, the two
conflicting constructs of penal philosophy have been punitive theory versus rehabilitative theory. Essentially, the two are so closely interwoven that they cannot easily be separated; still, rehabilitation holds ideological sway at this point in time (American Correctional Association 1972:22). The two most readily identifiable purposes of punishment through time have been: a) the conservation and protection of the values or social interests which the offender has failed to respect; and b) the effecting of repentance by the offender, in order to "save his soul." Of these purposes, the first may presumably be accomplished via execution, deterrence, or rehabilitation; and the human motives behind them might be determined to be vengeance, exploitation, compassion for sinners, or a desire for therapy (Sellin 1972:8-9). Architecture has mirrored these motives and aims; very frequently, penal philosophy is the most influential consideration determining correctional housing, particularly in this country.

For example, from 1830 to 1930, the tenets of prison discipline remained essentially the same: strenuous, punitive labor; general deprivation but for the barest necessities; a monotonous existence; uniformity; corporal punishment; degradation; isolation; no responsibility; adherence to petty rules; and no communication with society at large. It is no wonder in light of these views that inmates were housed in cage-like cells during this time period—offenders were consistently dehumanized by the penal system. In fact, this philosophy worked so effectively against the normal
person's needs that it frequently led to the development of pathological personalities in prisoners (Gill 1972:112-113).

During this time period, America experienced several changes in penal philosophy. The beginnings of these ideological alterations actually began in the late 1700's, when a particularly innovative jail was established in Philadelphia. This was the Walnut Street Jail, and it brought with it the new Quaker concepts of penitence for criminals through certain forms of incarceration. Walnut Street incorporated into its penal scheme both congregate rooms, where inmates interacted as a group, and individual cells, where each person was completely isolated. As shall be seen, Walnut Street attracted considerable attention, and within the next quarter-century or so a new system was devised, based on the congregate aspect of the Philadelphia jail.

The new prison, located at Auburn, New York, called itself a "penitentiary." Its designers had selected what they regarded to be Walnut Street's best features: congregate workrooms and individual cells. The Quaker code of seclusion with the Bible to instill repentance was strictly enforced, but only during the night and certain hours of the day; the practice of congregate labor was instated with a rule of absolute, total silence. Not long after Auburn's influence spread, another radical prison configuration was introduced in Philadelphia---this one combining silent reflection on the Bible with perpetual solitary confinement and individual labor. These two prison systems were to compete for many years; in the 1870's, yet another novel prison system
was to appear: the reformatory, beginning in Elmira, New York, stressing education and hard labor. All shall be discussed in a later chapter on prison history.

During the late 1800's, the significance of labor in corrective philosophy was considerable. Punitive labor was not as important to prison administrators as productive labor. Since an economic perspective has dominated corrections in this country from the start, the making of saleable items by inmates was very attractive to officials, especially for defraying operating costs. Therefore, from the late nineteenth century through the first quarter of the twentieth, prisons provided work for inmates and sold their institutionally-made products on the open market. Private industries took issue against this practice, complaining that the low prison wages made competition from them unfair; in 1929 and 1935, acts were passed restricting the sale of prison goods. State laws followed, forcing prisons to largely abandon their industrial endeavors and return to an overriding concern with punishment and custody (Reid 1976:520). This is much of the reason for the appearance of idleness in many prisons today: vocational programs typically accommodate only a small number of prisoners and the work experience is frequently of limited value to the released individual.

The eradication of productive prison labor was not the only change in corrections in the first part of this century. Around 1916, penal philosophy began to change with the help of two people. One was Thomas Mott Osborn, who revealed at Auburn Prison in New York that the inmates knew
more than the guards about the workings of the institution, and subsequently went on to organize prisoner-staff discussions regarding prisoners' problems: he defended the importance of the inmates' contribution to the efficient management of the prison. The other was Dr. Bernard Glueck, who began the practice of studying prisoners individually in order that differential treatment be made possible. This grew into the full-fledged system of classification, which finally abolished the old concept that "all prisoners must be treated alike" (Gill 1972:113). The system of classifying prisoners, so fundamental to corrections today, had some of its earliest origins on Norfolk Island, a convict colony off the coast of Australia during the late 1700's and early 1800's. Here, Governor Manochie established a program which enabled inmates to accrue good marks for good behavior and thereby "elevate" themselves to a higher inmate grade (Hopkins 1918:3). This was one of the first instances of administrative differentiation between prisoners, even though it was the inmates' own prerogative to initiate their advancement. Classification in the twentieth century began the categorizing of inmates for incarceration in minimum-, medium-, and maximum-security prisons, the architecture of which would vary accordingly. Such a method of organization, it was felt, would reduce costs as well as recidivism (McKelvey 1977:282); however, this has not been the case. Minimum-security institutions often cost more to construct than those of the other custody levels, and recidivism remains fairly constant in rate regardless of institutional configuration.
Indeed, corrections was undergoing distinct changes, particularly in order to keep up with the ever-swelling inmate populations. As the American Correctional Association remarks:

"The year 1930 may well be accepted as the beginning of the modern era of prison progress. The event that gave it greatest impetus was the complete reorganization and reform of the Federal prisons which were raised from the status of a backward, neglected, and at times corrupt system to a position of preeminence among the prisons of the country. The rapid and steady progress made by the Federal system from 1929-30 on had a strong influence on state prisons, for it demonstrated that practical programs of rehabilitation could be set up and operated effectively with adequate physical plants and, above all, qualified personnel (1972:29).

It is very true that the staff of an institution has a tremendous effect on its relative success. Here arises a possible problem in the combination of ideologies involved in operating a prison. Regardless of the humanity or modernness of a prison's design, whatever philosophies produced that form must be carried through in the behavior and attitudes of everyone from the administrators to the correctional officers if they are to have an impact. Similarly, the inverse is true of a prison's physical plant affecting the success of its program. Outdated institutions not built to accommodate specialized psychological treatment, educational courses, or increased inmate freedom will inhibit progress therein and simply frustrate the inmates and administrators. A prison does not become a "correctional institution" merely because that is what it is called; a practical policy stemming from a rational philosophy of
treatment must be applied to an appropriate physical structure if positive results are to be expected.

The penal philosophy which has tended to dominate in this country is that of security and custody: most anything is permissible in terms of physical plant, as long as it keeps the prisoners in. It is quite apparent, however, that these concerns fulfill only temporary needs—preparation for return to the society is necessary as well. The recognition of this being the case has led to the philosophy of rehabilitation and reintegration, calling for the provision of education, labor, recreation, and treatment in prison (Reid 1976:523).

Howard B. Gill, a well-known specialist in correctional architecture, perceived the coexistence of several conflicting philosophies in the field of penology during the 1960's. Three of them, still recognizable today, variously interpret prisons as custodial, progressive, or professional. Custodial prisons concentrate solely on the aspect of security, and maintain strict regimens for their inmates. Progressive prisons, currently the most popular type, include educational and vocational programs, recreation, occasional entertainment, libraries, religious facilities, and medical care. (Unfortunately, says Gill, none of the programs provided actually deal with the criminality of the residents, so true rehabilitation rarely results.) Professional prisons, regarded by Gill as representing the penal philosophy of the future, are based on five elementary concepts as follows:

A. Security must be assured, but it must not overwhelm.
B. Inmates are to be classified as New, Tractable, Intractable, or Defective.

C. Tractable inmates' problems must first be solved, then they must be societally acculturated.

D. Correctional staffs must function in five areas—Executive, Administrative, Professional, Security, and Treatment.

E. Prison architecture must meet all the preceding concepts (Gill 1972:116).

Gill predicted the imminent use of these concepts as long ago as 1962; as yet, they have not been adopted. However, in 1979, the Federal Bureau of Prisons instituted a new designation system for use in assigning inmates to correctional facilities. Whereas the previously considered criteria consisted only of the individual's age and length of sentence, the additional aspects utilized now include his or her history of violence, prior record, and the severity of the offense. This new system enables more inmates to be sent directly to minimum security facilities, and fewer to be sent to penitentiaries (Committee on the Judiciary 1979:5). It appears that steps are being taken to move away from an ideology of incarceration for its own sake.

A somewhat confusing aspect of current corrections is the discrepancy as to just what imprisonment today is intended to accomplish. Rarely, it seems, is a specific enumeration of its objectives provided. Nevertheless, here are the goals of the correctional field as set down by the Commission on Accreditation for Corrections in 1977:

1. Protection of the public.

2. Assistance to the courts regarding offender dispo-
sitions.

3. Assistance to juvenile and adult offenders to promote law-abiding behavior.

4. Provision of just and humane care in the management of offenders.

5. Encouragement of and participation in research regarding the causes of delinquency and crime and the effectiveness of correctional methods.


7. Promotion of and participation in coordinated planning and administration of diversified programs, activities, and services of criminal justice agencies.


The Commission does not specify how the law-abiding behavior of offenders is to be promoted, except perhaps through the "provision of just and humane care" in correctional institutions.

Actually, little more can be expected. By now, it is fairly well known that imprisonment as a route to reform or rehabilitation is hardly efficacious; all it can be relied upon to do is separate the offender from the rest of society ---and if the facility lacks sufficient security, it may even fail in that. Rehabilitation is a very elusive goal. This is why reintegration and preparing the inmate for reentry into society constitute the philosophy generally proclaimed as underlying incarceration today (Cohen and Taylor 1972:193). Work-release programs and halfway houses have been introduced in the furtherance of this goal, as well as intensive educational programs and even less restrictive visiting
policies. Of major importance to a reintegrative aim are the proximity of correctional institutions to major population centers and universities, and the utilisation of a correctional staff whose ethnicity and general background harmonize with that of the inmates. Unfortunately, none of the new correctional facilities visited by William Nagel's investigative team in 1972 had these characteristics. All of the prisons had rural locations; none were accessible by public transportation; and, whereas these institutions averaged a 45% minority population, the mean staff composition was only 8% minority members (Nagel 1973:48).

Essentially, then, American penal philosophy has moved through various ideological phases. Here is a brief summary of penological progress in terms of philosophy, which will be covered in greater detail in the section regarding general U. S. prison history.

From the time of the Revolutionary War through the mid-1800's, the purpose of incarceration was segregation with penitence, meant to punish. This was implemented first through congregate, then solitary confinement with the Bible, as shall be seen. By the 1870's, reformation was penology's goal; confinement with the Bible was now combined with hard labor under strict discipline. Reformation held sway until approximately 1925 to 1930, when rehabilitation took precedence; here, prisoner classification was instituted in prisons of varying design and prisoner mobility (Barnes and Teeters 1945:641-642). At present, rehabilitation and reintegration of the offender are the basic aims of corrections,
with programs including work-release and community halfway houses and emphasizing the approximation of normal living in groups within a correctional setting.

With these basic penal philosophies in mind, let us turn to a historical overview of the development of prison design beginning in early Europe and leading up to the present time in the United States.
Section I

Part 2

EARLY EUROPEAN ORIGINS AND DEVELOPMENTS
It is not possible to put an accurate date on the earliest use of prisons. A prison may be thought of as a place in which a person is kept, against his will, by an established authority. In light of this, some form of prison has probably existed at any given point in history. Although imprisonment in early times seems to have been used primarily as temporary detention prior to trial, execution, or banishment, it served other purposes as well. Important political prisoners were held rather than put to death; incarceration helped to encourage certain prisoners to pay debts owed the government or powerful individuals; and, as early as the 1300's, imprisonment itself was used as punishment for lesser crimes (Johnston 1973:5).

The early prisons of the world were most often cells or cages located within a fortress or castle, or in the basement areas of public buildings. A particular early "institution" about which information exists was the Mamertine Prison of Rome, begun in about 640 B.C. by Ancus Martius. Consisting of an extensive series of dungeons, it was to be found underneath Rome's major sewer: the Cloaca Maxima. In general, however, places of detention were small, makeshift constructions inside fortified enclosures. Contrary to popular belief, dungeons in European and Middle Eastern castles were originally intended as storage areas (Johnston 1973:6).

It was only after the twelfth century that prison cells were no longer provisional but began to be built specifi-
cally for purposes of incarceration. These were mostly installed in the lower sections of castle towers, whose massive walls were well suited to this function. Sometimes the tower cells were windowed, sometimes not; all contained medieval toilet shafts and, if necessary, a ventilation duct. When gunpowder came to the Western world, castles lost their significance as defensive structures; nevertheless, their central locations in towns and thick, mostly windowless walls made them useful as readymade jails. Capacities were typically low and periods of imprisonment brief (Johnston 1973:7).

Aside from castles, modern-day prisons had beginnings in ecclesiastical structures. The early Christian church's practice of granting asylum to criminals and fugitives was in part the source of the concept of incarceration as a replacement for death or physical mutilation. Used most widely during the late medieval period but established long before, solitary confinement as a punishment was assigned to sinners under church court jurisdiction. The basis of this sanction was not only the Christian tenet of purification through suffering, but also the creation of conditions under which penitence would be encouraged (a concept destined to be fundamental to penology of the nineteenth century). For example, the abbot could confine an errant monk to his quarters with little difficulty, especially if each brother had his own little cottage (which was sometimes the case). This, then, may be regarded as the origin of the concept of reformation of prisoners. It was also the antecedent of the system of cellular imprisonment we observe today. Church
prisons consisted of only one or two detention rooms, even in large monasteries, and seldom contained more than one inmate per chamber. Sometimes, depending on the religious order, these chambers had no door or window---access was by means of a ladder through a hole in the ceiling. Not only abbeys but every episcopal palace and similar center of church government as well had a prison (Johnston 1973:8-10).

In their era, church and castle cells sufficed for the small number of individuals requiring detention, but times were changing. With the decline of feudalism, the ranks of petty criminals in sixteenth-century Europe greatly increased; and to deal with them, the workhouse, or 'house of correction,' was introduced. The idea here was that the development of regular work habits would lead to rehabilitation. 1557 saw the opening of the most famous example of this type: the London Bridewell, so called for its location at the site of an ancient holy well of medicinal water (Barnes and Teeters 1945:477). By 1576, Parliament had passed a bill requiring each county in England to build its own "bridewell" (Johnston 1973:10).

On the whole, workhouses resembled any other large public buildings of the day; those built during the seventeenth and eighteenth centuries were predominantly in the form of a hollow square with common workrooms and sleeping areas. A few, however, were innovative: the Juvenile House of Correction of San Michele, in Rome, featured individual cells opening onto a large, multi-purpose room—a design quite like that of many contemporary institutions. Erected
in about 1755, about fifty years after San Michele, was the Milan House of Correction, which also incorporated single cells into its structure. This institution was about four times the size of the former, and had separate wings for the housing of male, female, and juvenile prisoners (Johnston 1973:11-13).

While the fascinating aspects of these Italian prisons lay in their physical design, developments in institutional organization were not far away. In 1772, something of a revolution in prison management took place when the Flemish government opened its house of correction at Ghent. Ghent brought together the principles of solitary confinement at night, separation of male and female inmates, and further distinction on the grounds of age, offense type, and sentence length. Extensive separation of prisoners in this fashion was possible due to the floor plan of the prison—it consisted of a giant octagon formed by eight self-contained trapezoidal units. Each unit was intended to house one particular type of offender (Johnston 1973:13).

The institutions at Rome, Milan, and Ghent were very unusual for their day. They were not representative of the majority of prisons in the seventeenth and eighteenth centuries; most houses of correction simply had large congregate rooms where all types of prisoners were thrown together under extremely overcrowded and unsanitary conditions. Ironically, the overcrowding resulted in constant depopulation of the prisons due to the spreading of typhus, known at the time as "jail fever" (Johnston 1973:15).
As Pevsner notes, it was common practice through the 1700's to chain prisoners to the floor unless they were being held in a chamber from which escape was considered to be impossible; also, prisoners were regularly tortured, often by whipping (1976:160). This underscores the concept of the day of imprisonment as punishment---indeed, as facilitating even further punishment than that of incarceration.

Up until the late 1700's, there was no conscious, distinctive style of external or internal prison architecture. As stated previously, prisons merely resembled other civic buildings of similar size. This was very much a reflection of the fact that a coherent, truly purposive philosophy of corrections had yet to be formulated. Then, in the 1780's, a penal reform movement was begun in England because of the publication of John Howard's book, State of the Prisons, in 1777. This work related Howard's observations of prisons and jails of Britain and Europe, bringing to the attention of the public the horrendous deterioration of most penal institutions built during the seventeenth and eighteenth centuries. The reform movement spread to Europe and the United States, causing the people to regard more seriously the reasoning underlying prison construction. At this time, imprisonment was beginning to be employed regularly as a form of punishment in itself, without recourse to the whip or other instruments of torture. This constituted a rather innovative usage of prisons; its ramifications were in many ways unknown (Johnston 1973:16).

At the time of John Howard's investigations, individual
cell confinement was rarely implemented due to prohibitive costs; the guards and "governor," or warden, merely kept a close watch over the prisoners in the common areas. This practice of continual surveillance was the byword of prison administration and design at this point in history: as opposed to the past, prisoners could be "protected" from each other's corruptive and injurious behavior. Howard strongly advocated the separation of prisoners in order to ensure such protection. In addition, the reformers concentrated on improving the sanitary conditions of prisons. Piped water, proper toilet and bath facilities, infirmaries, and good ventilation were demanded (Johnston 1973:17).

Following Howard’s revelations, three main types of prison design were settled upon by European (and later, American) architects and prison officials: rectangular or H-shaped forms similar to recent eighteenth-century church buildings; circular or polygonal forms; and the radial form, which became the most common. Within these designs, the use of cast iron bars and doors became more feasible due to certain scientific and technological advances. Therefore, the "constant surveillance" technique was no longer the most important means of custody. This proved significant in the rectangular designs, whose physical arrangement of rooms prevented proper observation of the prisoners (Johnston 1973:17-18).

In regard to the physical aspects of the British and European penal institutions of about 1800, it should be recognized that most cells were small and dark, being lit
and ventilated solely by a tiny, barred window. Cells had no toilets or running water; walls were stone; and doors were typically wooden with a small peephole (bars were not yet widespread). Heat was produced by stoves or furnaces throughout the building, and most every prison had governor's (administrative) quarters, workshops, an infirmary, and a chapel (Johnston 1973:26).

Here we have the general situation in Europe at the time that real advances began to occur in American penology. However, to get the full perspective on prison practices and configurations in the New World, it is necessary to look back to the 1600's and the origins of social control in America.
Section 1

Part 3

GENERAL U.S. PRISON HISTORY,

1790-1930
Colonial America began without prisons and, for the most part, remained prisonless until the Revolutionary War. As in the Old World, crimes equivalent to felonies brought capital punishment, corporal punishment, or fines, rather than incarceration. Punishments were exceedingly severe for the majority of crimes, reflecting the Puritanical morals and values of the age. There is little indication that Colonial penology sought the reform of offenders; humiliation, deprivation, and pain were its dominant goals (Hawes 1979:39).

Though there were no true penal institutions, there were instead debtors' workhouses and short-term "gaols," as the Pilgrims and other early settlers conceived of them; these facilities were carry-overs from Europe. The jails served to house criminals awaiting trial, and proved highly lucrative for the extortion-bent jailers who ran them: prisoners had to pay for their food and drink as well as other necessities. Jails had no individual cells, but instead large areas where all different sorts of prisoners---men, women, children, and the insane---were thrown together (Nagel 1973:6). The American Correctional Association even has records of liquor-vending bars inside the jails of early America (1972:25).

Massachusetts was the first American colony to establish the semblance of a prison, though the rest of the country did not take up on this aspect of social control until the very end of the eighteenth century. As of 1632,
the Massachusetts Bay Colony had built a small wooden prison in Boston which was to provide confinement for offenders from all parts of that colony for the next eighteen years. Legislation was passed in Massachusetts' General Court in 1655 requiring the establishment of houses of correction in each country for petty offenders (American Correctional Association 1972:19).

The first prison to serve the Commonwealth of Massachusetts following ratification of the United States Constitution in 1780 was the Castle Island fortress/prison in Boston Harbor, beginning in 1784. The same institution had been used to hold highly intractable prisoners as early as 1636, but had never been sufficiently secure to keep them in. The Castle Island prison, says the American Correctional Association, was actually the earliest prison in America, although the Walnut Street Jail in Philadelphia is frequently cited as such: Walnut Street did not officially become a prison until 1790 (1972:20).

As jails and prisons were being founded in this country, the harsh criminal laws were beginning to change. In 1682 William Penn and the first assembly of Pennsylvania passed what was known as "The Great Law," which expressed the Quaker criminal code. The Quaker code was more humane and less vindictive than the previously dominant English criminal codes, but was repealed in 1718. Finally, in 1794, after the American victory over England, an act was passed in Pennsylvania law which assigned the death penalty only to cases of first-degree murder and recommended imprison-
With the conclusion of the Revolutionary War, a cry for the reform of criminal sanctions was heard throughout the country. The newly-formed states began to respond as the public became more insistent, and incarceration soon took the place of capital and corporal punishment. One of the most notable institutions introduced at this time was Philadelphia's Walnut Street Jail, from which was derived the construct that was to dominate penology for the greater part of the following century: the penitentiary (Rothman 1971:61-62).

The penitentiary originated on Quaker principles as a solution to what the country's citizens perceived as the causes of deviant behavior. Based on the organization, control, and reform of criminals, early penitentiaries were the object of public admiration and interest. As a matter of fact, they constituted something of a tourist attraction for visiting foreigners—-penologists as well as ordinary sightseers (Rothman 1971:79-81). 1787 saw the dawn of modern penal philosophy in the United States when Benjamin Franklin and Dr. Benjamin Rush held a gathering for a group of Quakers and Free-thinkers in Philadelphia, who were to become the original members of the Philadelphia Prison Society. Dr. Rush presented a paper which called for revised treatment of criminals. Specifically, he suggested construction of a prison featuring housing and treatment differentiation according to crime; a "rational system" of
inmate labor; and indeterminate sentencing. Within three years, the bulk of his proposals had been incorporated into American penal philosophy. The clearest indices of these early concepts are to be found in the plans of Philadelphia's Walnut Street Jail (Gill 1972:111).

The Walnut Street Jail was actually the first penitentiary. Originally erected in 1773, in 1790 an act was passed providing for the construction of a new cell block in the yard of the existing congregate-room jail building. Solitary confinement with strict labor was prescribed for the inhabitants of the new single cells, and the predecessor of both the Pennsylvania and Auburn systems was born (Teeters 1955:1). Walnut Street was designed with two types of housing because it was intended for use as a short-term jail in addition to a correctional institution. Debtors, mis­demeanants and pre-trial inmates as well as new convicts had to be housed there. Thus, the last category of prisoners went into individual cells while the rest were assigned to congregate rooms (McKelvey 1977:8).

The single-cell system, first set forth in the United States by the Walnut Street Jail, constituted one of the most valuable concepts in early American prison development. No longer were prisoners open to the threat of physical abuse by their fellow congregate-room inhabitants, nor were large-scale disturbances as likely to occur. Walnut Street observed the practice of separating its inmates at night and grouping them together to work in shops during the day. Renowned as a success, the institution attracted many visi-
tors wishing to study its program. Due to its fame, however, the jail shortly became so overcrowded with newly assigned inmates that its talented director and manager, Caleb Lownes, resigned in 1799 (McKelvey 1977:9-12). This would seem to support the contention that "as long as there are prison cells, prisoners will be supplied to fill them."

Many of those who visited the Walnut Street Jail returned to their home states to plan prisons based on the unique design. Others were inspired to initiate further new styles for houses of correction—for example, Thomas Jefferson collaborated with Benjamin Latrobe on a pentagonal prison in Richmond, Virginia (McKelvey 1977:10). By 1800, state prisons had been established in ten states: Pennsylvania, New York, New Jersey, Virginia, Kentucky, Massachusetts, Maryland, Vermont, and New Hampshire. Part of the enthusiasm entailed in this spate of construction stemmed from a belief that criminality had strong bases in the faulty American legal system, and changing the system (it was thought) would weaken crime (Rothman 1971:62).

In spite of this enthusiasm, not all of the prisons established were of acceptable design or function. Only in 1827 did the state of Connecticut construct a new penitentiary at Wethersfield and thus terminate the use of the Simsbury copper-mine prison, which consisted simply of an abandoned mine shaft and grotto. During the nearly thirty years of its existence, inmates were kept "in slime-covered caverns with water dripping from the ceiling" and slept in niches in the walls of the mine (Rothman 1971:90).
In fact, the Simsbury mine-prison was the first state prison in America, having been established as such in 1790 (Sellin 1972:12).

A similar situation existed in the state of Maine's prison system in the 1830's. The prison at Thomaston included a series of underground pits, seventy-six in number, measuring $9\frac{3}{4} \times 4\frac{1}{2}$ feet and nearly ten feet deep. Originally intended for solitary confinement, they had to accommodate two prisoners or more due to overpopulation. This was fortunate for the prisoners, for men thus confined alone would have frozen to death during the long winter; extra pit-mates provided necessary warmth. The cell-pits were finally replaced in 1845 by a new prison (Barnes and Teeters 1945:527).

Aside from these bizarre examples, the first American prisons resembled nothing so much as oversized frame houses, no different from any ordinary wooden dwelling. New Jersey's first prison, for example, evidenced no strong security---only a wall of medium height enclosed part of the property, which totalled only four acres. (Incidentally, the New Jersey State Prison continues to occupy its original site of 1797. Luckily, the original building was no longer used after 1836, when a new structure was erected; however, this "more recent" portion remains in use even today.)

With growing inmate populations at the start of the nineteenth century, strength of custody soon became a major concern of prison designers and administrators. In 1800, a maximum security state prison was built at Charlestown, Massachusetts, and was touted by the Board of Visitors to
Charlestown as being exceptionally secure and well-built. Soon after their remarks were publicized, sixteen inmates escaped (Rothman 1971:90). With the occurrence of several incidents like this, security came to absolutely preoccupy many prison planners. This concern was to be most clearly seen in the period of prison construction following the 1830's.

As long as prisons have existed in America, the rooms in which the inmates slept and spent most of their time have comprised the very core of the institution (Carter, McGee, and Nelson 1975:147). This was especially true of this early time period, in which many prisoners were rarely subject to any significant amounts of mobility within the institution. Ironically, many prison wardens of the nineteenth century shared a belief that dull, monotonous cell housing would make labor a welcome diversion in the inmate's eyes: "a privilege, not a punishment" (Rothman 1971:146). As it turned out, the dullness of the cells often led beyond boredom to mental derangement.

Early nineteenth-century prison facades were frequently modelled after military or factory ideologies; physical layouts were usually designed for order and regularity, with symmetricality playing an important role. Many institutions from the early days of prison reform through the mid-1800's were reminiscent of medieval fortresses, both for functional (thick walls and observation turrets for security) and impressive purposes (Rothman 1971:107). This was because the outward appearances of correctional institutions were
expected not only to reflect economy and security in design, but also to promote a deterrent influence upon the inmates and the public. In other words, a prison was supposed to instill horror in the observer. Low, somber, massive constructions were thought to achieve this effect, with such oppressive decorations as bas-relief chains or dragons above the gates (Johnston 1973:27).

Thus, prisons took root in the United States, but there were obvious problems with the system of penology. The impetus seemed merely to be to have a prison, regardless of its humanity or efficacy, and the young states were producing some poor specimens. Widespread troubles included overcrowding, inadequate personnel, idleness of prisoners, and poor physical structures of institutions. For just these reasons, the Walnut Street Jail facility was to be abandoned in 1835 upon the completion of a new county jail. The entire new Quaker penal philosophy might have been abandoned as well in favor of the older, easier methods of punishment, had it not been for the establishment of the prisons at Auburn, New York, and Philadelphia (Gill 1972:111).
Between 1816 and 1829, New York and Pennsylvania were the leaders in innovative prison design and construction. With close inspection of the Walnut Street Jail, each state improvised upon the penitentiary concept of individual confinement and reading of the Bible to instill repent, and, it was hoped, reform in the offender. The Auburn or congregate system was conceived in prisons built at Auburn and later Ossining, New York; then the Pennsylvania or separate system, its rival, was established at Pittsburgh and Philadelphia institutions. Shortly after the introduction of these two systems, Connecticut, Massachusetts, Maryland, and New Jersey were hurrying to modify their existing prison structures or build new ones, with several midwestern states soon to follow suit (Rothman 1971:81). Each style was highly influential; in fact, for nearly the entire nineteenth century, the evolution of prison design depended solely on these two distinct systems (U. N. Social Defense Research Institute 1975:18).

It was with the acceptance of the Auburn and Pennsylvania systems that architecture began to be of major importance in developing, determining, and implementing penal philosophy. Indeed, architects today continue to wield considerable power and influence over correctional ideologies— for better and for worse, as shall be discussed further on.

At the time of construction of Auburn and the Philadelphia institution known as Eastern State Penitentiary, three major causes of criminal behavior were cited by the
penologists of the day. These were: a harmful environment, a general lack of intelligence and aptitude, and an ignorance of right and wrong due to insufficient knowledge of the Bible. The penal philosophy tied to architecture therefore aimed at a building which would cut off harmful outside influences, teach the offender work skills, and give the offender an opportunity to learn from the Bible the meaning of right and wrong. Eastern State and Auburn were the products of this ideology (Nagel 1973:110). Further, underlying the isolationist tenet of both the Auburn and Pennsylvania systems was the belief that interaction of and communication between prisoners led to further crime upon release. Another concept entailed in the designs was that evil temptations to crime were rampant in society at large; therefore, penologists felt that total separation from others and strict discipline would turn the offender away from crime (Rothman 1971:82).

Here, I would like to present a more detailed examination of the Auburn and Pennsylvania systems.

THE AUBURN SYSTEM

Auburn was New York's second prison. The first was Newgate, erected in New York City in 1797. It quickly became overcrowded, necessitating the eventual construction of Auburn in 1816. Until the latter began to accept prisoners, Newgate was releasing old inmates simply to make room for new ones (Reid 1976:517). The men responsible for
the inception of the Auburn system were Elam Lynds, the institution's first warden, and John Cray, his architect-builder. Lynds's personal view was that the criminal's spirit had to be broken before any reformation could be expected, and that this should be carried out in a "fearsome and forbidding" environment (Gill 1972:111-112). Drawing upon selected aspects of the Walnut Street Jail, he devised the Auburn system, also called the Silent System. Its principles were expounded in the practice of allowing the completely silent interaction of prisoners during work in the daytime, but solitary confinement at night. Long, rectangular cell blocks with corridors all along the perimeter (rather than through the middle) exemplified this system (U. N. Social Defense Research Institute 1975:19). Cray showed in his architectural plan total compliance with the treatment philosophy intended for the New York institution; however, his attention to matters of plumbing and lighting was poor in comparison to John Haviland's, the designer of Eastern State (Reid 1976:522-523).

When Auburn was begun in 1816, only congregate rooms meant to house eight to twelve inmates were built—twenty-eight of them. Three years later, the New York state legislature followed popular sentiment and approved the construction of a new wing of small, single-occupancy cells (Hawes 1979:41). Upon completion of the wing in April 1821, the Legislature requested that the Auburn officers delineate three classes among their prisoners. The "most hardened" criminals were to be placed in individual solitary confine-
ment cells; those less hardened were also to be kept in solitary confinement until they showed signs of repentance, when they would be allowed out of their cells for certain daytime duties; and the inmates guilty of the least serious offenses were to be segregated at night but grouped together for silent work during the day, in quarries and fields as well as shops. This new system of prisoner organization implied an increased determination to utilize imprisonment itself as a form of punishment; unfortunately, the plan was doomed to fail (McKelvey 1977:13). Of the eighty-three members of Auburn's first "hardened class" of criminals kept in perpetual solitary confinement, five died; many others went insane (Goldfarb and Singer 1973:29). Following a revealing visit by the Governor in 1823, the practice of perpetual solitary confinement at Auburn was abandoned. In fact, upon viewing the extraordinarily cramped living quarters of the "most hardened" offenders, the Governor granted pardons to the majority of them. Thereafter, the more widely-recognized Auburn model was employed: that of separate cells for the inmates at night, with closely supervised work in silence during the day (McKelvey 1977:13-14).

It was certainly the tiny dimensions of the cells in which the solitary confinement prisoners at Auburn were constantly enclosed that brought about the men's inability to cope with their living conditions. Reformers deplored the inhumanity evident in the design, arguing that this type of imprisonment accomplished little toward preparation for
the inmate's return to society. They were quite right in this respect—Auburn was more like a series of cages for animals than for men. Each cell of the penitentiary measured $7 \times 3{\frac{1}{2}} \times 7$ feet and opened onto narrow wooden walkways, such that only the first level of the five-tiered enclosure could have direct access to the outer walls of the building. One disadvantage to this design was that little sunlight from the outer windows reached the slatted cell doors, and the inmates passed much of their time in relative gloom (McKelvey 1977:12).

The inside-cell arrangement initiated at Auburn is typically regarded as more secure than outside cells (those which abut on an outer wall), because prisoners housed in the former type have no window through which to attempt an escape (Carter, McGee, and Nelson 1975:147). Actually, one of the reasons the Auburn system featured an inner-cell plan was the prohibitive cost of installing an outside window in each of the several hundred cells. An additional example, then, may be seen herein regarding the way in which economic considerations affect prison design (McKelvey 1977:13). Further evidence of frugal concern is apparent in the institution's lack of plumbing. At both Auburn and Sing Sing, built in 1825, buckets served as cell toilets (and were still in use over one hundred years later at these institutions (MacCormick and Garrett 1926:441)). All cells were very dark and damp, with inadequate ventilation. After a time, the stone partitions and wood-and-iron doors were replaced with steel; thus, the cells truly
became metal cages with barred fronts, completely devoid of privacy (Johnston 1973:40-41).

The basic layout of the Auburn institution consisted of a central administrative building containing offices, a chapel consisting of single, walled-off cubicles, and a dining hall, to which was connected on each side a multi-level cellblock. Within the enclosure of the surrounding walls were the hospital, power plant, and workshops (Johnston 1973:40). Overall, the physical plant of the prison lay in a U-shape, completely surrounded by a high stone wall.

The Auburn plan was quite successful after the abolishment of the solitary confinement experiment. Until the mid-1830's, only Auburn and three other facilities---Baltimore, Frankfort, and Kentucky---included a dining room to vary the sights and experiences of the prisoners (McKelvey 1977:28). Indeed, from about 1825 on, the Auburn plan was the model for the greater part of prison construction in the United States (Johnston 1973:40). Sing Sing, built on the Auburn plan as well, established the practice of incorporating long, dark cell corridors into prisons; this concept was to dominate corrections for a hundred years (Goldfarb and Singer 1973:36-37).

The basic problem with the Auburn system was that there could be no feasible manner in which to absolutely prevent communication between prisoners while they worked and dined together. Complete supervision was impossible to maintain, and when conversers were apprehended in the act they were sentenced to severe punishments (which generally did nothing
to solve the communication problem). Those opposed to the Auburn system declared that this defect made cruelty inherent in the congregate plan. Also, the silent system could only function effectively when prisons were not at all overcrowded. As populations grew in the early 1830's, it was necessary to construct whole new cellblocks in order to maintain the individual cell occupancy principle. If cell accommodations rose above one person to a cubicle, the isolation axiom would immediately be violated. This was true for the Pennsylvania system as well (Rothman 1971:98).

The Auburn system was obviously a momentous development in the prison science of the nineteenth century. It was destined to influence the design of a great many institutions constructed after its inception. Its one major rival was the Pennsylvania system, whose tale also begins with the Walnut Street Jail; thus, that shall be our starting place.

THE PENNSYLVANIA SYSTEM

By 1800, the Walnut Street Jail had experienced a breakdown in its administration. It is believed this was due to the political circumstances surrounding Caleb Lownes' departure from the institution. The last few years had seen an increase in the difficulty of controlling the prisoners: they set fire to several wooden outbuildings and were generally unmanageable. When it was apparent that little could be done to return the Jail to its former state, the Philadelphia Prison Society began to seek support from the Pennsylvania
legislature for building a new penitentiary. Not until 1818 did the Legislature pass an act appropriating funds for this purpose, and the Western State Penitentiary was opened in Pittsburgh in 1826. Unfortunately, this prison proved to have been very poorly designed and executed, and made no provisions for labor, either congregate or solitary. It was ordered that the prison be razed, and a new one constructed in Philadelphia. At this point, the Pennsylvania system came into existence (Teeters 1955:86; Barnes and Teeters 1945:507).

The Pennsylvania system, also known as the Solitary System, entailed absolute solitary confinement at all times, with any work being performed in the inmate's cell (U. N. Social Defense Research Institute 1975:19). The system was formulated by the Philadelphia Prison Society, and architect John Haviland was commissioned to create a structure to suit the philosophy derived from the concept of penitent isolation seen at the Walnut Street Jail.

Haviland developed a unique solitary-confinement-and-labor plan for the penitentiary and began to build. However, in 1826 the Pennsylvania legislature, impressed by what they saw as Auburn's success (more likely its large share of public attention), recommended that the Eastern State Penitentiary be redesigned to approximate Auburn before its completion. The Legislature's wishes were ignored, and Eastern State incorporated labor in the individual cells, rather than congregate shops, into the basic system of solitary confinement. Visiting European scholars and theorists
were greatly impressed by the new Pennsylvania plan. Some, such as Alexis de Tocqueville and Gustave de Beaumont, were disapproving of the vast sums of money which had apparently gone merely for the imposing, castle-like exterior of the facility (Hawes 1979: 44–45). In fact, at the time it was opened in 1829, Eastern State was the largest and most expensive construction of any type in the United States. Representatives from other states as well as other countries arrived to inspect the institution, and expressed approval of the system of total isolation (Johnston 1973: 31–33).

Haviland's design for Eastern State perfected the wheel or radial plan, which had been seen in a primitive form in England. The philosophy and the physical structure of the Pennsylvania plan were virtually synonymous from every conceptual angle; the style was to be highly significant for a great while. The plan physically resembled thick spokes of a wheel emanating from a central hub which contained the prison's administrative space. Each spoke was a single-story wing of individual outside cells with attached exercise yards; corridors ran down the center of each wing. Surrounding all of this was a rectangular wall with elevated guard towers at each corner. The wedges of lawn left by the spokes reaching the perimeter were used as garden plots for growing vegetables to feed the inmates.

The radial plan counted among its virtues ease of management, ease of supervision, and physical compactness. However, the costs entailed were exorbitant, both for construction and upkeep (Carter, McGee, and Nelson 1975: 156).
The architectural design for Eastern State was derived in part from the San Michele House of Correction, and in part from the House of Correction at Ghent in Belgium. Both of these European institutions had received favorable reviews from John Howard, who happened to be a distant cousin of John Haviland (Barnes and Teeters 1945:482). Reid (1976) believes Haviland was also influenced by Jeremy Bentham's Panopticon design, which shall be described in the section on prison styles.

The cells at Eastern State were of good size---8 x 12, with ten-foot ceilings---and boasted toilets, running water, and hot water heating. Only during severe illness did a prisoner leave his cell; otherwise, his entire sentence was spent in his cubicle and in the private walled-in exercise yard adjoining it. Haviland paid admirable attention to detail in his design: the paving stones in the floor were joined out of the inmate's reach; communication between inmates was supposedly made architecturally impossible; and ventilation, lighting, plumbing, and heating were of the most modern sort. Most importantly, every aspect of its design conformed to the treatment philosophy involved (Johnston 1973:30-31). After Eastern State gained influence over New Jersey and other Pennsylvania prison, the radial penitentiary was reproduced in nearly every country in Europe and well as Japan, China, and South America (Johnston 1973:36).

Some of the reasons behind instituting the practice of total isolation for every prisoner under the Pennsylvania
system included the fact that solitude not only provided punishment, but the time for reflection on one's misdeeds; also, group escapes or assaults on guards could be prevented. To advance moral reform, religious instruction (self-taught) was an integral part of the inmates' regime. Other diversions were outdoor exercise and bench labor within the cell (Nagel 1973:8). Throughout his prison term, in fact, an inmate saw and spoke with only a very few guards and carefully chosen visitors—usually chaplains. The system was so adamant about total isolation that every new prisoner was made to wear a hood over his head as the guards marched him to his cell. Under no circumstances would the prison officials enable a prisoner to see or be seen by his peers (Rothman 1971:82-85).

Because there was rarely any occasion for inmate traffic through the institution, guards at Eastern State had little need for special correctional training. Security was usually a simple matter—disturbances were infrequent and escapes were difficult to bring about. Disciplinary punishment was hardly ever meted out, as rule violations were few. For these reasons, the Pennsylvania system predicted quiet, efficient, and secure operation of an institution which would ultimately reform its inmates (Rothman 1971:86). Of course, such was not exactly the case.

In spite of its great success in shaping the architectural designs of penitentiaries, the Pennsylvania system had definite drawbacks. Its costs were exorbitant both for construction and maintenance; also, total isolation had a notably
negative effect on the mental and physical health of the inmates, as had been the case at Auburn (Johnston 1973:37). One of the severest critics of the Pennsylvania system was Heinrich Heine, the German journalist; he referred to Eastern State as "horrible, inhuman, even unnatural." Dickens also questioned the use of this system, opining that the public could not possibly fathom "the immense amount of torture and agony which this dreadful punishment, prolonged for years, inflicts upon the sufferers" (Pevsner 1976:168). Interestingly, the Pennsylvania had much more influence outside the United States than within it: a much greater impact resulted from the development of Auburn. Still, there are countries where, even now, prisoners take their meals in their cells and are completely confined to their cells during the first part of their sentence (Johnston 1973:37).

The Auburn plan and the Pennsylvania plan were in ways analogous, in ways quite distinct. Nevertheless, each was derived from the fundamental Quaker construct of penitence through confinement and labor. This philosophy regarded the cell not as a dungeon, but as a private place for reflection and repentance. Unfortunately, the inside-cell design at Auburn made these little "sanctuaries" too dark and distressing, and their intended purpose was hardly achieved. Even so, in 1825 Louis Dwight led the Boston Prison Discipline Society in unanimous approval and praise of Auburn. This action spawned what was to become a lengthy controversy over the attributes of the two systems and which
was to determine the internal arrangements of American prisons (Hawes 1979:42-44).

The conflict between Auburn and Pennsylvania was headed by Dwight's Boston Prison Discipline Society and the Philadelphia Prison Society, founded (it will be recalled) in 1787 by Benjamin Franklin and Dr. Benjamin Rush (Barnes and Teeters 1945:533). As the supporters of the two systems waged battle upon one another, each attempted to establish superiority not only by proclaiming it for the respective institutions, but also through singling out particular deficiencies in the opponent plan. Auburn's supporters made their deepest dig at the Pennsylvania design by implying that illicit communication between prisoners was possible because the cell walls were not sufficiently thick, and sewage pipes allowed enough sound to travel to permit conversation (Rothman 1971:87). This charge was not solidly based, for little if any inmate communication was actually possible (Barnes and Teeters 1945:512). After 1845, the Prison Society of New York joined Boston in supporting the Auburn system, whereas the Philadelphia organization naturally continued to favor the Pennsylvania plan. As history revealed, the latter had only limited success outside its home state (in this country, that is). Several other states adopted the system for a few years and subsequently abolished it (Barnes and Teeters 1945:535).

While the Auburn-Pennsylvania debate wore on through the nineteenth century, correctional facilities constructed during that time period were mostly in the style of the
former institution. Rather than signifying a clear public preference for the Auburn plan, this might support the concept that its popularity lay in its lower construction and maintenance costs: inmate clean-up crews did not fit into Pennsylvania’s correctional ideology (Hawes 1979:47). Congregate labor undeniably turned a greater profit than individual cell labor; this was certainly appealing to legislators and penologists alike. Even so, neither system was notably successful in reforming offenders (Johnston 1973:39). This fact was underscored at the institutions built as reproductions of Auburn: few adhered strongly to the silent-separationist maxims set forth, and discipline was often wanting. Before any steps could be taken to handle these shortcomings, the Civil War broke out (Rothman 1971:99-101). By this time, only Eastern State was still solidly adhering to the solitary system. It maintained this practice up until the late 1860’s when finally two men were placed in one cell and an era ended (McKelvey 1977:50).

Neither Eastern State nor Auburn were ideal institutions; however, they should be examined from the perspective held by Killinger and Cromwell:

"The most that can be said for this period of American prison history is that, despite all its stupidities and cruelties, it was better than a return to the barbarities of capital and corporal punishment for crime. In the face of public indignation at the chaos existing in early American prisons in 1820, it maintained the penitentiary system (Killinger and Cromwell 1973:41)."

By the time of the Civil War, prison facilities through-
out the United States were greatly overcrowded: two or three prisoners frequently shared cells constructed for a single occupant. Inmate populations had increased so dramatically as to prompt the governors of several states to actually employ their power to pardon as a means of relieving prison crowding conditions (McKelvey 1977:61). At this point in American history, it was generally accepted that prison could not correct effectively, but it could remove the offender from society at large. This it did, by warehousing inmates in ever-larger institutions. Much of prison management philosophy was founded in the concept of maximum economy, and bigger prisons were more economically run. Confinement was thus the only goal of corrections at that time. As William Nagel states:

"The inevitable consequence was the development of operational monstrosities. It is impossible to remove large numbers of men from the free world, isolate them together in the unnaturalness of huge prisons, and not have management problems of staggering dimensions. The tensions and frustrations inherent in prisons of any size are magnified by the herding together of large numbers of troubled people. The result is the evolution of a prison goal that, when stripped of all the correctional rhetoric, is simply, 'keep the lid on.' Dehumanization and violence are major results (Nagel 1976:112)."

Though we now know that prisons should under no circumstances exceed 500 capacity, the average institution built before 1960 was intended to confine a population of 1,100 (Nagel 1973:55).

Such was the situation at the end of the Civil War: widespread overcrowding in outsize prisons. The public had begun to recognize the failure of the once-lauded specialized
penal systems, and was ready for a change. Most assuredly, change was on its way. In 1867, Enoch Wines and Theodore Dwight made a report to the New York state legislature regarding prison conditions in that state. On the whole, these members of the New York Prison Discipline Association were unimpressed with the idea that architecture could affect rehabilitation by providing a particular kind of environment. They argued against the construction of monumental facilities along the lines of Eastern State, opining that a stately exterior of a penitentiary somehow implied the dignity of crime (Rothman 1971:240). Apparently, they were not overly concerned with the vast numbers of inmates housed in these monumental facilities. In any case, within the next three years they would emphatically endorse the construction of the first U. S. Reformatory at Elmira, New York, whose majestic facade resembled nothing so much as a Gothic palace.

The reformatory system, subsequent to the penitentiary, began to be developed in Britain around 1853 when all but one of the British colonies refused to accept transported convicts, forcing the revision of the existing penal system. An act was passed that year in Parliament calling for a three-stage "Prison System": prisoners would first be placed in solitary confinement; associative labor would then be allowed; and finally would come conditional release on a 'ticket of leave' (parole). This system was refined in the late 1850's by Sir Walter Crofton, resulting in the Irish Convict System. Here, the three stages were more detailed:
the second stage was broken down into four progressive substages, which prisoners could attain by the earning of points through good behavior. The aims of the Irish system were to teach desire for and enjoyment of labor (through the removal of such during the first stage); habits of industry; and self-restraint (by point-earning in the second stage and 'work-release' in the third). Essentially, the Irish system was a graded system of prisons (Putney and Putney 1962:437-440).

Nearly from its inception, the Irish system received a great deal of attention in the United States. When the first U. S. Prison Congress convened in Cincinnati in 1870, the idea of a reformative prison plan was extremely popular. Zebulon Brockway, one of the principal penologists of the day, was particularly impressed; Brockway went on to mold a new prison at Elmira, New York, into America's first reformatory. Built in 1876, Elmira was the locale of a shift in penological focus from punishment and penitence to, specifically, rehabilitation (Hopkins 1918:4). Through the new system, inmates could acquire work skills and put them to use upon release. Here was the first true application of parole and the indeterminate sentence in this country, two aspects of corrections which are now basic to the U. S. prison system (Putney and Putney 1962:441).

From the floor plans and photographs found in the New York State Reformatory Year Book for 1891, one can see that the Elmira facility was constructed basically in a U-shape with inside cells stacked in four-story tiers, very much
like Auburn. Superintendent Brockway inhabited a house of Victorian architecture connected to the front of the institution, which was also Victorian/Gothic in style—many turrets and belfries were incorporated into the external design, resembling a castle more than a prison. High arched windows were featured on all sides of the facility, but the later cell block additions were ornamented to a much lesser degree than the original reformatory (New York State Reformatory 1891). One of the most self-defeating characteristics of the Elmira Reformatory, according to Robert Barnes, was its inappropriate maximum-security design. For a prison utilizing minimum-security concepts, this was a glaringly incongruous plant (Barnes 1951:276).

While originally constructed to hold only five hundred inmates, Elmira soon experienced severe overcrowding (Goldfarb and Singer 1973:42). Although by November 1891 there were 750 rooms in the facility, Elmira’s inmate population numbered 1,313. Brockway noted that the inmate congestion was hindering the reformative process, and hoped the opening of a new cellblock wing would alleviate the overcrowding. (This new wing consisted of 1,240 cells, ranging in size from eight feet by four feet to eight feet square.) Unfortunately, the Reformatory population continued to grow until it attained triple capacity at the end of the nineteenth century (New York State Reformatory 1891).

Elmira’s first residents were young men between the ages of sixteen and thirty, transferred from Auburn; most of them were first offenders. While Brockway was completely
devoted to the reformative ideology, he seemed not to recognize any connection between the architecture of an institution and its rehabilitative aims. Even in 1910 Brockway was advocating the use of inside cells in the Auburn style for the general reformatory population, and a section of cells built on the Pennsylvania plan for highly intractable inmates (Goldfarb and Singer 1973:41-42). As a matter of fact, the majority of prisons were built according to the Auburn plan until approximately 1913, by which time most states had erected maximum-security prisons of massive design. Construction of penal institutions lulled during World War I, without gaining momentum until the 1930's (Johnston 1973:40).

Education was one of the essential thrusts of the reformatory system. It was believed that by "imparting intelligence" unto the offender, his or her reform was made so much the more likely. Social training and good-conduct rewards, penologists stated, would encourage prisoners to manage their destinies positively and work toward parole (Goldfarb and Singer 1973:40-41). In addition to classroom learning, the basic tenets of the reformatory were security and direction. Custody of the prison should be sufficient to discourage attempts to escape, and the prisoner's total existence should be directed---mentally and physically---away from criminality and toward reform. Elmira's beginning years were optimistic, and the system seemed to function without serious defect; by the end of the nineteenth century, however, overcrowding of the refor-
matory had led to what Brockway regarded as the ineffectiveness and superficiality of the program for reform. In 1900, Brockway resigned as Elmira's superintendent and the reformatory system as a whole began to decline, for the American institutions which had copied Elmira were poor imitations and proved unsuccessful at reforming offenders. The turn of the century, then, was essentially the end of true reformatory movement in this country (Putney and Putney 1962: 443). Regardless of this, the opening of the twentieth century saw mostly reformatory-type prisons being constructed. A problem basic to the reformatory which was soon recognized concerned its limited applicability: young first offenders were thought to benefit the most from the strict educational program. Juvenile institutions eventually took up the concept as a fundamental aspect of that particular branch of corrections (Barnes and Teeters 1945:555).

As indicated above, little prison construction occurred during World War I, and after its close the issue of overcrowding was a prime incentive for beginning new building programs. To the dismay of most state legislatures, proposed correctional institutions were generally much too expensive in construction and upkeep (McKelvey 1977:282). With the gradual onset of the Depression, funds for many and specialized prisons were not to be widely had; in consideration of this and in light of the ever-mounting inmate populations of the day, a sort of competition took place between several states to see who could build the biggest prison. One of the resultant monstrosities was the Pan-
optican-style institution at Stateville, Illinois, whose physical appearance shall be described in a later section. Its population reached 3,250 (double occupancy) by the end of the 1920's. In California, the prisons at Folsom and San Quentin were expanded to increase their capacity: all new cells measured $10\frac{1}{2} \times 4\frac{1}{2} \times 7\frac{1}{2}$ feet and slept two---only the insane prisoners were given single cells. This "inmate boom" of the twenties, brought on by the great increase in crime, caught several midwestern states particularly unprepared. Therefore, Michigan, Missouri, and Ohio resorted to crowding prisoners into too-small facilities while hurrying to complete construction of larger prisons. In 1925 at Columbus, Ohio, 2,500 prisoners were being crammed into the 840 old cells and dormitories, while the old prison at Jefferson, Missouri, was putting as many as three inmates into a single-occupancy cell (McKelvey 1977:282-283).

Not only were the prisons built during this period oversized; another shortcoming lies in their general lack of appropriate designs for dealing with different classes of inmates. The large institutions, even when incorporating inside and outside cells and, in some cases, dormitories, were still aimed at mass instead of individualized treatment (McKelvey 1977:308-309). This was soon to change, as will be seen in the following section.
Section II

Part 1

PRISON STYLES,

1910-1980
It is stated in the *Handbook of Correctional Institution Design and Construction* that the single factor which has "so retarded the development and success of rehabilitative programs" is the recent lag in correctional architecture (*U. S. Bureau of Prisons 1949:2*). This statement alone shows the increasing awareness of the environment's influence on correctional processes, particularly behavior. Of course, the full extent of its influence, on a macro- or a micro-level, is not yet known; nor will it be for a long time, if ever. In the ensuing sections, architectural effect on inmate behavior will be examined. Here, I would like to present a summary of the basic styles of prison construction between about 1910 and the present day.

As of the early part of the twentieth century, prison architecture reverted to being merely stylistic variations on a theme---no longer were "systems" of penal treatment exemplified in institutional design. At this time, then, three different styles were dominant: the radial plan; the Auburn or inside-cell plan; and the telephone-pole plan, a high-security plan soon to be described. The last evolved with the need for increased prisoner mobility within the prison buildings due to vocational training and educational classes conducted in various parts of the institution (*Johnston 1973:41*). By about 1925, penal administrators had found that even after all the stylistic and ideological reforms of the nineteenth century, the correctional institution was still basically a hit-or-miss social configu-
ration: rehabilitation seemed rare, due in part to the influence of the inmate subculture. With this realization, prison planners began to concentrate on the inmate himself, his contacts with other inmates, and how these contacts could be controlled or modified via architectural changes (Johnston 1973:50). Prior to this time, all that was expected of a prison architect was the production of a secure, relatively sanitary institution which included work facilities. The development of a penal philosophy was not the architect's responsibility. As inmate populations grew and inmate activities (aside from labor) increased, however, there arose a need for designs which could cope with the greater prisoner mobility and extensive programs (Johnston 1973:52).

A primary source of problems in the field of corrections which deserves mention here is the fragmentation of authority. The system of corrections in the United States is controlled by all four levels of government—Federal, state, county, and local. Therefore, prisons occur at several levels: federal, state, and county, for the most part. No underlying form of organization ties together the various parts of the system; there is no planning for the system as a whole (Nagel 1973:14). This is part of the reason for the great variations in prison size, quality, and so on.

As noted previously, reformatories were still being built in the beginning of the twentieth century. The District of Columbia's Lorton Prison at Lorton, Virginia, was
intended as a reformatory, but did not follow the architectural style of Elmira as had so many other prisons built after 1876. Instead, Lorton was constructed in 1916 with dormitories rather than cell blocks and with no surrounding prison wall. Within the next ten years, New Jersey, Massachusetts, and New York built prisons following this pattern. Diagnosis and treatment were primary aspects of the penal philosophy associated with these new, relatively open institutions (Goldfarb and Singer 1973:44). Many men's prisons built since this period have included accommodations for dormitories, or barracks-like living quarters traditionally used in juvenile homes for boys. As with so many other aspects of prison construction, the comparatively low construction cost per inmate occupant of dormitory-style housing is the strongest argument for its utilization. For inmates for whom little supervision is necessary, such as farm workers or those in forestry camps, dormitories are marginally acceptable. However, due to the great diversity of inmate types in most prisons, individual rooms or cells for adult prisoners are highly preferable in order to ensure the utmost personal safety (Carter, McGee, and Nelson 1975: 147-148). As I was told at one prison during my fieldwork, dormitories' advantages lie in their ease of supervision (necessitating the presence of fewer correctional officers) and absence of suicide. However, the "open-bay" arrangements contribute to tension and trouble, particularly in hot weather.

A truly innovative design appearing at about the same
time as Lorton resulted from the Howard-prompted reform concerns of the eighteenth century. This was the circular plan, the most infamous of which was Jeremy Bentham's Panopticon. From 1787 until his death, the philosopher-jurist tried unsuccessfully to have his circular prison constructed in England. Reproductions of his design were built during the next two centuries in Spain, Holland, Cuba, and the United States. One such prison exists at Stateville, Illinois; it was built in 1917 (Carter, McGee, and Nelson 1975:159).

The Panopticon prison is circular, all cells being arranged in tiers along the outside wall, with a large guard post located in the center of the floor. All cells have glass or grille fronts and large windows in back so that prisoners may be observed by the guards at all times. Bentham's original plan included speaking tubes leading from each cell to the guard tower, enabling the man on duty to hear all as well as see all (Johnston 1973:18-20). Although Bentham's design was exceedingly costly to construct, his penal philosophies were bent on the greatest possible economy. Food and clothing should be of the cheapest available, said Bentham, while still maintaining prisoner health and comfort. He also prescribed detailed programs of exercise, cleanliness, education, and religious service; these, however, were never widely accepted (Goldfarb and Singer 1973:32).

One rather obvious drawback to the Panopticon plan is the fact that while the guard can easily observe the movements of the prisoners, they can just as easily observe the
guard. Also, a great deal of space is wasted in the design, as can be seen in photographs showing the vast amount of unused floor space between the guard station and the cell tiers. Last, inherent in this type of design is its potential for an over-large population: the temptation is to make it as capacious as possible, to hold as many men as will fit in a space which can ostensibly be supervised by a single guard (Johnston 1973:57). This seems to have been the case at Stateville.

A rather frequently-found style of prison design employs the architectural scheme of a hollow square or rectangle, in which the buildings are connected around a central courtyard; this is known as the self-enclosing plan. The design, similar in style to many medieval monasteries, was followed in a series of Federal prisons built between 1935 and 1940. Although the majority of these housed only about 500 men, it has ultimately been found that the self-enclosing plan is most successful for institutions of fewer than 300 inmates if two additional enclosures are added—one for recreation purposes and another for utility buildings such as shops and the heating plant. When only one enclosed area exists, it must be used as the recreation field as well as the thoroughfare for everyone moving from one part of the institution to another. The latter use is sometimes considered an inconvenience in itself, as the courtyard must accommodate traffic in all weather; in Nagel's view, however, this is the most desirable aspect afforded by prisons designed in this style. Not only does this pro-
provide sensory stimulation usually absent from prison environments, but it reduces apparent crowding and allows people to avoid constant physical contact with others (Nagel 1973:43). Recreational use of the yard poses problems, unfortunately, stemming from inmate access to the doors and windows of the surrounding buildings (Carter, McGee, and Nelson 1975:157). One prison built on this plan was Attica, constructed in 1931.

A derivative of the self-enclosing plan is the multiple quadrangle plan. Here, the total institution is split up into two or more quadrangles, such that an aerial view of the prison structure resembles a large square with a cross in the middle, creating four enclosed courtyards. The cells are located in the outer buildings, whereas the cross contains offices, classrooms, dining and kitchen areas, hospital, and shops. In this plan, a large institution may be conveniently managed as four small facilities with varying programs and housing inmates of different custody levels but entailing lower operational costs (Carter, McGee, and Nelson 1975:158). The main drawbacks of these courtyard plans, however, are the great expense of construction; the excessive distance between cell houses and other facilities; and the too-long corridors in the main building. At the Greenhaven Maximum Security Disciplinary Barracks in New York, some staff members ride bicycles in the hallways to get from one part of the institution to another (U. N. Social Defense Research Institute 1975:28).

The telephone-pole plan has already been mentioned as
significant to correctional institution designs of the twentieth century. It is thought that the American telephone-pole plan was originally derived from the Wormwood Scrubs Prison, built between 1874 and 1891 in London. Wormwood Scrubs featured four parallel cell blocks bisected by a long, continuous passageway, and separated by shops and dining wings. In 1898 a telephone-pole plan prison was opened at Fresnes, outside Paris; being more defined in form than Wormwood Scrubs, its design proved more influential in the United States (Johnston 1973:42-43). Both Sanford Bates and Alfred Hopkins, a New York prison architect, studied modern penal designs abroad during the 1920's. From their study was developed the plan for the Federal Penitentiary at Lewisburg, Pennsylvania, adapted from Fresnes (McKelvey 1977:302-303).

The telephone-pole plan is so called because of its long central corridor with several "crossarm" buildings attached to it, resembling a telephone pole fallen over. This style is highly functional in engineering qualities due to its economical distribution of facilities for water, heat, electricity, sewage, and ventilation: all are conducted via a utility tunnel underneath the main corridor. It is also efficient in the way of inmate traffic and security, as most activities may take place inside the buildings (Carter, McGee, and Nelson 1975:157).

The Lewisburg Penitentiary was one of the first institutions to combine different security levels within the same enclosure. It included dormitories, "honor rooms,"
medium security outside cells, and maximum security inside cells. All parts of the institution except for the workshops were connected by a single corridor. At the time, the Federal Bureau of Prisons was highly impressed with architect Hopkins's "discovery" that the majority of adult felons do not require maximum security housing (Johnston 1973:45).

The 1950's saw a considerable effort on the part of many states to replace their outdated maximum security prisons, often with telephone-pole plan. One of the most favorable aspects of the plan is the option of closing off corridor zones according to degree of custody, type of facility, or offender group (Johnston 1973:46-47). Unfortunately, as shall be seen in the instance of the Federal Penitentiary at Atlanta, it is not always easy to successfully segregate different groups of inmates since the establishment is so much a unified structure. In addition, this type of penitentiary in particular tends to have an atmosphere that is extremely sterile and redundant in its rows of cells and bare, endless corridors (Nagel 1973:40-41).

Another style of prison similar to the above is the high-rise plan. Often seen in urban prisons, the high-rise plan is like an upright telephone-pole plan with floors of cells replacing wings, and elevators and stairs instead of the main corridor. As is the telephone-pole plan, the high-rise is efficient in its channelling of all movement via a single route: in this case the elevator shaft. The drawbacks include rather expensive construction costs, the rela-
tive unreliability and expense of operating elevators in a correctional institution, and the problem of inmate movement en masse (Carter, McGee, and Nelson 1975:158).

All the prison styles discussed up to this point have reflected the ultimate concern with security: keeping the offender incarcerated at all costs. With the spread of inmate classification, however, the introduction of prisons less reminiscent of cages has been possible. Recent architects, no longer as obsessed with unequivocal imprisonment, have been able to devise a highly significant prison design applicable to many types of inmates. This is the open campus or cottage plan, in which cottages or dormitories as well as school, dining hall, infirmary, and other service buildings are arranged around a center mall. Therefore, traffic between these facilities must be outdoors as opposed to through tunnels or corridors as in conventional security prisons. The campus plan is inherently more informal, less restrictive, and generally more pleasant than earlier designs, and is used at some medium- as well as many minimum-security institutions (Johnston 1973:50).

Perhaps the earliest examples of "open" institutions were penal camps, set up at former World War I army posts by Sanford Bates, the director of the Federal Bureau of Prisons, in about 1930. Here, the least dangerous offenders performed "useful services," and the camps, initiated as a solution to penitentiary overcrowding, lent strength to the concept that a traditional, walled-in prison was not absolutely imperative for all prisoners (McKelvey 1977:302).
The campus plan is recognizable mostly by its lack of obviously oppressive physical structures such as walls, high guard towers, heavy locks, and security windows. Such a minimum-security plan is frequently seen in women's prisons (Carter, McGee, and Nelson 1975:155). The State Correctional Institution for Women at Muncy, Pennsylvania, is one example; the campus-style facility is similar to a college in appearance. Its brick buildings were designed by Horace Trumbauer, a codeigner of the Philadelphia Museum of Art, and opened in 1920. Before Muncy's construction, female felons were housed in a wing of the Eastern State Penitentiary and at Pittsburgh's Western State Penitentiary (reconstructed). Only when it became known that Eastern State's warden was using some of his women prisoners as prostitutes did Pennsylvania authorities call for an all-women state prison to be built (Schaefer 1980:1). Female felons have experienced this kind of treatment not infrequently, it seems, at least in the nineteenth century. By the early twentieth century improvements on many women's reformatories had begun; these had originated along the same guidelines as men's prisons, incorporating cell block arrangements into most designs. Soon campus plans, featuring fully appointed living units housing thirty to fifty inmates apiece, replaced the traditional institutions (Gibson 1973:214). The ideology behind the increased humanization of women's correctional institutions stems from society's tenets concerning the delicacy of women, whether criminals or not. In the public mind, female felons should not be relegated to environments
as harsh as those of their male counterparts, but should be treated with greater compassion.

A note here on female prisoners: women in prison are much fewer in number than men. For every seven arrestees, only one is a woman; the ratio of women to men in state correctional facilities was 1 to 30 in 1973 (Nagel 1973:52). Also at that time, a total of about eight hundred women were held in the two extant Federal prisons for women at Terminal Island, California, and Alderson, West Virginia. Since then, women's divisions have been established at Federal prisons in Fort Worth, Texas; Lexington, Kentucky; and Morgantown, West Virginia. Roughly six thousand women resided in state institutions in 1973 (Gibson 1973:211). Since there are so few female prisoners, twenty states have no separate state facilities for them. Fifteen of these put women in a section of the state prison for men, where they scrub floors or perform domestic chores while not having equal access to educational or recreational programs; and the other five states keep female inmates either in municipal jails or in prisons in nearby states (Gibson 1973:220). The problems of incarcerated women, therefore, constitute a thesis in themselves.

As for the advantages of campus-plan prisons, there are quite a few. They are impressive because they are often physically attractive, more so than other styles; they are rarely congested; the constant outdoor movement requires a certain degree of decision-making on the part of the inmates, which is rare in prisons; and, as Nagel puts it, "one does
not become hypnotized by the effects of the endless corridors, the clanging locks" (1973:46). Also, they simply seem more like a normal environment than do other prison designs. The campus-plan prisons I visited were significantly less oppressive than the cell blocks, high-rises, or dormitories.

The two fundamental objections to campus-plan institutions are: the problem of control of substantial numbers of prisoners under such a plan; and, the cost per inmate for operation and construction (Carter, McGee, and Nelson 1975:156). Campus-plan prisons are definitely more costly to construct than many other types, in terms of required land space as well as individual buildings. For example, in 1965 it was estimated that a campus facility would cost approximately $20,000 per inmate to construct, whereas a dormitory-style facility would carry a per-inmate cost of $13,000 (McQuade 1965:185). The tax-paying public tends to prefer an economical plan for corrections, and generally seems unlikely to allocate funds for new construction when old, albeit architecturally outmoded institutions exist for purposes of incarceration.

A distinct type of prison visited by William Nagel's team is one I have not seen; he designates it "modern collegiate." Found only in minimum security institutions, its units are designed basically to be lived in and are not at all prisonlike. They are usually quite attractive, though not constructed to prevent escape or destructiveness or control movement. Most importantly, they are very much
like ordinary homes, with kitchens, living rooms, bathrooms, and bedrooms. The setting is certainly conducive to resocialization, says Nagel, but obviously inappropriate to all but the lowest security-rated prisoners (1973:76). I should imagine that this type of institution is extremely expensive, as well.

Thus, we have examined the representative styles of prison construction for the major part of this century: dormitories, the Panopticon, the self-enclosing and multiple quadrangle plans, the telephone-pole plan, the high-rise, and the open campus plan. Not all institutions conform to any one of these designs, but most do. At present, the three most widely favored plans for American prison design are the campus plan for minimum-security prisoners; the telephone-pole plan for large high- and medium-security institutions; and the self-enclosing or multiple quadrangle plan for small minimum- and medium-security facilities. The high-rise plan will most likely be limited to urban areas, though not necessarily---sky-scraper prisons do exist in the midst of rolling hills and farmers' fields---and, with luck, there will be few if any more dormitory-style prisons constructed. This shall be discussed in a later section.

Now, let us turn to typical as well as unusual features of contemporary prison designs.
Section II

Part 2

CONTEMPORARY ARCHITECTURAL

EXAMPLES, FEATURES, AND CONDITIONS
Frank Lloyd Wright once stated that form should follow function. Interestingly, form has (more often than not) been the focus of design, with function ensuing almost as an afterthought. At times it seems that the structure itself becomes the function; its integration with the site, inclusion of harmonious building materials, and so forth (Sommer 1969:3). These remarks refer to architecture in general, it is true; and yet, with the abandonment of specialized systems of corrections, this has frequently been the case in prison construction. Few John Havilands or Jeremy Benthams have appeared on the penological scene to create the "ideal" prison, so the job is left to prison administrators, contractors, and architects who are not specialists in correctional design. Indeed, in the entire country there are perhaps a handful of architects considered prison specialists, and even some of these do not produce much more than an interesting geometric facade. There is a strong need for change in this area, which shall be discussed in the final section. For now, we shall examine several basic aspects of present-day prisons.

There are many perspectives and considerations involved in the concept of correctional institutions as physical entities. A prison's location, age, general layout, and security provisions are of importance at the micro-level; the type of housing, dining areas, dayrooms, and specialized structures are significant at the relative microlevel. These shall be examined.
In 1976, there were 633 prisons in the United States, including forty-seven Federal facilities. The great majority of these were located in small rural towns. During the previous year, space for 36,000 inmates had been proposed or was under construction at an aggregate cost of $720 million. The purpose of this construction was to remedy overcrowding in extant institutions, few of which were not over capacity (Axilbund 1976:266). This wave of correctional facility construction was also going on in small rural towns.

There are several reasons why new institutions are most frequently erected in rural areas. A few are as follows:

A. Many states own land in the country, or real estate is cheaper there.

B. Legislators with power arrange for institutions to be built in their rural districts to combat unemployment there.

C. Urban citizens lobby against the construction of penitentiaries in their neighborhoods.

D. Some officials honestly believe that a rural setting promotes rehabilitation better than an urban one (Nagel 1973:49).

Unfortunately, rural prisons are almost inevitably inaccessible by way of major thoroughfares and are situated at great distances from major cities, making visits from friends and relatives a real problem. In Ohio, for example, all felons from Cleveland are sent to prisons in the southern part of the state. No state prisons exist in northern Ohio at this time.

A newsworthy item of the past year concerned the fact that the newly constructed housing facilities for the 1980
Winter Olympics near Lake Placid, New York, would, after serving the purpose of dormitories for the athletes, be converted to a 500-inmate, medium-security Federal prison. One of the main reasons behind selecting this particular continuing use for the housing structures was the strong similarity of security requirements for the Olympic athletes to those for prison inmates (Potter 1978:2). The prison will probably be less aesthetically oppressive than the majority of medium-security prisons, simply because of its initial purpose. Security features incorporated into the original design include surrounding double chain-link fencing, a security perimeter road, closed-circuit television monitors, and complete area lighting. The prison would create jobs for 125 to 150 persons from the nearby village of Ray Brook, an economically depressed area; however, there are problems.

Some of the primary arguments against the "Olympic Prison" are projected difficulties in obtaining a racially appropriate staff, problems in designing a good inmate program, and most of all the rural location of the facility: it is quite remote from the home cities of many potential residents. Also, the facility will be located in a resort town, whose accommodations will probably be priced far out of the range the average inmate's family could comfortably afford (Committee on the Judiciary 1979:19). The vicinity of Lake Placid, then, is hardly the ideal location for the new prison, but even now it is being prepared to accept inmates. The government will save money by not having to construct an entire new institution elsewhere, and the future
inmates will suffer for it.

Preferably, a prison should be located near the centers of population, not only to facilitate visiting by the families but especially to enable the hiring of a racially balanced staff: racial tensions are the source of much prison violence, and it is only reasonable to attempt an approximation of equal percentages of blacks, whites, and Hispanics between the prisoners and the personnel (Nagel 1976:112). In addition to this, it is important that prisons be as close as possible to places of learning and employment; proximity facilitates the implementation of educational and, perhaps, work-release programs for the inmates. Correctional institutions far from these resources have difficulty keeping abreast of many penological advances in related areas.

Another major problem in instituting change in penal philosophy and practice stems from the fact that most states have architecturally outmoded prisons to contend with—cudodially-oriented penal institutions, built to conform to now-inappropriate standards of confinement, even isolation. Present-day penology requires a much wider variety of activities and increased movement within the prison, not provided for in the old cell block designs. Inside security is a basic problem; neither the guards nor the prisoners receive enough protection from each other, or, for the prisoners, from their fellows. As Nagel says, "in such prisons, violence is the way of life (1976:108).

Financial demands frequently preclude the abandonment of these older facilities in favor of constructing new ones.
Therefore, the matter of updating through remodelling comes to the fore as the most feasible solution to this all-too-common problem.

Gordon Hawkins gives evidence of the widespread nature of this problem: as recently as 1976, approximately one-half of the 100,000 prisoners housed in American maximum-security institutions were living in prisons constructed prior to 1900. There were twenty-six maximum-security prisons with populations of well over 1,000 inmates each; one-third of these were overcrowded. Of the latter, the Virginia Penitentiary is the oldest, built in 1797. Violence has been steadily increasing in its ancient cell blocks, but it continues to be kept in use (Hawkins 1976:42-43). Truly, the extent to which outdated prisons are kept in use is shocking. The original Eastern State Penitentiary, opened in 1829, was in operation up to 1966, at which point it was finally closed (Sommer 1974:10).

Further examples of ancient prisons functioning in the United States today are cited by Melvin T. Axilbund in his 1976 article. Until its closing in 1979, says Axilbund, the oldest Federal prison in operation in this country was the McNeil Island Penitentiary in Washington, opened in 1865 as a territorial jail. The Federal Penitentiary at Leavenworth, Kansas (opened in 1906), provides only 18 square feet of living space per prisoner, whereas three to four times that amount is required in modern prisons. Of the state facilities operating in 1976, twenty-four were at least one hundred years old and ten
more were built before 1898. One hundred sixteen state maximum-security facilities were in operation in 1971; nearly half of these were opened prior to 1900, and six had opened before 1830 (Axilbund 1976:267). In actuality, many prisons feature a few structures or portions of the physical plant which were built in the 1830's or earlier; but, as the greater part of the facility is of more recent construction, administrators cite only the later date when asked to state the age of the prison.

Security is a fundamental aspect of corrections today which is manifested in various ways. The custody level of a prison is perhaps the most basic indicator of its type of security and security features. Fortunately, since 1930 the number of minimum- and medium-security facilities has consistently risen. Few maximum-security institutions have been constructed in the United States during this time period as compared to the past: with better-qualified personnel and more efficient prisoner classification systems, says the American Correctional Association, lessened custody is possible (1972:33). This may be so, but inmates continue to inhabit the outdated, overly-secure maximum-security institutions. Whereas wardens estimate that only about fifteen per cent of all prisoners require maximum custody, 56% of all adult prisoners in this country were housed in maximum-security facilities in 1973 (Nagel 1973:57).

Overall, Nagel's prison-investigation team found vast inconsistencies between institutions in regard to the security requirements of inmates and the security provided by
the facility. More often than not, designers had "assumed the worst" and incorporated the highest possible security levels for all the residents, irrespective of the actual necessity for such extreme (and often wasteful) measures. This led the team to believe that few prison planners try to relate security accommodations to security needs while in the design stage, which may result in an inefficient correctional institution (Nagel 1973:80).

The ultimate test of prison security provisions is the efficacy with which they preclude escape. Nagel's team discerned five principal methods employed by correctional institutions to achieve this end. These are:

1. Use of guards (as distinguished from correctional officers).
2. Classification of prisoners and subsequent assignment to institutions of appropriate security levels.
3. Threat of severe sanctioning of escapees.
4. Construction of institutions with maximum internal supervision and control.
5. Provision of adequate perimeter security, as determined by the custody requirements of prisoners assigned there (Nagel 1973:57).

The first method refers to those individuals who typically man guard towers or patrol perimeter areas; the third is probably not particularly effective; and the fourth is a common technique in the field of corrections. Although it is true that the Panopticon prison design was never widely accepted or employed in the United States, its concept of complete and constant surveillance has carried through in the use of closed-circuit television cameras in correctional
facilities. All things considered, inside electronic guarding devices are not preferable to the personal interactions afforded by officers patrolling the institutions on foot. It is also rarely possible to effectively observe an entire range of cells by means of television cameras alone (Nagel 1973:37). However, since manpower is the greatest expense entailed in prison management, some institutions attempt to economize in this area. One Alabama prison features in each housing unit a bulletproof booth containing several television monitors for a single guard to watch; the institution is nearly devoid of all constructive activity. Still, discipline exists for lack of compliance with orders: there are thus three types of living conditions here. Well-behaved prisoners are given the privilege of sharing a tiny $5\frac{1}{2} \times 8$ foot cell with another man; uncooperative prisoners are thrust into large, overcrowded dormitories filled with bunkbeds and potential attackers; and disruptive prisoners are confined, naked, in groups of up to eight people in tiny, dark isolation rooms for as long as three weeks. In these isolation cells, autism, hallucinations, psychotic behavior, and other serious forms of pathology are frequent (Nagel 1976:108-109).

It is absolutely tragic that, in an effort to economize, prison administrators have forfeited the safety and control of the inmates. Large institutional areas housing as many prisoners as will fit are only safe and secure as long as the living units are single-occupancy cells; dormitories, as I was told by one prison administrator, are
"rotten—-a horrible idea." Massive facilities in general tend to be poor in terms of security, simply because of the potentially great physical distances between a correctional officer and a violent occurrence: the officer may not be able to reach the spot in time to prevent injuries, or he may not be able to see what is transpiring. Also, by the time a lone staff member can summon aid from another part of a large prison, it may be too late for help. The smaller the institution, the better; further, individual cells should be used wherever there is the slightest possibility of having them.

Perimeter security is usually the most noticeable characteristic of a correctional institution. Traditionally, high stone or concrete walls have enclosed prison grounds. Since the 1930's or so, however, rising labor costs have contributed to the substitution of chain-link fencing at newly-constructed facilities. Most high-security prisons with armed guard posts feature double fences and turret-like gun towers (Carter, McGee, and Nelson 1975:159). As Gill puts it, "security is the primary business of the prison, but not its ultimate goal" (1972:116). The three fundamental elements with which security contends are disorder, contraband, and escape. Gill states a preference for solid walls over wire mesh fences as perimeter security because, he says, the latter do not prevent the passage of contraband and can contribute to disorder (1972:116); probably what Gill refers to here is incitement through the visibility of ire-arousing incidents.
New maximum- and medium-security facilities are frequently found to include in their perimeter security a "buffer zone" of undeveloped land and double fencing with a space of about ten feet between them, designed to make escape more difficult. Nagel even notes facilities where patrol dogs roam this space. Some fences have electronic sensory devices which are activated when the fence is touched; others have outdoor television cameras for constant surveillance. Outdoor floodlights are, of course, indispensable—particularly along the perimeter and at gates (Nagel 1973:60).

Around 1912, temporary wooden barracks-like dormitories were constructed at Occoquan, Virginia, with only a surrounding barbed-wire fence for security. As it was not particularly sturdy, the fence was eventually removed, and the prison officials found that fewer men escaped from the institution without an enclosure than with one (Hopkins 1918:7). This seems to have been an exceptional case, for I was told at a fenceless prison that its plant design was the largest contributor to escape. Modern juvenile homes especially tend to be completely without fences, a configuration which frankly tempts inmates to walk away. When escapes do occur from these institutions, the administrators often retaliate with such supposedly preventative measures as transfer to more secure prisons, rigid discipline, or within-prison charges for this additional crime (Nagel 1973:60-62). It seems that providing fences would be a better procedure.

A permeating characteristic of institutional life is the involuntary participation of the inmates: they are re-
pressed, controlled, and virtually incapable of making any decisions for themselves. This fact must be fully recog-
nized in order to understand the problems of correctional housing, for, as Nagel says, housing probably has the greatest impact on the total incarceration experience (Nagel 1973: 63). Regardless of any activities a correctional institu-
tion provides, be they education, therapeutic, employ-
ment, or recreational, the inmate inevitably spends a signi-
ficant amount of time in his or her housing unit (Nagel 1973: 63). In many institutions—particularly jails—inmates stay in their rooms simply for lack of anything else to do. Whatever the reason, the room is the basic unit of physical structure for the incarcerated person, and must be thought of as much more than simply a place to sleep.

As stated previously, Auburn and its tiny, inside cells dominated the penal scene well into the twentieth century. Even though more modern designs are implemented, they are unmistakeably related to their outmoded predecessor. Cells remain undersized and overcrowded with frequent doubling of originally single occupancies. Sad to say, two inmates assigned to a 5 1/2 x 8 foot cell is not uncommon (Nagel 1973: 64).

In 1974, cell provisions varied among state correctional institutions. Eighty-six per cent of 205 prisons with single-occupancy cells had in-cell toilets, but only thirty-eight per cent of these also provided in-cell drinking fountains. Eighty-three per cent of them did, however, have sinks. Windows existed in only fifty per cent of such cells, and
fifty-one per cent provided a desk and chair. Three- and four-person cells were more likely to have toilets and sinks (eighty-nine per cent for each) and drinking fountains (fifty per cent), but not a desk and chair (thirty-two per cent). Ninety-nine per cent of all state institutions included a general-purpose room, eighty-three per cent a library, thirty-four per cent a gymnasium, and twenty-eight per cent a prison industries facility or program (Axilbund 1976:268). Thus, it is apparent that all correctional institutions are not created equal, especially in terms of the amenities—and necessities.

During their fieldwork, Nagel's team observed six basic types of living quarters. These were single-occupancy inside cells; single-occupancy outside cells, or rooms; squad rooms; open dormitories; cubicles; and segregation cells (Nagel 1973:70). These shall be briefly described.

In general, cells have either grille fronts (for maximum observation) or a door with a vision panel. Inside cells, without access to any outside wall or window, are quite expensive to build. They are usually quite popular with correctional officers because of their greater security. On the average, inside cells are smaller than outside cells or rooms, and feature grille fronts.

Outside cells have an outside wall with a window, and usually contain toilet facilities—depending, of course, on the security of the institution. The higher the level of custody, the more likely the inclusion of a toilet and sink in the cell.
Rooms are generally the same as outside cells, but they often have wooden doors in lieu of grille fronts. Inmates frequently possess keys to their rooms, which tend to be dry (without toilet or sink). I visited a prison in which the inmates held keys to their rooms; the arrangement seemed quite successful.

"Squad rooms," as Nagel calls them, are large cells or small wards containing from four to eight beds. While many detention facilities have squad rooms, few prisons of recent construction do. At present, few multiple-occupancy cells accommodate fewer than four prisoners; according to correctional officers, two-man cells facilitate homosexual activity, and three-man cells promote factionalism—two of the occupants "ganging up" on the third.

Though cell conditions may be almost unbearably cramped, inmates greatly prefer them to the congested dormitories which are noisy, devoid of any privacy, and often the settings for violence (Nagel 1973:66). Neither staff nor inmates like dormitory living in prison; jailers, however, swear by them because of their lower suicide rates. Since they are the least expensive housing to maintain, dormitories continue to exist in spite of the inherent problems. A similar situation exists in the case of multi-tiered cell blocks, which are still being built in medium- and maximum-security facilities. Although they simplify supervision, they are not especially desirable: a preferable configuration of the "stacking" concept would entail completely separate floors for the tiers. This would enable better classifi-
cation and treatment in quieter, more discrete units (Nagel 1973:74).

Cubicles are comprised of partial walls erected around the individual resident's living space. They provide privacy at a low cost in comparison to individual cells, and might be regarded as structural compromises. Still, they are used quite effectively in several girls' and women's correctional institutions.

Many correctional institutions, particularly those with maximum security divisions, contain some sort of segregation housing. It is used to punish prison rule-breakers or to remove troublesome inmates from the prison population "at large." Segregation units are often referred to by residents as "the Hole" or "the Box"; they are not the same as special custody units, which are intended more for the protection of the individual held there than for those left in the general prison population. Rather, segregation units are used to mete out discipline largely because we supposedly know of no other solutions to the problem of needing to modify prisoner behavior (Nagel 1973:80-82). (This point shall be addressed in a later section.) The types of individuals who are assigned to special custody or "administrative quarantine" are informers, escape artists, flamboyant homosexuals who incite disturbances among their sexually deprived peers, prison activists, and chronically assaultive individuals. Some of these types need constant protection from other inmates; the last type mentioned needs to be kept apart from potential victims; and some just need
to be watched more closely than other inmates (Nagel 1973:84). Some segregation units are of the basest ilk: these are the strip cells. Here, the prisoner is confined, naked, in a steel cage coated with reinforced concrete and containing nothing but the unfortunate individual. The strip cell is costly, dehumanizing, and, says Sommer, generally ineffective in improving behavior (1974:11).

Many wardens are of the opinion that all segregation units should be located within immediate proximity of the institution's hospital facilities, in order to make observation, examinations, and emergency treatment easier (Nagel 1973:85). An arrangement of this type would indeed seem desirable, but none of the detention or correctional facilities I visited was set up in this fashion.

Actually, two problems experienced at the maximum-security prison in Marion, Illinois, are related to the location and design of the segregation unit. The segregation cell blocks abut upon the recreational yards for the rest of the prison, which makes unauthorized communication between the segregated persons and the general population very difficult to prevent. Worse, segregated men occasionally scream as though they are being tortured or brutally beaten; their screams are audible to the prisoners exercising in the yard, and general unrest ensues throughout the prison. For these reasons, a new, windowless segregation unit is planned (Nagel 1973:83-84). Actually, a better solution would be to separate that particular unit as much as possible from the rest of the prison buildings and recreational areas. If
the grounds are sufficiently large, those in segregation would not have to be deprived of windows and natural light but would still remain segregated.

An indispensable aspect of prison housing is, in this day, plumbing. Prison toilets and showers are designed and located to serve three purposes aside from the obvious. These supplementary purposes are to ease surveillance, to prevent excessive inmate mobility, and to withstand abuse. Therefore, sanitary facilities in prisons are usually very much exposed to passersby or other residents, especially in dormitories. Here, toilets are frequently located right in the sleeping area (Nagel 1973:76).

Cell toilets are favored by most staff because they eliminate the need for letting prisoners out of their cells all the time, particularly at night when fewer personnel are on duty. Women's and girls' institutions, however, almost never have cell toilets except in disciplinary or reception areas; elsewhere they provide toilet and shower stalls. This might be interpreted as a function of women's perceived need for greater privacy than men. Whatever the reason, the differential provisions are obvious (Nagel 1973:76).

Dining is another salient feature of prison life. Most large or non-campus prisons have central dining, which consists of one large dining room in which all the inmates take their meals. Cafeteria-style is the rule. Generally, central dining halls are designed to accommodate only part of the prison population at a time, thus reducing the crowd size for any one serving. The significance of this will be
depicted in the section on violence. Newer institutions often have four-man tables fastened to the floor; backless stools are typically welded to crossarms connected to the central table leg. Otherwise, long slab-like tables stretch from one side of the room to the other. Whatever the table design, central dining halls are often extremely noisy, and not necessarily pleasant (Nagel 1973:91). In prison, where the apparent "details" of life become so magnified, enjoyable meals can make a sharp difference in inmate attitudes. Thus, careful attention should be paid this matter.

Another type of institutional eating arrangement is scattered dining: food is prepared in a central kitchen and subsequently carted to small dining rooms located about the usually campus-style or high-rise institution. This system is common in juvenile institutions. Meals are often served in dayrooms or multi-purpose rooms on each floor, eliminating the need for excessive mealtime elevator traffic in the high-rise design (Nagel 1973:91). One of the jails I visited employs this method: an inmate "trusty" delivers the hot cart to the housing area and the correctional officer hands out the meals.

Dayrooms play an important part in most facilities of recent construction. They are usually found in the housing units, and may vary greatly between prisons. Some consist merely of wide-open areas between cell blocks and outer walls, with or without furnishings (though a television is usually mounted on the wall). Others are large rooms with rows of folding chairs or benches facing the omni-
present television set. Still others reflect some consideration for the inmate in the provision of alternatives to "televiewing," such as ping-pong or pool, and more comfortable furnishings (Nagel 1973:77). Some of the facilities I visited had virtually nothing but a few broken chairs: the residents had pulled the television set off its wall mounts and stripped it of all its controls. Perhaps this was a reaction to the dayroom's lack of choice, for there were no other recreational possibilities in that big, dismal room but horseplay and destructiveness.

Whereas television and ping-pong rooms are common in correctional and detention facilities, there are usually no quiet rooms or corners for checkers or chess, or private conversations, for that matter. This aspect stems largely from the prohibitions concerning two people being alone together in prison: homosexuality looms as a constant threat in the eyes of some staff. Therefore, many of the leisure activities are necessarily of an athletic nature (Nagel 1973:101). For the inmate who is not athletically inclined, this may pose something of a problem; the role of spectator must be assumed.

Interestingly enough, it has been discerned that recreational facilities in penal institutions are essential rather than extraneous. Prisoners need an opportunity for physical workouts: it is valuable for mental as well as physical health. Nagel's team found that suicide attempts were particularly high (three per week) at a reception center which offered virtually no recreation and whose inmates
spent most of the day sitting in their living quarters. At an otherwise very similar reception center in a nearby state, a multitude of indoor and outdoor recreational activities were available to the inmates, who tended to have high morale and positive attitudes toward the institution. These two examples do not constitute conclusive evidence supporting the need for recreational facilities in prisons, of course; however, parallel findings were made at a number of institutions (Nagel 1973:97-98).

An important design consideration is the location of treatment facilities. Many correctional administrators feel that space should be provided in the housing units for group and individual counseling: the emphasis is on the living quarters for the locale of "problem-solving." Few older institutions made provisions for such facilities within the cell or dormitory areas, so improvisation is necessary but often unsatisfactory. For example, dayrooms are sometimes converted to treatment space, eliminating their intended use at the expense of the residents (Nagel 1973:79).

Women's prisons, because of their typically small populations, tend to lack work, recreational, and treatment programs. However, women's crime rates have increased by 227% between 1960 and 1971, so perhaps these populations will expand. For whatever reasons, women's commitment rates to prison have not increased significantly; perhaps alternative programs such as half-way houses or community group homes could be utilised to a greater extent, and more services might be provided there (Nagel 1973:179-180).
While virtually all U.S. prisons contain a chapel, it tends to be the most underused building of the institution. Many designers suggest that multiple activities be carried out in prison chapels so their space is not wasted (Nagel 1973:92-96). The chapel at one of the prisons I visited served an interesting secondary purpose: it provided a sanctuary for illicit conjugal visitation between inmates and their wives or girlfriends. It seems to me that it would be more sensible to institute officially condoned conjugal visitation at this and other prisons than to continue the farce of regulation: the correctional officers are well aware of the situation, and sometimes aid couples in finding an empty room for privacy. On the whole, this "permissiveness" keeps inmate tensions low, so the officers are generally in favor of it.

Then again, architectural design is a major problem confronting prison administrators who would like to institute conjugal visitation. Where shall the visitation take place? As Nagel so intelligently points out, for a prison staff member to escort a couple to a "specially designed room" for a brief interlude would dehumanize the entire relationship. Still, some facilities, particularly those with medium- or minimum-security levels, have locations which might be utilized for conjugal visits. It is up to the administrators to take the steps necessary to legitimize fulfillment of a very normal human need (Nagel 1973:107).

Nagel's 1970-1972 study of American correctional archi-
tecture took him and his team to over one hundred new facilities throughout the country. While some of the institutions exhibited innovative designs and attractive landscaping, the preoccupation with control remained the same. As Nagel expressed it:

"The institutions were new and shiny, yet in all their new finery they still seemed to harden everyone in them. Warm people entered the system wanting desperately to change it, but the problems they found were so enormous and the tasks so insurmountable that these warm people turned cold...to survive, they became callous" (Nagel 1973:154-155).

It is clear from this statement that it is not only design which shapes the success of a prison, as I have indicated before, but the attitudes and philosophies of the people involved---both staff and inmates.

This section has been an attempt to briefly describe many of the design characteristics found in American prisons today. In the following three sections, the manner in which these characteristics may affect the inmate is discussed, to be followed by a section in which possible reforms---ideological and physical---are considered.

Now we turn to the psychological implications of imprisonment.
Section III

Part 1

PSYCHOLOGICAL IMPLICATIONS OF IMPRISONMENT
The question of how the immediate environment affects individual behavior has attracted considerable attention in recent years. In studying this phenomenon, it is necessary to separate out extraneous factors as much as possible to determine what behavioral aspects are contingent mainly on the environment. For the most part, it is a hazy area in which much of the work is theoretical. Researchers employ various means in trying to understand the influence of design on, for example, violence.

The Bureau of the Census is involved in research of this type, though somewhat indirectly. In 1979 the Bureau distributed questionnaires to state facilities, both regular and community-based. Among the questions asked were several concerning the number, capacity, and square footage of the institution's confinement units (cells, rooms, dormitories, and so on). Estimates were requested of the average number of hours per day that the inmates were not permitted to leave the confinement units. The final item on the questionnaire regarded the number of inmate deaths during calendar year 1978, and the nature of those deaths: natural causes, suicide, accidental injury to self, injury by another person, or other causes. When the data from these questionnaires are compiled and interpreted, it may be possible to draw some connections between the amount of living space allotted to inmates in a facility and the number of violent deaths there.

Another factor possibly related to living space is
mental or emotional stress; the questionnaires inquire as to the number of inmates receiving prescription medication for the treatment of these ailments. It will be very interesting to read the findings of these questionnaires.

Prisons are indeed an extreme social and, therefore, psychological configuration. The Society of Captives, by Gresham Sykes, is a well-known analysis of the quality of life in prison. Above all, Sykes emphasizes the psychological pains of imprisonment: the loss of liberty, of autonomy, social identity, material possessions to a large extent, heterosexual relationships, and even the loss of security—it is clear that prison is not a safe environment for the inmates (Sykes 1958:65). (More on this in an upcoming section.) The basic role of the self as perceived by the individual is forfeited upon admission to the prison, and this loss is reinforced by the all-controlling nature of the institution. Choice is extremely limited; dehumanization characterizes prison life. It is not surprising to find pathological and aggressive reactions to such an unnatural social environment.

The individual entering a correctional institution is entering a new existence: one apart from home, family, job, friends, and social life, for as long as several decades. Even if only for a term of a few years, incarceration for such a period of time is frequently devastating (Cohen and Taylor 1972:43). The prisoner does not wish to be where he or she is; residence in the new environment is quite against his or her will.
Upon entry to prison, the new inmate is interviewed; medically examined; given a shower; relieved of most personal clothing and belongings; allotted institutional apparel; photographed; fingerprinted; and given a file number which, for all administrative purposes, serves as the inmate's name. Much of the individual's former identity is eroded by this admissions process, though the procedure is brief (Thompson 1979:7-8). When compounded with this feeling of the loss of self, long-term confinement in usually ugly, uncomfortable, and threatening surroundings is quite likely to produce even more adverse psychological reactions.

Prison inmates are necessarily exposed to radical sensory and perceptual changes—or, more accurately, deprivation. As John Lilly states:

"If one is alone long enough and at levels of physical and human stimulation low enough, the mind turns inward and projects outward its own contents and processes; the brain not only stays active despite the lowered energy levels of input and output, but accumulates surplus energy to extreme degrees" (Cohen and Taylor 1972:44).

The above is a clear description of the conditions endured, more or less, by the prisoners of the Pennsylvania system and those in experimental solitary confinement at Auburn. It is no wonder that so many mental breakdowns occurred; the frightening fact is that the solitary system continued to be employed at Eastern State for nearly forty years.

The prison inmate's environment is an unusually intense, monotonous one. He or she must learn to cope with this situation, for there is often little hope of release for at least a few years (Cohen and Taylor 1972:45). As
Hans Mattick so perceptively states, "in the prison community, life is driven in upon itself; there are fewer alternatives and choices, and people are more directly and intensely related, whether they wish it or not" (1975:185). As shall be seen, this is highly relevant to the matter of crowding and density in correctional institutions. Although the general claustrophobia experienced by inhabitants of maximum-security institutions is not as severe for inmates of prisons with less strict security measures, it is a pervading aspect of prison life (Cohen and Taylor 1972:86).

Some elaboration on this point is appropriate here. As stated previously, the amount of time an inmate spends in his or her cell or dormitory depends on the institution's security and custody level as well as the physical construction of the facility. Therefore, cells, dayrooms, and dining halls may have varying impact on the resident according to the extent of their use. Briefly, I shall describe what appeared to be the basic aspects of daily existence in three representative prisons which I was fortunate enough to visit.

At the minimum-security level, I visited a campus-style institution housing approximately 250 inmates. All the housing units had single-occupancy rooms to which the occupants held keys; whereas presence in the housing unit was required several times a day for the "count" (at which point the correctional officers ascertained whether any inmates were missing), the rest of the day was spent in educational classes, vocational training, or job assignments. These activities took place in separate buildings around the cam-
pus, and meals were served in a dining hall building rather than in the housing units. Each housing unit except for the segregation building contained a dayroom with a television, and I observed some residents playing basketball with equipment they had "checked out" from one of the housing units. This facility, obviously, involved substantial inmate mobility and something of a choice of activities.

A medium-security prison I saw was made up of dormitory buildings arranged around a central green, which was flanked at either end by parallel buildings thus creating an enclosed quadrangle. The dormitories were overfull, barracks-like structures containing a dayroom at one end furnished simply with rows of metal folding chairs set up before a television. Fenced-off exercise yards lay between the dormitories. There were educational classes and job assignments to attend during the day, and a central dining hall provided the meals for the 1200-odd inmates. There were quite a few men sitting idly on their bunks when I visited the dormitories; the buildings were rather gloomy and dark at all times because the front windows had been painted over and some of the lights were not working. The atmosphere here was not nearly as relaxed as at the former facility, and the correctional officers seemed more attuned to the behavior of the inmates. (Of course, this may have had to do with the individual personalities involved as well as the fact that I was a female in an all-male institution.) Both this and the minimum-security prison were surrounded by chain-link fences and guard towers.
The prototypical maximum-security prison I visited was completely enclosed by a high stone wall with castle-like observation turrets at the corners. Inmate movement at this prison was relatively limited—whereas at other institutions I had seen inmates going places singly or in groups, here no resident seemed to be without the company of a correctional officer. The housing units consisted of tiers of inside cell blocks, very much like Auburn, featuring only single-occupancy cells behind heavy bars and wire screens. The 400 inmates participated in extensive religious activities and a few classes, but there were no vocational programs. Most of the time the inmates appeared to stay in their housing units, either in their individual cells or out in the space between the cells and the outer wall: this served as their dayroom, and offered but a few chairs and a television. At this prison the residents were much more densely housed, it seemed, than at any other I had seen; since they were generally confined to the housing unit except at meal times (when they went to the central dining facility) or during exercise periods (when they would go out into the enclosed yard), they gave the impression of living in a cramped fashion, one on top of the other. I should imagine that, merely from what I could observe, tensions were generally higher at the last two prisons than at the first.

Another interesting aspect of these prisons had to do with windows. At the minimum-security facility, each inmate’s room had a good-sized window. The medium-security facility had painted-over windows in the front, as I men-
tioned, and high-up windows along the sides of the dormitories, which were all long buildings. The windows at the maximum-security prison were very heavily barred and screened, though of good enough size to admit quite a bit of sunlight, and were very high up on the wall---just below the ceiling. In a study done by Belinda Collins, it was found that the presence of windows, especially in a "restricted and essentially static environment," is very important. The presence of a window in a room favorably affects an individual's perception of him or herself: it makes the individual "feel better" (Collins 1975:72). Windows, therefore, seem highly desirable for all living areas of prisons. If securely and intelligently constructed, they will pose no threat of escape; and, in light of the many negative effects of prisons, they can only constitute an improvement, if slight. Collins found that the presence of a window in a room makes it appear more spacious, which has a positive effect on the room's inhabitants (Collins 1975:73). Thus, it may be construed that windows---and an outside cell design---would have made a great difference in the tiny cells at Auburn.

Although this is not a paper on jail architecture, some jail design features tend to apply with equal strength to maximum-security prisons, for most jails consist of little other than maximum-security housing. The architectural firm of Martha L. Rothman and Elliot Paul Rothman has recently been involved in a court case concerning the physical structure of the Manhattan House of Detention for Men. Among the pertinent problematic design aspects cited were overly-
stringent cell custody ratings, sub-standard square footages of inmate living space, inadequate recreational facilities, and particularly the lack of windows in cells. The Rothmans' contention is that detainees have the right to "have visual contact with people, places, and things" during their period of incarceration, and assert that such a lack of contact with the outside world can result in psychological disorientation. They propose extending the jail's inside cells across the guard's catwalk to the outside wall, and the installation of transparent blocks of security glass in the existing window frames. These modifications would increase the size of the cells to a minimum of seventy square feet, and would not seriously endanger the security of the institution (personal communication with the Rothmans, 1980).

The general layout of a prison can affect the psychological well-being of the inmates as well as smaller-scale features such as windows. Some social scientists feel that the architectural design of men's prisons through history has been based on the belief that male criminals are dangerous and aggressive; therefore, no weaknesses may be apparent in the construction of the institution, and the whole must represent enduring strength. Women criminals, on the other hand, have been generally regarded as requiring protection from the rest of society, rather than the reverse; their "misguided actions," it has been thought, could best be corrected in a homelike environment (Giallombardo 1966: 6-7). For these reasons, women's prisons have developed as more attractive, less visibly oppressive than men's.
This has actually led to women's prisons being more psychologically harmful than men's, although the women's institutions are more aesthetically pleasing. The smaller female felon population in this country leads to the existence of fewer women's prisons. Thus, as a full range of offenders must be sent to each of the few women's prisons without selective distribution, all women in a single institution must follow very stringent rules designed to control the handful of potentially dangerous females imprisoned there. The conflict, therefore, between the charming surroundings and the highly oppressive atmosphere, combined with the strict regulations, serve to make the female inmate weak and dependent. Ironically, prison is just the place where a woman must learn to be independent and survive while incarcerated as well as upon release (Gibson 1973:221-222). The same is true of male offenders, of course, but usually not to as great an extent.

Not only can prison create conflicting psychological clues for the inmate; it can also function as an environmental vacuum of sorts, draining the inmate of interest and activity. Some researchers feel that prison lethargy or inertia is due primarily to the drab institutional surroundings, which fail to provide stimulation for the mind. (It is also related to the eradication of productive prison labor, as described earlier.) One prisoner contended that he could not do much reading in prison because the environment was not conducive to concentration; other reasons include insufficiently lit cells, lights-out regulations in some institu-
tions, and distracting noise (Sommer 1974:34). Nagel reports that high noise levels, inadequate lighting, and lack of privacy were the three problems most frequently cited by inmates of the correctional institutions he visited (1973: 25).

In many prison cells there is a blatant lack of furniture: often there is only a bunk and a toilet. This frequently stems from a belief that whatever the prisoners are provided with, they will destroy. When furnishings are provided, they are often made of indestructable materials and affixed to the floor or walls. This may satisfy the administrative officials who fear weapons made from chair legs, but for the inmate it produces an atmosphere of psychological oppression. As Sommer puts it: "the harder the environment, the more the behavior of the occupants will be distorted from its natural state" (1974:68). Sommer goes on to suggest the provision of furnishings made of soft, non-weapon materials such as foam to help in humanizing the inmate's living environment, physically and psychologically (1974:70). This would be especially beneficial in isolation cells where, as was mentioned previously, the harsh barrenness of the physical environment frequently produces autism, hallucinations, and psychoses in occupants (Nagel 1973:82).

As long ago as 1918, Alfred Hopkins was trying to draw attention to the aesthetic aspects of prison architecture and their effects on the prisoner. He relates the story of a warden who had great difficulty in getting the inmates to work in the prison's vegetable garden; when he decided to
plant flowers there as well as vegetables, however, there was actual competition among the men to see who should be detailed to work there (Hopkins 1918:22). The anecdote is indirect and saccharine, to be sure, but the sentiment is clear: the prison's design and appearance have the capability to influence staff as well as inmates. It cannot be forgotten that the staff members are exposed to various aspects of the prison environment on as regular a basis as the inmates themselves. To handle the oppression of the correctional environment, it seems, their behavior---when not in the presence of the inmates---ranges from jocular to hazardous. Therefore, the staff and their response to the prison environment is an important consideration, one not frequently cited.

In a great many ways, Hopkins was ahead of his time with his proposals for prison design. Even so, he failed to go far enough in some of his plans. A very basic example may be found in the execution of his 1915 plan for the Westchester County Penitentiary and Workhouse in White Plains, New York. Hopkins proudly cites his use of bright red tile for the dining hall, purposely avoiding "the dull monotony of color usual in the prison building," but also reveals that he had the cells painted "a soft gray" (1918:12). In my opinion, the appearance and tone of the individual cell is one of the most important aspects of prison design. In light of the considerable amount of time today's prison inmate spends in his cell, cheerful colors can make a distinct difference in his mental well-being. Also,
Hopkins's book includes a photograph showing what he calls a "recreation corridor" in the Westchester Penitentiary; it consists solely of a long, wide hallway with chairs arranged in militarily straight rows along each side, and is more reminiscent of a mental institution than anything else. As the prison descriptions in this paper suggest, configurations of this type are not particularly uncommon even today. Even in the dayroom, the least expensive alternative is what most often appears; it truly makes one wonder what was done before the advent of television.

Different theorists see the environment as affecting the individual in various ways. Sykes and Goffman, for example, concentrate on the environment's dehumanizing effects and the psychologically painful deprivations it causes. Interestingly, gerontological theorists have a certain relevance to the field of corrections; they, too, deal with people who are often prisoners of their environment—people who rarely have the opportunity to escape. Residents of nursing homes experience the impact of the "total institution" just as much as prison inmates in many ways. Therefore, I was interested to see what some of the well-known theorists in gerontology thought about the effect of the environment on the individual.

Robert Newcomer (1973) sees serving the psychosocial needs as the most important function of the immediate environment. The four basic psychosocial need are, briefly:

1. A need for order—recognition of an environmental context in which the individual may act.

2. Social connectedness—a need for control over
social contact with others.

3. Identity—a need for understanding one's individuality and the way in which one fits into a situation.

4. Effectance—a person's need to affect, manipulate, and perhaps control his or her environment (Newcomer 1973:80-82).

Obviously, only the first—a need for order—is truly provided by the prison environment; indeed, the order here is overly structured. The inmate's life is entirely managed by the institution and its monotonous procedures. Only inmates living in single-occupancy cells or rooms with personal keys can attain the second need, and even then there is not complete privacy. The prison inmate has little if any actual individuality: he or she has been stripped of it upon entry. Finally, the inmate has no control over the environment; it frequently controls the inmate. It is apparent that the prison environment works very hard against the fulfillment of these needs as set forth by Newcomer.

It would seem that the majority of prison designers and administrators had intended that the prison environment be psychologically detrimental.

M. Powell Lawton, a much-admired gerontologist, suggests that an individual's physical environment is most likely to affect his or her well-being as a result of two factors. The first is the strength of the physical stress the environment places on the person. This includes sensory deprivation, extreme heat or cold, and lack of privacy. The second is a low level of personal resources: in other words, if a person has little competence in one area, it is
likely that the environment will have a greater effect on his or her behavior (Lawton 1975:55-56). If such is the case, inmates of correctional institutions are perhaps the most likely group in society to be negatively affected by the environment—they have not a single advantage.

Lawton goes on to state most perceptively that "people tend to judge their environment in terms of how competent it makes them feel" (Lawton 1975:83). The fewer physical and psychological barriers imposed by the immediate environment, the more competent the individual will feel. It is no wonder that maximum-security custody can have such a devastating effect on the inmate: he or she is made to feel completely helpless and inadequate. Violence might almost be considered a normal reaction to such severe environmental constraints.

The psychological implications of imprisonment are often difficult to relate directly to the environment; the social configurations present in correctional institutions are not to be overlooked when considering this matter. Further research will be of great importance to this area of concern—perhaps some of the haziness can be cleared away.

A very current and, if you will, pressing aspect of prison life today and in the past is crowding. It is significant for a number of reasons: it can be the source of both pathological manifestations and extreme violence; it is a characteristic of the majority of prisons in this country; and many of its effects on humans are not well understood. Therefore, we shall examine institutional crowding.
Section III

Part 2

CROWDING IN PRISON
Studies of crowding and behavior require a recognition, at the most fundamental level of consideration, of the difference between density and crowding. Density is a physical condition involving spatial limitation. Crowding is an experiential state in which, according to Daniel Stokols, "the restrictive aspects of limited space are perceived by the individuals exposed to them." In other words, crowding is associated with social and personal dimensions as well as spatial ones. Density may be seen as a prerequisite to the experience of crowding, and both lead to certain inconveniences such as a loss of privacy or inhibited movement. Of course, this depends on the perceptions of the persons involved, as stated above (Stokols 1972:275). Crowding may be perceived positively by some persons in particular situations; for example, a crowded but enjoyable party is usually enhanced by the densely peopled room. This, however, is a situation from which the participants are able to depart when they so choose. Such is not the case in prison.

Crowding directly reflects a concept of imprisonment as punishment. Deprivation of personal freedom is a severe sanction in a country which places such emphasis on liberty; to carry out the prison sentence in an overpopulated environment can become unbearable. Prisons have been overcrowded almost since the formal prison system began; nevertheless, these conditions should not be allowed to continue. It is to be hoped that the near future will see improvement along these lines.
In March of 1976, Corrections Magazine reported the highest U. S. prison population in history. To handle the overflow, some states began to utilize trailers, tents, airplane hangars, and even old warships as correctional housing. Ohio prepared to reopen the huge, outdated prison at Columbus (built in 1830 and featuring cells measuring 7\(\frac{1}{2}\) x 5 x 8 feet high), which had been previously closed upon the opening of the Lucasville Prison in 1972. A nation-wide survey of adult incarceration in state institutions for 1977 revealed the states with the highest incarceration rates as being mostly in the South or "Near South" (Nagel 1977:156-158). At this time, William Nagel decided to re-evaluate his stance against prison construction, which he had taken up after his 1970-1972 team study revealed the state of the prisons in this country. Among other methods, Nagel employed the examination of crime and incarceration rates, population ethnicities and change, per capita income levels, and the relative liberalism or conservatism of the fifty states in order to discern any improvement or decline in prisons. His findings included the following:

A. There is no distinct relationship between a state's rated conservatism or liberalism and its reported crime rate; however, there is a relationship with incarceration rates---conservative states imprison more people, liberal states fewer.

B. States with high poverty levels often have lower crime rates but higher incarceration rates---this supports the idea that it is the poor who populate the nation's prisons (Nagel 1977:161).

The investigation revealed fifteen states as having increased the capacity of their adult prison systems by fifty-
six per cent between 1955 and 1976. In addition, the prison populations in these same states increased by fifty-seven per cent and the crime rate went up 167 per cent during the given time period. In 1976, this group of states faced the most serious prison overpopulation problems in the country (Nagel 1977:162-163). Needless to say, Nagel maintained his position supporting a moratorium on prison construction.

Nagel's was not the only study indicating problems of overcrowding. It was apparent from the South Carolina Corrections riot survey that overcrowding existed at several of the 204 institutions from which responses were received—questionnaires were sent to prisons in all parts of the United States. Some of the figures which suggested overpopulation included the total of two percent of the "non-riot" facilities reporting their structure as having been designed to house more than two thousand residents, whereas four per cent of these same facilities indicated that their actual inmate populations fell within this range (South Carolina Department of Corrections 1973:92). The term "non-riot" referred here to those prisons which had not experienced any riots or disturbances within the previous four years; a riot was defined as an incident involving fifteen or more inmates and resulting in property damage and/or physical injury. The vast majority of the prisons participating in this study were designed for resident populations of 501 to 1,500 inmates: oversized, by present standards.

The Department of Justice also recognizes the wide-
spread problem of overcrowding in U. S. prisons and jails; it proposes employing pre-trial or post-conviction release programs, where feasible, to bring down inmate populations, and recommends the use of alternative housing facilities (1978: 9). Still, these are merely suggestions; as they are not enforced regulations, they are not necessarily followed. It is procedurally easier, it seems, to hand down a prison sentence than to go through the "complicated process" of arranging for a release program. In addition, society's members are inclined to feel indignant and disquieted about convicted felons going loose in the community. Thus, the "lock-em-up" ideology prevails even now.

A few prison architects have taken steps against the onset of overcrowding in the correctional institutions they have designed. For example, the Soledad Prison in California contains single cells which were deliberately designed to obstruct future multiple occupancies. The cells are of such dimensions that the inmate's cot fits only against the one wall with a window; the toilet and door occupy enough space to prevent the placement of another cot on the floor, and a double-deck cot would necessarily block the window (Glaser 1964: 155). Unfortunately, the description suggests that the cells are not very large for even a lone occupant, thus diminishing their positive function of precluding the possible doubling-up of residents. In one Ohio prison, a court recently ruled that to house two inmates in a cell designed to hold only one is in violation of the law. The case is now being appealed, but with
luck and good sense the ruling will stand. Cases of this sort are helpful in bringing prison conditions to the attention of the public; more of them can only increase the possibility of effective prison reform.

The six hundred and thirty-three state and Federal correctional institutions mentioned previously housed 250,000 prisoners at the beginning of 1976. Of these only 24,135 or ten per cent were Federal inmates (Axilbund 1976:265). The Federal prison system is at this time comprised of thirty-eight correctional institutions, nine community treatment centers, and four hundred contract community treatment centers throughout the country. In August, 1977, the total Federal institutional population was at an all-time high of 30,400; by March of 1979 the total was down to 26,000 people. Norman Carlson, director of the Federal Bureau of Prisons, cited two main reasons for the decrease in population: greater use of community treatment centers prior to release, and a decline in the number of offenders committed to Federal institutions by the courts. In spite of the reduction, however, the Federal system was fourteen per cent over intended capacity in its facilities as of March, 1979 (Committee on the Judiciary 1979:2-3). At the same point in time, the F. B. O. P. had eight new correctional institutions in the process of being designed or constructed and two minimum-security prison camps opening on deactivated military bases in Texas and California. These additional facilities were expected to alleviate the problem of overcrowding (Committee on the Judiciary 1979:4).
It is apparent that the situation in U. S. prisons is not good at this time. Even so, in light of the amount of prison construction under way, a pertinent issue is the determination of the optimal size for an individual-occupancy cell. This will naturally vary according to the number of hours per day the inmate is confined therein, and even in consideration of the cultures in question: some peoples psychologically require more physical space than others. At any rate, to allow for temporary overcrowding, a single cell (says Sommer) should be able to accommodate two inmates to be of sufficient size (1974:36). I agree that cells should be as large as Sommer suggests, but under no circumstances must occupancy in a single cell be doubled: this is of vital importance to the successful functioning of corrective treatment.

An enforced set of standards specifying minimum space requirements for prison inmates would prove highly useful for both the inmates and the prison officials. Such a set of standards would prevent the overcrowding which can lead to disturbances and assaults, and facilitates homosexual behavior. If spatial standards were enacted as a statute, prison administrators could more easily obtain funding for the renovation of existing facilities and, if unavoidable, the construction of new prisons to meet population needs. This is the basis of a problem which exists concerning the prison capacity standards set forth by the American Correctional Association's Commission on Accreditation for Corrections. Although Federal funding for prison construction is
somewhat contingent upon approval by the A. C. A., gained by meeting its standards, the Commission has no enforcement power. Therefore, compliance with structural standards is voluntary on the part of the prison. This is why oversized facilities continue to be constructed. At this time, a proposal for a 1,200-inmate prison has been passed by the Ohio state legislature, and shall soon be erected in the southern part of the state.

Since 1900, there have been twenty-seven state and Federal prisons erected with capacities of over 1,000 inmates each; such a facility was built at Lucasville, Ohio, as recently as 1972. Half of these prisons are overcrowded. The largest is the State Prison of Southern Michigan, with an intended capacity of 4,764; it contained over 6,000 inmates at certain times during the 1950's (Hawkins 1976:43). Part of the reason for these structural monstrosities is the unfortunate but predictable fact in the field of corrections that the smaller the inmate population, the higher the cost per inmate to build and manage a prison. In fact, 1973 figures for the state of Wisconsin show that while the annual cost of maintaining a male prisoner at the Correctional Institution for Men at Fox Lake was $4,500, a female prisoner at the women's reformatory at Taycheedah cost over $10,000 per year; this was so even though the educational and vocational programs at Fox Lake far exceed those at Taycheedah. It is the staff and security costs for a small institution that make the difference (Gibson 1973:220). This is why prisons continue to become overcrowded instead of
new prisons being constructed: it is more economical to cram people into the existing institutions.

The matter of privacy is an extremely important consideration in terms of the inmate's psychological well-being. It is a major problem in institutions of all kinds; there never seems to be a moment to oneself. Privacy is necessary to prevent the environment from constantly manipulating the individual, rather than the other way around. Prison inmates are often faced with a blatant lack of privacy. They may choose to adapt to a perpetually public situation by withdrawing socially—refusing to interact with others even when surrounded by them—or, by exhibiting overtly aggressive behavior. Therefore, the matter of individual privacy should be carefully considered in planning prison environments. Now, there is an inherent problem: prison is, by definition, a place where one is kept and supervised, for the protection of society and of the individual. Surveillance is a fundamental aspect of the correctional institution, and privacy must therefore be permitted in moderation—the prisoner should have some time to be alone at least occasionally.

Studies of open society have found that the more often people interact with each other, the stronger the friendship ties may be which develop (Giallombardo 1966:9). This, however, does not apply to situations in which the individuals involved are forced to interact or remain in close proximity, day in and day out without respite, as is the case in captivity. There is, instead, an enhanced potential
for the development of hostile, aggressive feelings. In a 1972 survey carried out by the South Carolina Department of Corrections, inmates were asked to name one area of prison life they would like to change. The two most frequent responses were "the administration" and "personal privacy" (South Carolina Department of Corrections 1973:113). Other studies have found similar results: privacy is very much on the inmate's mind at all times.

One of the shortcomings in the data in this area has to do with the majority of crowding studies having been performed on animals instead of humans, for obvious ethical reasons. Therefore, it is not always easy to relate crowding studies to human situations except in very broad terms. For example, D. E. Davis performed a series of experiments on rats, from which he concluded that humans need a small unit of housing with sufficient privacy and a stable population in order to maintain a healthy existence (1971:144). Researchers such as Fogg (unpublished) have taken these results to indicate that privacy in the prison environment is necessary as a means of controlling sensory stimulation (Fogg, p. 10).

A few studies have been done which are concerned specifically with conditions of crowding, density, and privacy in prison life. In a 1971 paper, Sommer investigated the prison cell as constituting an environment. Here, he viewed the correctional facility as a place in which the inmate has "an enhanced need for privacy" (Sommer 1971:18). In most prisons, this need is not met, as has been discussed. Still,
particular structural designs provide more opportunities for a modicum of solitude than others, thus possibly benefitting the inmate's mental well-being. For example, single-occupancy rooms contribute substantially to the potential privacy of prisoners.

Even so, there is hardly ever a chance for elected solitude in the typical maximum-security prison. Though a prisoner may have a single-occupancy cell, he or she is visible to the guards either through the window in the door, the grille front of the cell, or by means of an electronic device built into the walls or floor which monitors all movement. Thus, even when the staff member is not physically present, a television camera often suffices in his or her place (Cohen and Taylor 1972:79). Occasionally, a prisoner may act up purposely to be assigned to solitary confinement for a brief period of solitude.

The lack of privacy in prisons remains a problem even when steps are taken to alleviate it, such as giving the inmates keys to their own cells, or constructing smaller dining halls and cell blocks. Because of their economic attractiveness, dormitories are often selected by administrators on a budget, but group living of this type sharply reduces and inmate's chances for privacy. On the other hand, an excess of privacy (such as that available in some prison "honor dormitories") can strengthen the inmate sub-culture—an undesirable result when criminal values are espoused, which is typically the case (Sommer 1974:40-41). Thus, it may be inferred that prison inmates, for their own
safety and that of the staff, need a certain amount of supervision.

Taking the issue of the inmate subculture one step further, it has been established through several studies that differences in group formation are frequently due to the individuals' spatial proximity and the basic architectural aspects of living arrangements (Giallombardo 1966:6). Therefore, one might estimate that the housing assignments within prison and the facility's architectural plan may direct or discourage certain friendships or groupings, and perhaps prevent instances of violence stemming from particular antagonistic associations. Some physical designs promote the consolidation of inmates into undesirable social configurations; of this, institutional administrators should be aware.

Summing up the discussion of privacy, it must be repeated that single cells are of great importance in prison housing. Weaker inmates are protected from their fellows; homosexual relationships, especially involuntary ones, are more easily controlled; and, of course, the prisoner experiences somewhat more privacy and personal dignity than when in shared quarters (Sommer 1974:7). Although they are more expensive to construct, single cells should be the prime consideration in prison renovation and new prison design.

Aside from general discomfort and a lack of privacy, crowding in correctional institutions can produce pathological behavior in prisoners. Crowding and stimulus depri-
vation in prisons are highly salient topics for study in order to understand inmate behavior, in that these factors oppress, confine, and constrain the prisoner. If the conditions of crowding and stimulus deprivation were recognized and eliminated, the more serious effects upon the inmates could be decreased (Sommer 1974:42-44).

In attempting to study correlations between crowding and elevated blood pressures, David D'Atri decided to use a prison setting. This was because the environment in prison, as we know, may not only be crowded, but its inhabitants are forced to stay there and be continuously subjected to the effects of the environment. The inmates studied were males around the age of twenty-six, 71% of whom were white, 27% black, and 2% of other ethnicities. Three correctional institutions provided the data for the study. Modes of housing varied among them: Institution A featured single-occupancy, double-occupancy, and multiple-occupancy cells; Institution B had single cells and two large dormitories; and Institution C had single cells and one large dormitory. After considering a number of pertinent variables, D'Atri found a distinct association between inmates' perceived crowdedness and elevated blood pressures. Inhabitants of dormitories in all three institutions exhibited higher blood pressures and pulse rates than their counterparts assigned to single cells. Here, the degree of crowding was defined in terms of physical, social, and personal variables as well as square footages. The dorm residents were more likely to be confronted by threatening
interpersonal relations such as inmate assaults or rapes and territorial conflicts; residents of individual cells were not as likely to be faced with these problems (D'Atri 1975: 247-48).

Among the criteria used to measure perceived crowding are polar tests administered to inmate subjects, palmar sweat scores (also tied to stress), and urine testing. It has been found that individuals who experience stress emit significant amount of catecholamines and steroids in their urine; therefore, it is fairly easy to analyze urine samples of persons experiencing overcrowded conditions and thence determine their level of stress due probably to environmental factors (Paulus, McCain, and Cox 1973:428). Stokols (1972) states that where crowding is extreme and few means of changing the situation exist, the most frequent responses will be behavioral. The crowded individual may exhibit aggression, discomfort, or hormonal imbalance, but will remain at all times preoccupied with the matter of reducing or eliminating spatial constraints (Stokols 1972:276). This is carried out in a 1975 study by Paulus and associates, in which prisoners' reactions to crowded conditions were examined. The investigation revealed those inmates housed in high-density areas (especially dormitories) to be less tolerant of overcrowding than inmates whose living areas were less densely populated. Also, the overcrowded inmates regarded their immediate physical environment much more negatively than did their less-crowded peers (Paulus et. al. 1975:90). Obviously, the more crowded
a prison housing area, the greater likelihood of violence resulting due to reduced tolerance and dissatisfaction with the immediate architectural environment. Paulus's study also showed that the dormitory residents displayed more negative personality tendencies and a greater desire for privacy than inmates in single cells, even when the spatial density was lower for the dormitory residents (Paulus et. al. 1975:88). Again, I shall repeat: dormitories constitute a poor mode of housing and should not be utilised in correctional institutions.

Frequency of illness complaints is a fairly reliable indicator of psychological stress. Research conducted on naval vessels and college campuses has shown that stress induced by crowding is related to complaints of illness. In light of this, McCain and his associates investigated crowding and all illness complaints possibly instigated by stress in a prison and a county jail. McCain's findings supported those of Paulus (1975): social density has a greater impact on the prisoner than does spatial density. The more-crowded dormitory residents exhibited the most symptoms of illness even though they actually averaged more floor space per person than residents of one- and two-man cells, and there was no apparent temporal adjustment factor through which illness complaints gradually decreased over time in the dormitories (McCain, Cox, And Paulus 1976: 284-288).

A 1959 study of crowded urban housing in France revealed an association between very limited amounts of floor
space per person per housing unit, and an increased incidence of social and psychological pathologies. There was a definite link between crowding, illness, and crime (Hall 1966:161). If this was the case with free persons living in an open society, imagine the implications for incarcerated individuals whose overcrowded environment advances deviant behavior. Feelings of claustrophobia are often experienced by prison inmates inhabiting small wings. Most of a maximum-custody inmate's day is spent in his or her cell or wing, and when the area is only a few feet wide, it is easy to feel trapped (Cohen and Taylor 1972:79). In one of the jails I visited, the width of the lounge area for psychiatrically disturbed women is only about five feet; a staff member was of the opinion that the lounge's extremely confining nature contributed to the pathological behavior of the residents.

D. E. Davis, in a 1971 work, describes the ways in which crowding can actually alter the physiological function of humans through a variety of conditions caused by an increase in the environment's level of stimulation. The larger the group of individuals condensed into a setting, the greater the unavoidability of social interaction, which may lead to stress (Davis 1971:143). In prison, this stress is frequently manifested as physical violence. This brings out the matter of spatial behavior.

In discussing spatial behavior, two basic terms must be distinguished: "personal space" and "territory." Conceptually speaking, personal space is carried around with
the individual like a sort of invisible surrounding bubble; territory, on the other hand, remains relatively stationary and is frequently demarcated in some visible manner. Invasion of personal space by another may lead to withdrawal, while invasion of territory may incite defensive violence (Sommer 1959:248). Territoriality, says Fogg, has some roots in human instincts, though not all humans respond with aggression to territorial intrusion. The same is true for animals---some species will behave defensively upon territorial violation, and other will not (Fogg, p. 16).

Two studies done by A. H. Esser suggest that aggression is directly related to status and territoriality. In his findings, Esser states that an individual with high peer status or low societal status is more prone to violence---at least in an institutional setting (Esser 1973:132). Territoriality was evident at one of the jails I visited; the inmates would claim chairs in the dayroom as their "own." When another individual "invaded" the territory by sitting in someone's chair, a violent confrontation sometimes resulted. Since there were fewer chairs than inmates in this particular wing of the jail, the stage was well set for violent incidents. Again, this depicts the way in which seemingly unimportant details come to be all-important in prison: the smallest features of everyday life are magnified to an unrecognizable size.

Dr. Augustus Kinzel performed a personal-space experiment involving prison inmates who had histories of violent assaults while incarcerated, and inmates who had not. Many
of the former group became violent with little apparent
provocation. The experiment revealed the "body-buffer zones"
of the violent individuals as being nearly four times larger
than those of the non-violent individuals. Kinzel defines
body-buffer zone as "the area around a person within which
anxiety is produced if another enters" (Kinzel 1970:59). In
other words, body-buffer zone can probably be regarded as
congruent to personal space. Personal space is partly
determined by the subject's internal personality traits,
as was found in the Kinzel study. If it is presumed that
the discomfort of personal space violation is tied to aggres­
sion, then this may be interpreted as a possible source of
prison violence. Since prison is a restricted environment
from which withdrawal (a typical reaction to personal space
intrusion) is often impossible, the alternative may well
be an aggressive response (Fogg, p. 20).

Hildreth and his associates confirmed Kinzel's findings
in a study of their own; they theorized that the particular
discomfort displayed by prisoners when approached from the
rear might be attributable to fear of homosexual attack.
In fact, they hypothesized that homosexual anxiety in general
might be partly responsible for large body-buffer zones in
some incarcerated individuals (Hildreth, Derogatis, and
McKusker 1971:1641-1644). I disagree somewhat with this
contention, simply because it is a well-known fact that
neither humans nor animals like to be approached from the
rear, for even if there is no evil intent, the object of
the approach may feel the advent of a sneak attack.
Violent behavior as a reaction to crowding is generally the most extreme expression of distress with the situation, and is usually the result of the individual's inability to cope in any other manner (Fogg, p.7). We shall now look at violence in particular, and attempt to discern whether certain types of prison environments encourage the invasion of personal space or promote inmate aggression in other ways.
Section III

Part 3

VIOLENCE IN PRISON
Violence is an ever-present threat in correctional institutions. When large numbers of people who have been removed from society are placed together in a confined environment with little to do, tensions rise and petty irritations are given much more weight than their due; then unrest strikes, on a small or a large scale, and injuries or death result. Only in the case of massive riots does the public usually become aware of the occurrence; in general, all but those directly involved in the prison and its management—administrators, staff, and inmates—remain oblivious to aggressive occurrences there.

Through history, a general measure of the "success" of a prison has been its lack of escapes, riots, or violence. Since the abandonment of the solitary and silent systems, however, firm inmate control has been significantly more difficult to maintain. Inmate mobility and interaction reduces their absolute domination by the staff (Clemmer 1958: ix). Therefore, prisons today are often described as "breeding grounds" for criminal behavior. It seems only logical to expect that putting a criminal—an individual with antisocial attitudes—in a degrading, dehumanizing environment will only worsen his outlook and behavior (Sommer 1974:8). Indeed, when the criminal is thusly placed along with many others having similar attitudes, chances for rehabilitation seem slim.

The prison environment is one of tension and hatred, anxiety and potential conflict. These characteristics arise
from the physical and psychological constraints the prison places on the inmate; violence is a predictable product of this environment (Flynn 1976:116). Particularly repressive institutions are especially prone to outbreaks of violence, a fact which must be borne in mind in any consideration of maximum-security facilities or those with extraordinarily stringent discipline and procedures. Indeed, the majority of stabbings and other injuries of a serious nature have been found to occur at the institutions most concerned with security. Stock explanations for this tend to point toward the "type of inmate," not the type of place; and yet, as all behavior occurs within the context of the environment, it may well be inferred that the prison environment itself could be to blame (Sommer 1974:19).

In speaking of institutional aggression, the focus is primarily on intentional interpersonal violence: injurious assaults, premeditated or not, usually on a small scale. Homosexual rape is included but not dwelt upon particularly; the same sorts of design features facilitate both sexual and non-sexual assault. Riots are considered as well, although little evidence has been given suggesting the conclusive, direct influence of the architectural environment on the mass behavior of individuals, except for the matter of overcrowding. Mass disturbances are usually generated by a combination of factors, one of which may be the state of the physical plant; however, violence in relation to prison design is frequently easier to perceive at the individual level.
Different aspects of the prison environment can produce violent behavior, to be sure. Yet, a good many of those in prison were violent long before they ever became inmates. Their violence may have stemmed from growing up in an abusive home or in a violent neighborhood, or simply in the United States with its "national ethic" of violence (Nagel 1976:105). A 1966 study by D. R. Jaman and associates described seven characteristic traits of the typical violent offender. These were:

-- Familial deprivation (broken home, etc.).
-- Low level of education and unstable employment record.
-- Record of institutional violence.
-- Arrest record prior to age 12.
-- Non-white and young.
-- History of epileptic or suicidal behavior.
-- Personality disorders, as measured by the Minnesota Multiphasic Personality Inventory (Jaman et. al. 1966:14).

This study, then, concentrates on the offender's personal history and does not take into account the effects of the prison environment.

The 1974 study of the North Carolina state prison system by Ellis, Grasmick, and Gilman revealed two factors which related significantly to prison aggression: inmate age and rate of visitation. The younger the inmate and the fewer outside visitors received, the more likely an incident of violence. The investigative level here, however, is that of the institution as a whole rather than individuals; causation is regarded as general, not specific. Therefore,
it is difficult to draw effective conclusions from this study as to the sources of institutional violence (Ellis, Grasmick, and Gilman 1974:30). Since fewer outside visitors leads to more incidents of violence in prisons, it may be construed that an out-of-the-way, rural location might actually contribute to the aggressive actions of the offenders imprisoned there. This should be realized when considering possible sites for the construction of new correctional institutions.

Glaser feels that younger inmates, being more aggressive, need a highly structured environment which will inhibit violent tendencies instead of the relatively free environments in which youthful offenders are typically placed (1964:218). Glaser here regards the prison as a social structure, and is concerned with the success of the functioning of that structure rather than the success of treatment or rehabilitation. Whatever the case, it has been shown that the more restrictive the institution, the more likely it is that violent incidents will occur; thus, I must disagree.

Fogg proposes another source of prison violence, similar to the concept of the "self-fulfilling prophecy": when an individual is labelled or classified according to earlier, violent behavior, he or she may learn to behave in a habitually violent manner. Since others anticipate violent actions from him or her, the individual complies by "living up to expectations" (Fogg, p.22). The physical environment can also constitute a self-fulfilling prophecy,
figuratively speaking; bars and locks imply that the resident is a dangerous, aggressive being whose animalistic tendencies require dehumanizing treatment. Just as some theorists feel that bars tempt escape, a hard and oppressive environment may provoke violence.

At times the violence occurs on a large scale. An epidemic of riots spread over all types of prisons during the 1950's. In 1953, the American Prison Association's Committee on Riots put forth a report listing what had been determined as the fundamental causes of the disturbances. "Oversized and overcrowded facilities" was the fifth item on a list of seven (American Correctional Association 1972:30). As suggested previously, violent behavior on a mass level may often be associated with overcrowding. In 1970 and 1971, prison riots spread almost contagiously over the country---New York's Tombs and Attica; the Pontiac, Illinois State Penitentiary; correctional facilities in Vermont; and the Army disciplinary barracks in Fort Gordon, Georgia. Most of these were particularly violent and, unlike past disturbances, were predominantly based on what Chaneles describes as "fundamental issues," such as questions of inmate civil rights (1973:4). They were probably not entirely unrelated to the advancing age and deteriorating physical conditions of most of these institutions as well.

As is commonly recognized, racial issues are often a cause of institutional violence. For example, the inmates of Attica indicated that one source of the tension that eventuated the 1971 riot there was the generally indifferent
attitudes of white correctional officers toward the black and Puerto Rican inmates, who constituted eighty per cent of the rural prison's population. Of the entire staff, there was only one Hispanic and not a single black (Nagel 1973: 52). As stated before, this is greatly contingent upon the location of the facility; rural institutions cannot always provide appropriate personnel.

As Vernon Fox states in his well-known book on prison violence, causes for institutional uprisings are difficult to conclusively identify. Certain conditions may be found in association with rioting, but causes present at all prison riots are not readily recognizable (Fox 1956:306-307). Herein lies an important concept inherent in this thesis. The architectural environment can rarely be said to actually cause behavioral manifestations in its inhabitants. Instead, particular design aspects may possibly encourage, provoke, or facilitate violent behavior in prisons through an excess of collective privacy, an overcrowded dormitory, or a poor overall layout. These design features are frequently subtle enough that they are not immediately identified as promoting prison violence. Since they cannot be construed as direct causes of inmate disturbances, it would be foolish to assert that their removal or modification would absolutely eliminate violence from prison. Still, violence could very feasibly be reduced through such attention to the physical environments of correctional institutions; after all, improvement, not miracle, should be the realistic aim of prison designers and reformers.
The 1973 South Carolina Department of Corrections study found several variables to be positively associated with, but not necessarily causes of, prison riots. The findings included the following:

1. Maximum-security prisons have a higher incidence of riots.

2. The incidence of riots increases with the age of the prison.

3. The incidence of riots increases with the prison's planned capacity.

4. Lack of productive and meaningful job assignments in medium- and minimum-security prisons increases the incidence of riots.

5. There is a higher incidence of riots in prisons where the inmates regard the recreational programs as inadequate (South Carolina Department of Corrections 1973:32).

All things considered, I think it is safe to say that crowding and high inmate population density do not necessarily cause prison riots, but tend to be prevailing conditions at institutions where violence breaks out. Deficient structural design may also facilitate aggressive outbursts, though more subtly than other factors—such as lack of staff surveillance.

It is readily apparent that the causation of institutional violence is a very unsure area. Some theorists attribute prison aggression to an overload of environmental stimuli due to crowding; others feel it is the lack of such stimuli due to isolation which leads to outbursts (Fogg, p. 24-25). Many of the studies from which theories are derived are those relying on experimental data involving animals—as in the case of the crowding and density studies—so
their evidence should be thought of as tentative rather than conclusive. This is one of the major disadvantages of the data which I came across in my research.

Although little empirical testing has been done on the effect of prison architecture on inmate violence, it does appear that the less oppressive and more open the design, the less likely it will be for violent behavior to manifest itself. For example, the new men's prison at Leesburg, New Jersey, which features colorful rooms, landscaped garden courts, and large expanses of glass, has enjoyed "a surprisingly low level" of violence during the first three years of its existence (Nagel 1976:110). Nagel strongly feels that architects can modify the violent behavior of prisoners through intelligent, sensitive facility designs.

Edith Flynn is of the opinion that an institutional appearance in a prison encourages unnatural behavior among its residents and therefore fosters inmate violence. The more "normal" the prison's inward and outward appearance—lack of obtrusive surveillance or physical barriers, and other intimidating features—the better chance for "normal" behavior among inmates (Flynn 1976:124). Being a co-founder of the now-defunct National Clearinghouse for Criminal Justice Planning and Architecture of the University of Illinois, Flynn predictably provides a recipe-like list of suggestions for architectural and environmental modifications in the prison. The increased normalcy and humanization of the institution is certainly a desirable goal; I do not disagree with that. Even so, not all prisoners may
benefit from the same type of environment. Flynn seems to have in mind the halfway-house resident, not the maximum-security individual. Violence in prison entails not only environmental provocation, but environmental facilitation. It is essential that opportunity for aggression not be overtly provided the prisoner through visual barriers which impede staff observation, and yet privacy is necessary.

Perhaps the most salient aspect of prison security lies in the individuals themselves, their custody ratings, and their psychological tendencies. "Problem inmates" will require a stricter environment, whereas others may be assigned to surroundings featuring more physical amenities. To properly assign inmates to correctional institutions, careful testing must be carried out in order to determine the optimal environmental configuration for each offender.

Architecture affects corrections in a specific way: in prison, there are few or no alternatives, and the inmate cannot modify his or her surroundings to any great extent. In Nagel's words, the prison setting is "total, absolute, comprehensive, immutable" (1973:177). Design is of great significance in prison, because inmates are unable to avoid any inadequate or dangerous arrangement: overcrowded dormitories, poor lighting, gloomy interiors, or obscure stairwells. Poor design may result in physical attack, in pathological behavior, or severe depression. This need not be so. Though the state of corrections is far from perfect, we certainly have evidence of specific architectural designs producing fewer debilitating effects than others. It
is entirely possible to modify existing correctional facilities to meet higher standards of design, and close down those which are hopelessly outmoded---stacks of cell blocks five tiers high, and so forth.

Aggressive incidents have a propensity to occur in various parts of the correctional institution, depending on its custody rating and physical plant design. In a minimum-security prison I visited, trouble in the form of rapes and knifings would usually take place in the individual rooms rather than in the showers or elsewhere. At a medium-security institution featuring only dormitory housing, violent assaults would often be located on someone's bunk, or in the television room at the end of the dormitory. Trouble in one maximum-security prison, I was informed, tended to occur in the Auburn-type cells or, at times, in the showers. Apparently, institutional violence is often a matter of opportunity and proximity.

"If there is any fear that preoccupies prison managers from coast to coast, it is fear of disorder in the dining room."

So states William Nagel (1973:88), with good reason. On July 4, 1970, while Nagel was working for the Department of Corrections in Philadelphia, an extremely violent riot occurred in that city's Holmesburg prison. The riot, which resulted in the injury of twenty-nine guards and forty-three inmates, was advanced by the physical design of the institution. First of all, the building was without air conditioning, and this particular Fourth of July was unbearably hot. Much more serious, however, the prison's floor plan
was such that the inmates had to walk past the kitchen to get to the dining area, where the riot took place. The inmates were well aware that there was not sufficient control over the butcher knives, meat cleavers, and other weapons present in the kitchen, and therefore took advantage of the opportunity to vent their hostilities on their peers (Nagel 1976:106-107). In light of this incident, it is obvious that such fears are well-founded. The dining hall brings together the largest number of inmates in a single place and tensions may be high among inmates as well as officers. At one prison I visited, I was shown eating utensils made of a special type of plastic which crumbles if chipped at or filed. Therefore, no plastic spoons can be honed into dangerous weapon blades. Plastic utensils previal at most prisons, though I toured one jail at which steel utensils are used. A correctional officer explained that a very precise count is kept as utensils are handed out at meals, and the exact number distributed must be promptly returned at the end of the dining period. Not a single inmate may depart the cafeteria until the count matches; if anything is missing, the inmates must sit in their places until the item is produced, no matter how long it takes. I would venture to say that, although more expensive, the plastic method would be safer and simpler to use.

Dining halls are not necessarily the only place where group disturbances are a particular threat; I was told at a maximum-security institution that group trouble there
tended to occur in the yard used for recreation. Since this prison houses all its inmates in single-occupancy, inside cells, the yard and the dining hall are really the only two places inmates congregate. Thus, these are their only opportunities for any sort of action en masse. The population of this prison was approximately four hundred inmates. To me, this suggests a strong need for even smaller prisons, especially if they are maximum-security. The extra operating costs would be well worth the enhanced safety.

The case of the Atlanta Federal Penitentiary is exemplary to this discussion of prison design and inmate violence; indeed, it is perhaps the most applicable case at this time in which the physical plant has been found responsible, at least in part, for inmate threat.

In April of 1979, the Committee on the Judiciary adopted an amendment calling for the permanent closure of the U. S. Penitentiary at Atlanta, Georgia, by September 1984. The Atlanta Penitentiary, constructed in 1900-1902, has a capacity of three times the suggested maximum population for any correctional facility. Its physical structure is too large to make safe or properly manage; many inmate murders and disturbances have occurred due to its design. The U. S. Penitentiary at Leavenworth, Kansas, opened in 1906, is also too old and overcrowded to merit perpetuation as a prison in its present state. However, alterations were approved which shall convert Leavenworth into "a modern correctional institution" with a maximum capacity of 500 men by September, 1985. This conversion
would eliminate Leavenworth's "penitentiary-like features" and thus alter its function (House of Representatives 1979: 14).

The Atlanta Penitentiary, a maximum-security institution housing 1,300 adult males and the country's largest prison industry, became subject to a year-long investigation by the Senate Permanent Subcommittee on Investigations after several sources indicated that the institution was the setting for "violent inmate murders, extensive narcotics trafficking, and various other criminal activities" (Permanent Subcommittee on Investigations 1980:1). Reasons given for this deterioration in the prison's custodial efficacy include the age, size, and overcrowded conditions of the institution. Negligence on the part of administrators and staff was equally significant to the advancement of the situation, of course, but physical aspects of the plant were contributory. For example, the cell blocks were designed in such a way that it was possible for two inmate assailants to conceal themselves in a cell block stairway and there attack with a knife and a piece of pipe another inmate who was scheduled to testify on Penitentiary conditions to the U. S. marshal in Atlanta (Permanent Subcommittee on Investigations 1980:7).

Besides greatly exceeding the suggested population limit for prisons, the Atlanta facility consists of cells whose square footages fall far below the minimum standard of sixty square feet set by the American Correctional Association. Also, the multi-tiered steel "cage construction" was
cited as contributing to the sensory deprivation of inmates and staff. Overall, the U. S. Penitentiary at Atlanta is an example of an outmoded correctional institution, built at a time when penal philosophy concentrated on the physical and psychological isolation of offenders from larger society (Permanent Subcommittee on Investigations 1980:24). The structure does not conform to present ideology and therefore cannot accommodate the needs of inmates and staff. Methods of supervision have changed since the turn of the century, as has the amount of permitted inmate movement. Indeed, personal interviews with a number of prisoners revealed the common opinion that only increased isolation of inmates from one another could feasibly prevent or reduce the rampant criminal activity within the prison.

In 1977 the Atlanta Penitentiary attained its peak population: 2,300 men in a prison meant to hold only 1,500. Most of the inmates there are repeat offenders serving lengthy sentences. They are housed in six dormitories, five cell blocks, and a drug abuse unit. Four of the cell blocks are set up in stacks of five tiers of cells, whereas the fifth has four cell tiers. The two largest cell blocks, A and B, were constructed to hold four men per cell, but each contains six to eight inmates; the two oldest cell blocks, C and D, were built in 1902 and have only single cells; and E, the four-tiered cell block is two-fifths double occupancy, three-fifths single cells. This last building and the dormitories are considered "honor housing" and are occupied by inmates with good conduct records.
There is also a two-story building housing both disciplinary segregation and administrative detention cases. For the total capacity of 118, only three "strong" cells are intended for single occupancy; the rest are three-bed, four-bed, and a small dormitory (Permanent Subcommittee on Investigations 1980:25-26). In view of the building's intended purpose---segregation---multiple occupancy may frequently be self-defeating, especially if the aim of segregation is the safety of the inmate through isolation. As the segregation population averaged around 75% during 1977, it is certain that there was inmate interaction in the detention and disciplinary housing.

Another problem with the physical arrangement of the Atlanta prison is the placement of the admissions and orientation unit on the first and second tiers of B cell block, one of the two largest housing structures at the facility: its total population ranges from 570 to 760 inmates (Permanent Subcommittee on Investigations 1980:25). Thus, new prisoners are directly exposed to more experienced, "predator-type" inmates in an institution where inmate movement is largely uncontrolled. Of the nine homicides which occurred during the sixteen months between November, 1976 and April, 1978, five took place in the multi-tiered cell blocks---buildings in which observation and, therefore, supervision are difficult. Four of the five cell block killings occurred in A and B cell blocks, each of which assigns six to eight per cell designed for four men. C and D cell blocks, featuring single-occupancy cells,
saw only one killing between them (Department of Justice 1978b: 10).

The main housing area of the Atlanta Penitentiary is designed on the telephone-pole plan. Seven of the nine homicides occurred within or just outside this single large structure. The two other killings happened on the ramp between the prison industries buildings. No lethal violence was recorded at either E cell block/Dorm 1 (located in one building), Dorm 2, or Segregation, all of which are separate buildings on the prison grounds (Department of Justice 1978b: illustration 1). This seems significant.

Part of the reason for the concentration of homicides in cell blocks A and B was the somewhat treacherous inmate complement there. The small capacity (118 inmates) of the Segregation Building was cited as influencing the assignment there of troublesome prisoners. If little space was available in Segregation for the accommodation of a problem inmate, he was likely to remain at large in the general population. Usually, this meant he would stay in either A or B cell block, where "Atlanta's proven disruptive" inmates are found. Ironically, these individuals have full interaction with those newly admitted to the Admissions and Orientation Unit—all newcomers have no choice but to mingle with known troublemakers (Department of Justice 1978b:11-14). Worse, when troublemakers are recognized, they are housed in multiple-occupancy cells despite the common knowledge that single cells are necessary for effective detention of dangerous inmates. At Atlanta, however, the single cells are
reserved for well-behaved individuals. Therefore, the investigatory team recommended that single cells be utilised to house disruptive rather than compliant inmates, and that the physical arrangement of the prison grounds be modified by the installation of fences so that all inmate traffic to and from the industries complex take place along a single walkway. At the time of the investigation, several avenues were available between buildings, making observation difficult; as mentioned above, two killings occurred in this area (Department of Justice 1978b:14-15).

Another potential source of violence was observed by the investigative team: the clothing exchange room, where dirty apparel is handed in for laundering and clean apparel distributed. The team concluded that the physical construction of the room contributed to the aggravation and hostility of the prisoners by forcing them to be crowded together, shoving and jostling through a single doorway. In fact, the situation was seen as very likely to incite violence among the inmates, and rapid modifications were strongly urged.

The team's final contention was, "the mere size and structure of the facility creates an impersonal, dehumanizing atmosphere in which staff and inmates both suffer." Such a large inmate population in ratio to the number of staff caused problems in supervision, especially at night when fewer correctional officers were on duty. The team stressed the absence of any single identifiable factor responsible for the homicides at Atlanta, attributing them
instead to a combination of factors including the physical design of the Penitentiary (Department of Justice 1978b:18-20).

The Atlanta Penitentiary shows what can result from an overpopulated, oversized, outdated institution being permitted to function without modification of plant or management. Though the telephone-pole design can be very economical in terms of utilities and so forth, there is often a real problem in keeping various inmate classifications apart. In a 1974 study of violence in prisons, inmates were asked "What would you do to reduce the number of stabbings, fights, and beatings that go on around here?" The most common response was "Separate inmates from each other." Obviously, more potential group and individual interaction is directly tied to more potentially aggressive confrontations (Ellis, Grasmick, and Gilman 1974:33). Here again is emphasis on the importance of single cell as opposed to dormitories, and smaller housing units as opposed to massive cell blocks. Also, as inmates of medium- and minimum-security institutions typically have higher interaction rates than maximum-security prisoners, I feel that the first two types of prisons might well profit from the provision of architectural features such as partitions of glazed glass in certain well-peopled areas; the glazing would decrease the inmates' perceived interaction level while not actually obscuring actions, so that supervision could be maintained. Small, scattered dining areas would also keep interaction down to a manageable degree. Overall, the campus plan would seem to be the
optimal plant design for reducing aggressive encounters.

I have discussed here various aspects of prison violence as tied to institutional design. As seen, certain qualities of the architectural environment seem to contribute to outbursts of aggressive behavior among prisoners. In the final section, I shall consider some additional problems and some recommendations for the improvement of prison design.
PROBLEMS AND RECOMMENDATIONS
"The history of prison architecture stands as a dis­
couraging testament of our sometimes intentional,
sometimes accidental degradation of our fellow man. 
Prison structures have continued to be built in a 
way which manages by one means or another to brut­
lize their occupants and to deprive them of their 
privacy, dignity, and self-esteem, while at the 
same time strengthening their criminality. The 19th 
century allowed vast and dreary buildings and phy­
sical cruelty to grind down the prisoner. The con­
temporary prison seems to allow mechanical contri­
vances to dominate the prisoner. Architects in the 
future must share some responsibility for the unin­
tended indignities made possible by their works 
(Johnston 1973:53)."

Indeed, it is imperative that prison planners realize that 
the total impact of the penal experience is a product of a 
number of aspects taken together with the type of housing 
and the architectural environment in general. Physical ele­
ments of housing must be regarded in conjunction with pro­
gram, staffing, security, and a great many nonphysical con­
siderations. In short: a correctional institution's accep­
tability, and therefore its impact on the residents, is a 
function of the psychological and sociological attitudes in 
addition to the physical facilities involved. A prison 
design is only as good as the personnel and programs en­
tailed. The full context of the correctional process must 
be carefully scrutinized in order to arrive at conclusions 
which may improve today's prisons: one must penetrate the 
surface of an attractive facade and examine its workings 
(Nagel 1973:80). If the goal of imprisonment is to prepare 
the criminal for reentry into society, it is obvious that 
this can only begin to be achieved by attempting to allevi­
ate the problems that caused the criminality in the first
place. Here, the assumption is that crime is symptomatic of a maladjustment of some sort; the prison must try to resolve the maladjustment. Architecture may be adapted to aid this problem-solving process, says Gill, by providing the most normal environment possible without undue emphasis on any specific programs—educational, vocational, or industrial. This is not to say such programs would be forsaken; rather, they would be no different from programs available to average citizens, thus giving prisoners no significant advantage in these areas (Gill 1972:120-121).

For an improved correctional system, there must be more attention paid to the individual characteristics and custodial requirements of the object of this field: the convicted offender. As the American Correctional Association has stressed, it is only a distinct minority of inmates who require confinement in maximum-security prisons; indeed, even in such closely controlled institutions, supervision by qualified personnel is a more effective custodial measure than dependence on mere physical barriers in the construction of the facility itself (American Correctional Association 1972:33). Nonviolent nonrepetitive offenders, it is known, are rarely escape risks. They may safely be assigned to minimum-security camps, which are far less expensive to build and maintain than medium- or maximum-security facilities. Overall, the Federal Bureau of Prisons is sending more people to minimum-security institutions and fewer to penitentiaries at the present time (Committee on the Judiciary 1979:8-9). Also, it must be remembered that security
ratings are not necessarily parallel to treatment ratings. Some "escape artists" are highly amenable to reform, while less serious security risks might be virtually untreatable. Institutional architecture should bear this out. Gill, in a 1962 article, redefined classification of inmates into four basic groups. These include new offenders, never before in prison; tractable prisoners, who may be defined as those "wanting and capable of treatment"; intractable, referring to those "not wanting treatment"; and defective prisoners, who are either limited or incapable of treatment. Program, staff, and architecture should, ideally, conform to the needs of these respective inmate types. Tractable prisoners generally do not require as strict restraint and supervision as do their intractable fellows; yet many correctional facilities continue to jumble different prisoner types together indiscriminately (Gill 1972:116-118).

With regard to the four categories of prisoner classification, Gill envisions four types of penal facilities. For the new offenders, a reception center; for the tractables, a "normal" institution with treatment facilities; for the intractables, a very basic custodial prison; and for the defectives, a combination custodial-hospital-educational institution. Each of the four facility configurations would provide for maximum-, medium-, and minimum-security risks in each inmate category (Gill 1972:119).

Gill cites some existing institutions which conform to the needs of the tractable prisoner. Their characteristics include an overall atmosphere of normal living, not "tradi-
tional" prison discipline—architecture, program, and personnel reflect this. Activities are carried out in small groups, as a rule, tending to approximate an "institution family"; and inmates perform tasks under the supervision of and in cooperation with staff members. Security remains primary but not preoccupying. Finally, the majority of these facilities are designed on the open campus plan (Gill 1972:126-127).

Sadly, such prisons are the exception and not the rule. The majority of extant prisons are unmanageable and dehumanizing. Many groups and agencies have made efforts to combat the problems in American correctional institutions by providing suggestions and guidelines for modification and construction. I will cite some of these.

In 1967, the President's Commission on Law Enforcement and Administration of Justice recommended that prisons be designed for smaller populations and located in or near the cities from which their inmates come (Nagel 1973:183). The Department of Justice and the American Public Health Association also have called for newly constructed facilities to have capacities of no more than five hundred inmates, a figure I consider rather large (Department of Justice 1978a:14; A. P. H. A. 1976:52). Further guidelines are provided by the Commission on Accreditation—for example, single cells in long-term institutions must have at least sixty square feet of floor space, and the acceptable decibel ranges for prison housing units are 65-70 for daytime, 40-45 at night (Department of Justice 1978a:10-11). The Department of
Justice also specifies standards stating that all cells in new facilities should be on an outside wall, with no less than seven feet of space between walls and at least eight feet of space between floor and ceiling (1978a:14). In a more specific vein regarding institutional safety, Gill advocates the location of the prison control center outside the prison enclosure, with secondary stations occupying appropriate spots within the prison itself. The control center would contain all the expected features: telephone switchboard, master locking mechanisms, arsenal, and emergency utilities (Gill 1972:117). If this arrangement had existed at the New Mexico penitentiary, the riots and slayings could not have occurred; the prisoner takeover of the institution was wholly contingent on the penetration and seizure of the within-walls control center.

Up until quite recently, there was an organization formed exclusively for the purpose of dictating methods for the improvement of correctional institutions. This was the National Clearinghouse for Criminal Justice Planning and Architecture, begun in 1971 at the University of Illinois, Urbana. The Clearinghouse was under contract with the Legal Enforcement Assistance Administration, and its architects and corrections experts were responsible for keeping up with new developments in correctional planning and reviewing applications from states and counties for Federal corrections construction grants. Monies were awarded the projects which met the Clearinghouse standards of "advanced practices"; projects which did not come up to par were given technical
guidance to rectify their shortcomings. Unfortunately, the
Clearinghouse itself had shortcomings. The organization's
publication, Guidelines for the Planning and Design for
Regional and Community Corrections Centers for Adults, was
really a book of ideas and suggestions. It failed to define
"advanced practices," and did not even list the types of
programs and designs that would be considered fundable. As
such, it was regarded as somewhat unsubstantial by many of
those who would ostensibly come under its aegis for funding.
Also, many states found its suggestions too expensive and
unconvincing to the taxpayer to be truly feasible (Black­
more 1978:42-43). I am told that the Clearinghouse has
formally ceased to exist. This is truly a shame, for with
better management and greater specificity in institutional
requirements, this could have been a momentous organization
in the field of correctional architecture. I certainly hope
that the program will somehow be salvaged in the near future;
there is an urgent need for public attention to be drawn to
current prison conditions if any action is to be taken.

A very basic problem, probably unnoticed by most of
those in positions of influence, is the failure to take an
institution's treatment program into consideration during
the physical planning stage. The result is the development
of a program which must be adjusted to conform to the faci­
ility's physical accomodations (Nagel 1973:132). Clearly,
this is a backward way of managing a prison; in a total in­
stitution, physical plant and treatment program are inex­
tricably entwined and must be regarded as such from the
earliest stage of design. There is an urgent need for greater communication and cooperation between prison administrators and prison planners or prison renovators if more satisfactory facilities are to be developed. After all, a correctional facility is merely the setting for administering treatment, which is the absolute basis of the penal philosophy of today (Nagel 1973:135).

K. L. McReynolds, a Canadian research consultant, puts forth a succinct comment on prison design and construction today:

"Building a correctional facility is a complicated process characterized all too often by an unsatisfied customer. Sometimes this dissatisfaction comes about because the client, usually a senior representative of a provincial or federal government, does not or cannot define the requirements of the new facility in a manner which can be synthesized into physical form. In other instances, the client may, unknowingly, hold preconceptions which are either obsolete or unrealistic. Thus it is not until the prison is built that their inappropriateness becomes apparent" (McReynolds 1973:26).

Therefore, says McReynolds, it is essential that the persons who will be working in the new correctional facility be included in the design process. Through this type of cooperative planning, various aspects of function, organization, and population may be taken into consideration and provided for from the beginning (McReynolds 1973:27). Indeed, to create better, more effective correctional institutions, architects must be able to comprehend the functions and goals involved and to design environments accordingly. Rehabilitation and reintegration must be employed as constructs in determining the most supportive, least harmful prison
The following is an interesting note on how architects' decisions on institutional design are made.

"In developing the statements of requirements which follow and the space requirements for each activity and function, operations were observed at Institution X and operational practices and needs were discussed with operating and staff officials. The very serious limitation of facilities, staff and equipment at the present time, coupled with the overwhelming number of residents in the Adult Services complex, virtually rules out chances of obtaining any useful information from staff or residents except for such generalizations as more, small correctional centers with more programs, staff, equipment and facilities. The more useful information comes from ideals or goals which the practitioners express" (Gruzen and Associates 1972:60).

These remarks show that, in this particular case at least, there had been some communication with prison officials during the design process but the general staff members' opinions were not considered relevant and neither were those of the inmates. Fortunately, perhaps, the prison designed by these architects was never built; there was actually a decrease in prisoner population and the extra structures were unnecessary. This, however, was an unusual case.

Here is the point at which the experts step back, survey the situation, and say "What do we do now?" Nagel and his team concluded, in both 1972 and 1976, that prison is not an effective setting for rehabilitation and does not protect society as efficiently as it might (Nagel 1973:180; Nagel 1977:170). I agree. At this point in time, however, the answer is not to abandon or abolish prisons: it is simply not feasible. There must be other routes.

As has been presented in this paper, a great many guide-
lines exist in regard to prison design. With all of these improvement-oriented guidelines, what could be the problem? The problem is that the guidelines are simply not followed. They are not perceived by most designers and administrators as requirements, and the results are more dormitories, more oversized institutions, and more isolated locations. We do not need more recommendations: we need regulations, requirements, and laws. Without these, abominations in prison housing shall persist and corrections will remain as ineffective as ever. The amount of money that has been spent on the construction of correctional institutions in this country since 1910 is, I am sure, astounding; and all we have to show for this expense is a vast collection of prisoners which cannot fulfill the purpose of rehabilitating the offender. The majority of recommendations which have been made for changes in prison design are quite intelligent; they need legal support if they are to have an impact.

In addition to enforced standards, we need to eradicate the economic yoke around the neck of the correctional officials. Certainly, money is not a plentiful commodity at this point in time; and yet, it is self-defeating to continue to save a few dollars on ineffective designs while failing to find or implement better ones. The last section clearly presented institutional design and size as being directly associated with the facilitation, promotion, and provocation of inmate violence. It is, at the least, unfair to perpetuate prisons which not only do not rehabilitate but endanger the prisoners who populate them. If new correc-
tional facilities are absolutely essential, then they must be provided, in the most humane possible configurations. I prefer, however, to advocate the renovation of those prisons extant which are still useable, and not outrageously oversized or outdated. When inspecting the Federal Bureau of Prisons' budget proposals for 1980, the chairman of the Subcommittee on Courts, Civil Liberties, and the Administration of Justice emphasized the importance of seeking less expensive alternatives to building new prisons (Committee on the Judiciary 1979:4). This suggests an imminent period of renovation of inadequate facilities, which is definitely an improvement over leaving them as they are. For those facilities such as Leavenworth and Atlanta which appear irreparable, abandonment and demolition are the wisest actions.

As Gill points out, twenty per cent of the 25,000 cells which make up the total complement of the Federal Bureau of Prisons are maximum security. When added to state facilities maintaining this level of custody, administrators feel that these accommodations will continue to suffice for the intractable offenders without need for new prison construction (Gill 1972:124). In light of the evidence put forth herein concerning the dangers and limitations of ancient prisons, their use should be avoided at all costs. Pathologies, assaults, and murders will be prevented in the long run, despite the expenditures for the renovation and intelligent construction of other institutions.

Perhaps most important of all in terms of the psy-
chological well-being of the inmate, we desperately need more normal prison environments: prisons which approximate, to the greatest possible extent, life in society. This may be found in the configuration of the community corrections model. Reformers are quite right in pressing for the containment of inmates within the environment from which most of them came. It seems sensible to habilitate prisoners for reentry in the location where that reentry will eventually take place. Many theorists feel that this model will lead to rehabilitation more rapidly than the traditional prison.

Now, there are problems inherent in this argument: not every inmate is amenable to a community model. My perception of a community corrections model is one in which the correctional institution is located within the community rather than out in the country, and in which custody is not the all-encompassing concern of the staff. Certain security measures will, of course, be taken, but reintegration into the community should be the goal preoccupying the administration. Intensive programs of education, useful job training, and psychological treatment should be included in this model. The inmates would live in the institution, but work-release programs for daytime should be implemented as soon as the individual is judged ready. The aim is to teach the offender to function successfully and within the law in the society at large, not to feel dehumanized.

The community prison would be appropriate for most minimum-security and many medium-security individuals. For other medium- and maximum-security offenders, a more cus-
today prisons such as that discussed by Gill would serve the purpose of removing the offender from society as necessitated by the nature of his or her crime. Careful consideration of individual inmate personality and history characteristics will be instrumental to the success of this correctional system. Whatever the custody rating, all institutions must have individual-occupancy rooms, with no exceptions. In admissions centers where the new inmates may be experiencing a particularly low ebb in psyche due to the anticipation of what will happen in prison, I propose a private room with some manner of windows on the side walls providing a certain amount of interaction with the inmates to either side. In this way, the individual will not feel as completely alone in the frightening situation and will therefore be less likely to attempt suicide, which is a common reaction to admission to jail or prison.

Aside from all concrete design proposals, there is a strong need for further research in the field of corrections as to the types of institutional designs which will cease to promote violence and other pathologies. Prisons can no longer be ignored by the public; we must expose, inspect, and improve the conditions which we continue to employ for the incarceration of certain members of the society. The more that is understood, the better the possibilities for the creation of a more humane and effective system of corrections.
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