

ATLAS SAFETY & SECURITY DESIGN, INC.

CHANGES IN PRISON FACILITIES AS A FUNCTION OF CORRECTIONAL PHILOSOPHY

As published in **History of Prisons**, Chapter 3, Roger Dunham Editor, 1991

By Randall Atlas Ph.D., AIA
Atlas Safety & Security Design, Inc.
Miami, Florida

As correctional philosophies, programs, economic issues, and available technology have undergone change, so has correctional facility design. In fact, prison design has an important place in most correctional philosophies. The stated purposes and objectives of a correctional system often dictate the use of specific types of physical facilities. Similarly, the physical design may limit or enhance the implementation of operational policies and philosophies. The physical layout of correctional facilities often influences or even necessitates specific styles of management and administration. Of particular importance, correctional philosophies and their representative physical designs have undergone considerable change during the past twenty years.

Throughout the history of prison reform, the argument has been advanced that rehabilitation will not occur until the physical environment has been improved and changed. But new facility design and construction are not necessarily related to improved operation and management, reduction of overcrowding, fewer lawsuits, or the rehabilitation of inmates.

Morris and Jacobs (1974) propose that most people who speak of prison reform do not differentiate between two distinct concepts: humanitarian reform and the rehabilitative ideal. Humanitarian reform calls for minimum civilized living conditions, along with ensuring the physical safety of inmates and staff within the prison. The rehabilitative ideal refers to the kind of treatment and programs that will facilitate the successful reintegration of prisoners into society. Space and other aspects of facility design can have an impact on humanitarian reform or implementing the rehabilitative ideal, but not necessarily on both. It is possible, for example, that improvements in physical design and facilities will only promote the humanitarian ideal without improving rehabilitation.

Historically, outdated architectural design has prevented the humanitarian reform concept from being realized. Poor design and deplorable living conditions, overcrowding, insufficient staff, and a decrepit physical plant have deprived inmates of basic needs. These conditions have violated due process and other constitutionally guaranteed rights.

While economic constraints and overtaxed physical facilities have most often prevented humanitarian reform, the situation with respect to rehabilitative reform is more complex. To some prison administrators, the rehabilitative ideal has meant reforming prisoners by changing theft values and attitudes toward conventional societal norms. To others, the rehabilitative ideal means training inmates in educational and vocational skills so that they will be employable upon release from prison, and be less likely to revert to crime.

While prisons and correctional facilities have had varied degrees of success with rehabilitation and recidivism irrespective of the age and physical conditions of the facility, the physical environment often does play a role in changing the offender; for example, the physical environment may affect rehabilitation in a number of ways. These relate to providing quality space for the classification of inmates: programs such as life-skills training, reading, writing; and delivery of basic services. These environmental impacts may be as simple as the successful operation of food services, or the smooth functioning of recreational and exercise facilities. Even under the pressure of overcrowding, if these basic services are delivered without interruption or slowdown, there are typically few signs of trouble (Atlas, 1982; Farbstein, 1986; McCain, Cox, & Paulus, 1976).

While physical facilities can have an impact on rehabilitation, merely providing a good physical environment does not necessarily ensure rehabilitation. This maneuver may simply contribute to humanitarian reform - by allowing incarceration time to go more smoothly - and result in fewer assaults, suicides, and medical problems. The most that physical facilities can provide is an environment conducive to rehabilitation. For such physical conditions to be translated into rehabilitative reform, the physical

environment, operational philosophy, quality of space, and staffing must all be coordinated for that purpose.

In this chapter, some of the major changes in prison facilities and design will be reviewed, and then this evolution will be related to changes in correctional philosophy.

CHANGE IN PRISON DESIGN: ARE MODERN PRISONS REALLY DIFFERENT FROM THOSE OF THE PAST?

Historically, there have been three basic stages in the evolution of correctional design. These stages are referred to as first-, second-, and third-generation correctional designs and management styles. Since the first generation includes designs and management styles mostly in effect before the last twenty years (that is, the Auburn and Pennsylvania systems), the focus of this chapter will be the second- and third-generation designs and management styles. These two designs have dominated prison architecture during the past two decades.

Second-Generation Facilities (Podular Design with Remote/Indirect Surveillance)

During the early 1970s the National Clearinghouse for Criminal Justice Planning and Architecture, a federally funded organization, was responsible for creating guidelines (NCCJPA, 1971) that incorporated podular housing unit design and remote surveillance in a secure control room. The primary design principle was based on providing centralized services to inmates who required movement and escort. Improvements in classification and technology were reflected in the smaller sized housing units. Program services were brought to dayroom spaces and security glazing was used rather than steel bar fronts, thereby improving visibility for staff. The staff used the improved technology to watch the inmates in the housing pods, but were able to remain safe from assaults. Fixtures, finishes, and furnishings were all designed for maximum security, resulting in a second-generation facility that was austere and designed to resist expected abusive behavior.

The basic operational assumption of second-generation facilities was that inmates would exhibit negative behavior simply because they were inmates. Subsequently, design was based on a premise that barriers should be placed between inmates and correctional staff. Daily activities, such as visitation, counseling, attorney consultation, dining, exercise, and recreation occurred in locations removed from the inmate's living module. This separation of daily activities from the living module necessitated the supervised movement of inmates to a variety of locations within the facility.

According to the second-generation approach, podular housing areas were divided into manageable-sized units of 12 to 24 people. In typical units, single occupancy cells

were clustered around a common dayroom area and a secure control booth from which an officer observed inmate activity. The podular design was based on a restrictive management style, organized to respond to inmate problems rather than to prevent them. Staff had minimal contact with inmates and were only in a position to observe or summon help. Anticipated negative behavior was controlled through security hardware and fixtures. The control of inmates was achieved by surveillance and technological constraints.

The second-generation podular design and remote surveillance model was a significant improvement over the first-generation linear design, intermittent surveillance model. The primary reason for its wide appeal to staff was improved classification potential, with single cell units and the lack of direct contact between employees and inmates. However, the construction costs were high, due to the necessary security hardware. Operational costs were even higher, due to the increased number of staff persons who were required.

Third-Generation Facilities

During the early 1960s, the Federal Bureau of Prisons experimented with classification and management techniques at several federal correctional institutions. The new management style was called functional unit management, which involved decentralizing some inmate services and placing many administrative functions at the housing unit level. A unit manager was responsible for one or two housing units and made all decisions necessary to effectively operate those units. The staff often worked directly within the housing unit, and handled day-to-day inmate problems. Large prison facilities were divided into smaller units that were directed by a series of unit managers, rather than the warden.

The functional unit management concept was expanded in the mid-1970s with the design of three metropolitan correctional centers. These were located in New York, Chicago, and San Diego. The first jail to use the Functional Unit Management concepts within a podular housing unit was in Contra Costa, California, in 1979.

A third generation of architectural management style, known as podular design and direct supervision, evolved from podular design with remote surveillance. Inmate housing was divided into manageable-sized units of 36 to 60 persons with direct supervision. The primary assumption of operation was that a normalized environment would evoke normal behavior. The unit management concept resulted in a concentration of various services close to the inmates, thereby reducing movement between areas and requiring less staff supervision.

In a third-generation facility, a correctional officer works within the living module in a

supervisory role. Officer security is maintained by use of electronic body and telephone alarms. The need for frequent and costly inmate movement can be reduced by providing selected services at each housing unit, such as visitation, attorney consultation, counseling, recreation, dining, and programs. This decentralized planning increases the opportunities for inmate program participation, enhances the relationship between staff and inmates, reduces costs in terms of staff positions, and inhibits violence and vandalism.

The management strategy of the third-generation scheme of podular design is direct supervision. The intent is to prevent negative behavior before it occurs. The podular design/direct supervision model relies on the staff's ability to supervise and interact, rather than structural or technological barriers. A housing unit can hold between 36 and 60 persons and is staffed by one officer who is responsible for minimizing negative behavior and reducing tension. It is critical to the mission of the facility that the administration of a housing unit be intolerant of undesirable inmate behavior. The inmate of a third-generation facility is confronted with two behavioral options: either conform to stated expectations of management or be moved from the general population to the segregation/isolation unit.

While the segregation unit meets all the minimum constitutional standards, it contrasts sharply with the benefits and opportunities present in the general population units. It is therefore in the best interest of the inmate to act in a responsible fashion. A segregation unit is designed using second-generation facility principles: an officer behind a secure control room, austere setting, maximum security equipment, reduced privileges, and restricted movement.

During the day, inmates in the general housing units are allowed to move freely from single or double rooms to a central dayroom, where they can watch television or exercise. Dining may occur in the dayroom. At night, inmates are locked up in their rooms. Barriers do exist between housing units, or pods, and between other pods and the outside world.

Each housing unit has several color TVs, which typically serve fifty inmates. Having several TVs reduces conflict over which program to watch, a frequent source of prison fights. Also, inmates have free access to telephones, which are another source of friction among inmates. Inmates are not transported by officers to separate areas for eating or exercise. Instead, food is brought into the inmate living area to be heated and served. Indoor exercise space is part of the living area of the housing unit. Even laundry can be washed at each housing unit, with inmates held responsible for their own laundry.

Room furnishings consist of noninstitutional commercial grade beds, wood desks, and

porcelain sinks and toilets instead of traditional high-security stainless steel fixtures. Because vandalism is not the norm, fixtures are not usually broken and are considerably cheaper to purchase and replace.

These types of improvements in architectural design can make a positive contribution to the correctional program by improving the facility's operational efficiency. The jail or prison can be efficiently operated by custody staff, and may be built and maintained at a lower cost than second-generation facilities (Harper & Buzinec, 1983). The reduction of manpower in escorting inmates may also reduce staff costs.

In summary, third-generation facility design and operation is based on the premise that if inmates are housed in a normal manner and are treated humanely, they will respond in kind and maintain this atmosphere. Officers are not separated from the inmates, and the furniture and hardware in the facility are commercial grade rather than institutional grade. Operating costs can be less than for first- or second-generation facilities.

There have been numerous changes taking place as prison design has evolved from second to third generation. However, this evolution can take place only as rapidly as new construction is financed. While significant new prison construction took place in the 1950s and early 1960s, new and more humane prison designs were not implemented until the 1970s. Construction programs have accelerated during the 1980s, in response to escalating jail and prison populations and overcrowding.

Because of the profound effect of legal decisions on the design and management of prisons during the 1980s, this decade has been referred to as the "legal era" of prison design. During this period of the prisoner's rights movement and positive changes in prison standards and codes, court decisions and federal and state controls have had the most dramatic effect on jails and prisons since their inception. The most profound changes in operations and architecture have taken place as a result of the development of themes such as "civil death," "innocent until proven guilty," and basic human and prisoner's rights in addition to their implications for conditions of confinement.

The most significant single activity affecting prison operation and architecture during the first half of the 1980s was the development, refinement, and enforcement of standards for operation and construction. During this period, an awareness of the costs for staffing, operating, and constructing jails as part of the overall system of justice, including law enforcement, adjudication, and detention, caused concern among elected public officials and the public. This awakening has, in turn, led to a generation of more focused efforts in planning, developing, and operating existing and new facilities. The physical layout of correctional facilities has progressively evolved from

the linear configurations that dominated the pre-1970s to the podular, from the barrier-intense to the more barrier-free, and from the remote control, indirect supervision to the direct control and direct supervision models of the present.

Improvements in Codes and Standards

While the impact of the change taking place in correctional facility design on rehabilitation can be debated, improvements in humanitarian reform are more obvious. Prior to the re-emergence of an interest in correctional facilities in the 1960s, very few standards existed with regard to barrier security and the operation of confinement facilities. Most building codes addressed issues related to other building types, but ignored confinement facilities. Thus the development of rules was left to the discretion and interpretation of local code officials. With the volume of construction in corrections, as well as the influence of civil-rights court cases focusing on the rights of inmates and their confinement environment, a proliferation of activities relative to codes and standards has taken place since the mid-1960s. Through funding from the Omnibus Crime Bill of 1968, the University of Illinois was awarded a grant to develop guidelines for the programming and design of facilities. The resulting document (NCCJPA, 1971) advanced certain suggestions for the types and sizes of spaces to be used in the development of new prisons. Additionally, during the latter half of the 1970s, the American Correctional Association (ACA), funded by grants from the National Institute of Corrections, developed standards establishing guidelines for physical facilities and operational procedures (American Correctional Association, 1981). These standards are used as a basis for auditing and determining whether applicant and candidate facilities meet established minimum requirements and should be certified or accredited. Concurrently, standards for correctional facilities design and operations have been developed and endorsed by other agencies and organizations, such as the National Sheriff's Association, the American Bar Association, and individual state agencies. A review of these various codes and standards reveals that the majority are similar to the ACA minimum standards. These changes have taken place, in part, because of changes in correctional philosophies.

CORRECTIONAL PHILOSOPHIES AND PRISON DESIGN

Corrections is a systematic and organized effort designed to punish offenders, protect the public from offenders, change offender behavior, and to compensate victims (Snarr & Wolford, 1985). There are basically two views that underline all correctional philosophies: the classical and positivist views. These positions represent opposite views regarding the nature and causes of human behavior, and each has different implications for the physical design of prisons. Before discussing these effects, a brief review of the philosophies is in order.

In the classical view of criminology and penology, the assumption is made that people are rational and logical. This view is premised on the writings of Rousseau (1712-1778), author of **The Social Contract**. Rousseau wrote that an implicit contract exists between citizens and the state, which involves the exchange of some individual freedoms for security and tranquility (Rousseau, 1878/1950).

Cesare Beccaria (1776) applied Rousseau's idea of the social contract to punishment, and thus created what has been termed the classical view. Beccaria viewed citizens as having the free will to choose the pursuit of pleasure and the avoidance of pain. Beccaria called for swift and certain punishment, and was not concerned with the offender's intent. Beccaria was concerned with punishment fitting the crime regardless of age, sex, or mental capacity.

Neoclassicalists believed that children and the insane should be excluded from equal treatment because these people were unable to comprehend the notion of pleasure and pain. Neoclassicalists also supported acceptance of the validity of mitigating circumstances, and admission into court records of expert testimony regarding the degree of responsibility (Fox, 1976).

According to the classical view of corrections, the penalty should be designed to fit the seriousness of the crime committed. Following this principle, the first generation of correctional facilities were the Pennsylvania and Auburn systems. Jeremy Bentham, in 1772, was one of the leaders in reforming criminal law toward the classical view (Bentham, 1967). Based on Bentham's view that man's primary objective of life was hedonistic, to achieve pleasure and avoid pain, John Howard and William Blackstone drafted the Penitentiary Act of 1779 to establish penitentiary houses (Fox, 1976). These houses were to be secure and sanitary structures that had systematic inspection, and would provide a reformatory atmosphere. As a result of developing the penitentiary, punishment could be formalized (Fox, 1976). Exact measures of punishment, in other words, could be dispensed.

Principles of the classical view emerged again in the third-generation facilities, but in a different way. This time the assumption that humans are rational and have the free will to choose from among various types of behaviors was applied to strategies to control inmate behavior while in prison. Currently, the inmate in a third-generation facility has the freedom to live by certain rules and be rewarded for rational behavior. If inmates choose to act negatively, they will be punished with loss of privileges. Third-generation facilities also take into account the neoclassical view of classification and the separation of offenders based on sex, age, length of sentence, and mental health.

By the late 1800s, there was increasing opposition to the classical view. Scholars began to question the basic notions on which the classical view had been based, especially

the assumptions regarding punishment. The positivist view shifted the emphasis to the offender, and rejected the legalities of criminal law. Crime in the positivist view was caused by a variety of biological or hereditary factors, and the legal issue of free will was strongly de-emphasized. The positivist view identified the rehabilitation of the individual offender as the primary goal of corrections.

Cesare Lombroso (1868, 1872) developed the notion of vestigial atavistic traits, which he maintained were inherited. This idea led to the concept of the "born criminal." Lombroso indicated that the positivist typology facilitated the identification of criminal types in terms of biological traits. In this way, he claimed he could identify insane criminals, criminals by passion, and occasional criminals, among others. Lombroso maintained that individuals with recognizable criminal traits had a predisposition to crime and that such persons needed exceptionally favorable social circumstances to avoid criminal behavior (Snarr & Wolford, 1985).

Enrico Ferri (1909) expanded on Lombroso's work and introduced the concept of determinism. Determinists recognize that human behavior is the product of many environmental and cultural factors. This multiple-factor causation theory brought the positivist view into direct conflict with the notion that persons pursue pleasure and avoid pain. Positivists maintain that the punishment should fit the criminal, not the crime, and that sanctions should not be based categorically on predetermined legal mandates. This view led to the need for individualized punishment, or greater discretion in dealing with criminals. The idea of discretion is antithetical to the classical notion of certainty and absolute equality of punishment. The positivist view of corrections supports the expansion of inmate programs and rehabilitative activities.

The positivist view of corrections is seen in all three generations of correctional facility development. The first generation of correctional facilities adopted work as penitence. According to the Pennsylvania System, solitary work was provided in an inmate's cell, while in the Auburn System congregate work was undertaken in silence. The development of bridewells, workhouses, penitentiaries, ship hulks, and prison camps, among other programs, is a direct result of the view that these prison programs, hard work, moral education, and reflection all result in reforming the criminal. The Pennsylvania System administered justice according to the principles of positivism, as a result of individually isolating and reforming criminals. The Auburn System was less interested in the individual and focused on group benefit. All of the first-generation facilities were designed on the positivist assumption that inmates are not responsible for their actions. These facilities reflected this view with large walls, foreboding construction and details, and a primary emphasis on security.

While classification, testing, and screening procedures improved in the 1950s through the 1970s, the positivist concept of determinism was expressed in the second generation of correctional facilities, which emphasized podular design and remote

surveillance. Second-generation facilities have small, classified housing units to separate offenders by age, sex, crime, length of sentence, and aggressiveness. All housing units are designed for maximum security because of the expectation of irrational behavior. Because inmates are viewed as dangerous and irrational, staff persons are positioned behind barriers to avoid direct contact with prisoners.

One of the goals of positivism was the treatment or rehabilitation of offenders, thus reducing or preventing future criminal behavior. The positivist shift was toward individualized punishment and treatment based on offender characteristics as well as the crime that was committed. Third-generation facilities embraced many of the tenets of the classical school regarding free will, choice, and rational behavior, in addition to several positivist concepts. Many third-generation correctional facilities have extensive classification and/orientation programs to place inmates in a variety of programs. One of the benefits of the "podular design with direct supervision" concept is individualized administration of incarceration through the use of single cells, direct contact with staff, and token economy, where inmates determine their own level of program participation. If inmates act negatively, they are isolated and given more intensive supervision and fewer privileges. Third-generation facilities encourage the reformation and development of inmates by allowing them to earn their way from maximum security units to minimum security, and by providing many levels of housing, programs, and staff interaction and supervision.

ARE NEW DESIGNS ANY BETTER?

At this juncture, some of the basic objectives of prison architecture should be reviewed, in order to understand whether any of the new designs have been productive. Prison and jail architecture has four objectives: (1) facilitating the administration of court-ordered sentences; (2) expediting the preparation of inmates for return to the community; (3) improving the delivery of services; and (4) ensuring that prisoners are detained in a constitutionally appropriate manner. In short, facilitating the care of inmates becomes the prime objective for correctional architecture. Facilities should provide for basic human needs, offer self-improvement opportunities, and expedite the application of justice, while protecting the right of due process.

Although the safe and secure care of inmates is the prime objective of correctional architecture, architects often contribute to prison problems. These planners often do not understand inmate characteristics and their needs, and, therefore, design facilities on the basis of information from a third party on some general impressions of inmates. They often lack adequate or accurate feedback on the intended or actual performances of buildings, and perpetuate a system that is ineffective or counterproductive to correctional goals. Even when an architect is enlightened concerning advanced practices in correctional design, law enforcement and prison

administrators regularly resist change and insist on outdated and antiquated designs.

The "hard" architecture that resulted from the philosophy of punishment, retribution, and incarceration produced environments that institutionalize both inmates and staff. In hard architecture there is a lack of permeability, alterations and construction are expensive, a clear differentiation is made between status levels, passive adjustment is required, psychological withdrawal is encouraged, depersonalization and formalized security are essential, and the materials and furnishings are selected for ease of purchasing, maintenance, durability, and uniformity. Hard architecture contributes to the process of prison isolation, known as institutionalization. Institutionalization includes the following components: deindividualization, or the reduced capacity for independent thought or action; disculturalization that accompanies the process of acquiring institutional values; psychological and physical damage resulting from always feeling endangered or being on guard against assaults; estrangement, or the feeling of being isolated from society and social change and not having the practical skills necessary for legal defense; isolation that results from a loss of contact with friends, family, and community; and stimulus deprivation, because contact is denied with healthy and normal people (Sommers, 1976).

The Walnut Street Jail served as the prototype for first-generation construction in the early 19th-century, with its theme of penitence and reformation (Johnson, 1974). The development of second- and third-generation facilities was based on a new philosophy of design and management that focused upon the classification of inmates. The simplicity of 19th-century custodial facilities was no longer adequate to accommodate the requirements of inmate classification and program development. Facilities developed classification needs, and evolved from the linear format of the Pennsylvania/Auburn plan to the telephone-pole plan, the interior court plan, the campus plan, and to podular design. The old philosophy of custody has evolved to programmed security and treatment. New facilities are designed for positive interactions, not simply surveillance. Detention used to be the sole purpose of correctional facilities, but today the best facilities reflect a balance between physical control and creating opportunities for interaction.

In spite of the obvious progress in design, modern prisons share many of the problems of prisons of the past and have some new problems as well. Modern prisons can be erected faster, and have the advantage of modern technology to assist in the operation and security of the institution. However, modern prisons still are overcrowded, underfunded and understaffed. Modern prisons have come to rely on technology to reduce manpower and increase efficiency, yet this change in hardware has had only marginal results. The staff persons taken from the guard towers have now been placed in control rooms watching dozens of TV monitors, opening electric doors, and operating intercoms and many other devices. A control room that in the 1950s might have taken one officer to operate now requires three.

Clearly, the greatest problem facing correctional institutions today is overcrowding (Latessa & Oldendich, 1988). As a result, the focus of new construction, renovations, and conversions has been the alleviation of overcrowding, not the utilization or development of technology. A recent study conducted by the University of Cincinnati (Latessa & Oldendich, 1988) evaluated 105 correctional facilities and 12 large jails built within the past ten years. The evaluation revealed insight into how effectively new technology is being utilized. The key findings of this study are discouraging. While the impact of new technology has been generally positive, changes in technology have not produced major changes in staff size, staff compositions, or in the operation of institutions. Technology can help well-run and well-managed prisons operate more efficiently, but it will not solve the problems of poorly run facilities. Before sophisticated technology will improve prison life, planning and evaluation will have to be upgraded.

Future Change

Correctional philosophies and the functions of facilities are in a continual state of change, with the exception of the basic mission of confinement. This process of change can be expected to continue. The movement for increased civil rights of inmates has brought a new consciousness to the public, and to the administrators who are responsible for providing and operating facilities. Philosophies may differ with respect to various segments of the public, geographical regions, and the size of facilities. But within these parameters, changes will continue with regard to the living environment, levels of security, and physical appearance. The trend has been to emphasize open and normal living conditions. By all reasonable estimates, this policy should continue.

A fourth generation of correctional facilities is starting to unfold. As direct-supervision podular designs are time-tested at numerous facilities, improvements and modifications will occur. Direct supervision has been used successfully in dormitories and other building environments not originally designed for this mode of control. Despite overcrowding and physical limitations, direct supervision has worked successfully. The next generation of correctional facilities will house more inmates per housing pod. Direct supervision units are now proposed that will hold 64 to 100 inmates. Another feature of the fourth-generation designs that is a major departure from earlier designs are cells without sinks and toilets. Toilets and sinks can be centrally provided; the logic for this feature is to more closely replicate normal living conditions. Most homes do not have toilets in the bedrooms: people walk to the bathroom as needed. Inmates will be able to do the same. If a lockdown is needed, the inmates can wait the brief time necessary for a head count to be finished.

Furthermore, natural light and ventilation are being designed to be more normal. If a

jail or prison has a double-perimeter fence with electronic detection, exterior windows can be installed with nonsecurity windows. Personal control over living environments is one of the main behavioral tools that makes direct supervision effective. For many years, the shape of prisons and jails was dictated by the need for light to pass through exterior windows. A typical security window, which is five inches wide and forty inches long, has only two or three square feet of lighting surface. The fourth-generation facilities will use light-wells in dayrooms, with interior windows in cells. Inside windows typically provide 17 square feet of window space and allow more light to enter cells. The advantage of inner windows is that cells do not have to be exterior oriented and can be stacked back to back. Both space and money can be saved by this maneuver.

Fixtures in future correctional facilities for general population inmates will be commercial grade. Doors may be wooden, but will have electronic locks to secure cells during a head count. Wall construction between cells would not need to use reinforced concrete. Administrative services can be located outside the security perimeter to permit easy access to public functions. Future facilities will provide more complete services for staff in the form of weight rooms, mess halls, and better quality training spaces. The emphasis within the facility will be on academic and vocational programs. The computerization of data, video court arraignments, and inmate video-information networks represent developments that will be available in the near future.

The use of more sophisticated electronic aids, such as closed circuit television, personal staff alarm systems, and dual-technology perimeter security systems, will allow the general appearance of the physical facility to be softened without sacrificing security. Such advancements in technology will need to be balanced with staff requirements and the characteristics of the physical facility, so that architects can create environments that will be perceived as residential in character.

Electronic technology enhances the security of facilities, yet allows more contact and communication between staff and inmate populations. Perimeter security, in terms of identification capabilities and barrier lines, may in the future assume the form of laser fields that will replace more conventional methods of fencing used in the 1980s.

The continuing development of vision panels composed of plastics or glass are reducing the hard physical barriers of steel grating that were commonplace ten years ago. New technology in locking systems and the control of these systems using metal keys, plastic keys, various biometric systems such as fingerprint or retinal eye identification, and bar coding will be used more exclusively as time goes on.

The identification and location of inmates via electronic methods, such as ankle or wristband sensors, may in the future allow certain inmates to reside in their home

settings, thus avoiding detention or holding in a jail facility. In the future, the corrections facilities in the United States will be used to confine more sophisticated inmates requiring higher levels of security. Activities of terrorists will bring another generation of security requirements and philosophies to the jail and detention facility. With the concern of intrusion security coupled with containment security, philosophies will undoubtedly undergo extensive revision.

Change in correctional design and management is generally slow and costly. Prisons and jails are designed to last decades and do not lend themselves easily to change. They reflect the management and design philosophies prevalent at the time they were built. As a result, there is usually a lag between changing philosophies, new technology, and the facilities that are in operation at any time. In spite of this, there have been major advances in the field of correctional design and operation since the 18th century, and many significant changes have occurred in the last twenty years.

REFERENCES

American Correctional Association. (1981, January). **Standards for adult correctional institutions**. Commission on Accreditation for Corrections. College Park, MD.

Atlas, R. (1982). Violence in prison: Architectural determinism (Doctoral dissertation, Florida State University, 1982). Dissertation Abstracts International, 43, 933A.

Beccaria, C. (1977). **On crimes and punishments**. Indianapolis: Bobbs-Merrill.

Bentham, J. (1967). **A fragment on government and an introduction to the principals of morals and legislation**. (W. Harrison, Ed.). Oxford: Basil Blackwell.

Farbstein, J. (1986). **Correctional facility planning and design**. (2nd ed.). New York: Van, Nostrand Reinhold.

Ferri, E. (1909). **Criminal sociology**. New York: Appleton.

Ferri, E. (1878). **The theory of input ability and denim of free will**. New York: Appleton.

Fox, V. (1976). **Introduction to criminology**. Englewood Cliffs, NJ: Prentice-Hall

Harper, D., & Buzinec, P. (1983). **Comparative analysis of design schemes**. Dade County, FL: Metro-Dade General Services Administration.

Johnson, E. H. (1974). **Crime, correction, and society**. Homewood, IL: Dorsey.

Latessa, E., & Oldendich, B. (1988, July). **Impact of technology on adult correctional institutions**. National Institute of Corrections.

Lombroso, C. (1968). **Crime, its causes and remedies**. Montclair, NJ: Patterson Smith.

Lombroso, C. (1972). **Criminal men according to the classification of Cesare Lombroso**. Montclair, NJ: Paterson Smith.

Morris, N., & Jacobs, I. (1974). **Proposals for prison reform**. Public Affairs Committee.

McCain, G., Cox, V. C., & Paulus, P. B. (1976). The relationship between illness complaints and degree of crowding in a prison environment. **Environment and Behavior, 8**, 283-290.

National Clearinghouse for Criminal Justice Planning and Architecture (NCCJPA). (1971). **Guidelines for the planning and design of regional and community correctional centers for adults**. Urbana: University of Illinois.

Rousseau, J.-J. (1950). **The social contract and discourse**. (G. D. H. Cole, Trans.). New York: Dutton. (Original work published 1878)

Snarr, R., & Wolford, B. (1985). **Introduction to corrections**. Dubuque, IA: William C Brown.

Sommers, R. (1976). **Tight spaces, hard architecture**. New York: Prentice-Hall.