CHAPTER - 03
HUMAN FACTORS IN JAIL DESIGN

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3.0. Human factors in jail design

The jail environment – its location, surroundings, layout and design – has very significant effects on the people who use this highly specialized facility. The purpose of this chapter is to discuss some of the many ways in which the physical environment of the jail may affect the behaviour, attitudes, or feelings of its users. Much of this is opinion based on experience, common sense, or speculation. Where opinion has been codified, it becomes a guideline; where it has statutory power, a standard. Outside the realm of opinion, some of our knowledge is based on empirical research done in jails or other correctional environments. Although only perhaps thirty such studies have been done to date, this chapter reviews the results of this research in the hope that it may have some influence on decisions about jail design.

The concept that correctional design has effects on behaviour is far from new. For example, the eighteenth-century "panoptican" plan of Jeremy Bentham manipulated the environment for behavioural ends, that is, to separate inmates while allowing supervision from a central point. What is new is that now scientists and designers are beginning to visit buildings and measure the relationships between environment and behaviour – the impact of jail design on the users.

The main factors that distinguish categories of users are: their situation, role, or amount of time involved in the facility; their degree of control over their situation; their attitudes, expectations, and objectives; and their socio-economic status.
The inmates are the first and obvious but highly diverse grouping. To understand inmate needs and behaviour, it is necessary to understand their situations – since this governs their relationship to the jail environment. One of the most stressful times for a detainee is usually intake, as this is his or her first contact with the jail system (especially for a first-time offender). At intake the main concerns are the uncertainty of one’s status and what will happen in this environment. Information, human contact, the appearance of the facility, and a view of the interior spaces can all be reassuring (Farbstein 1978).

3.1. Noise

Noise is one of the jail environment’s most persistent problems, even plaguing the new “soft” jails (Wener and Clark 1977). Noise is, simply, unwanted sound. In the presence of this unwanted sound, communication becomes difficult, conversations take place at a shout, sleep is often disturbed, and stress and discomfort are experienced (Gersten n.d.). A study of the prison environment (Moore 1985) found that noise, along with other invasions of privacy, resulted in increased use of health services by inmates.

Two major factors are at issue here. One is the source of noise. In many jails, the clang of metal on metal is common. Multiple conversations, radios, and televisions in the same space create an indeterminate, disorienting, and very high level of sound. Unexpected or unpredictable noise can be even more disturbing than a constant high level. The second factor is the hard, reflective quality of most jail building materials. Softer more absorbent materials that could reduce sound levels are virtually unused.
Proposed standards distinguish between acceptable daytime sound levels of about 70 decibels or less, based on normal conversation (85 decibels requires shouting) and acceptable night time sound levels of about 45 decibels, based on sleep interference noise levels (Nebraska State Bar Association 1977, pp. 61-62).

Recommendations for reducing noise levels include: isolating or dispersing audio systems, utilizing sound-absorbing materials such as carpet or acoustic tiles, and limiting metal-on-metal contacts of structure, equipment, or furnishings.

3.2. Thermal Comfort

Thermal comfort – or discomfort – represents a complex of psycho physiological responses to conditions in the physical environment. These include temperature, humidity, and air movement, which in their turn result from a combination of outdoor climatic conditions, heat flow through the building structure, and the tempering effects of the building’s mechanical systems.

In general, thermal discomfort is very common, especially inside closed institutions. Inmates and staff frequently find conditions too hot, cold, drafty, or stuffy (Goldblatt 1972; Wener and Clark 1977). Though not documented for prisons, irritability undoubtedly increases with thermal discomfort, making aggressive behaviour more likely – especially when it is too hot.
Jail buildings are frequently complex structures, with their spaces varying greatly in volume, exterior exposure, and occupant load. Such complexity increases the difficulty of mechanical system design. The jail building affects communications and social relationships: the jail's social environment.

3.3 The Social Environment

The ability to control one's sensory environment is closely linked with the ability to control one's social environment. In general, being in jail significantly reduces this control. However, specific physical arrangements of the jail environment have considerable effects on communications, privacy, territoriality and crowding.

The physical size, shape, and location of an area affect visual surveillance, since this depends on the ability of staff to see into certain inmate spaces. Research in correctional settings has shown that physical design can affect the probability of positive or negative interactions taking place.

A study of various youth facilities found that the location of circulation routes and staff or control areas affected the frequency of staff-resident interactions. Informal outdoor spaces were also found to encourage informal personal interactions (McReynolds 1972; McReynolds and Palys 1975).

Locating staff in residential units – so called direct supervision also increases contacts with residents. The planners of the MCCs consciously eliminated the staff station from residential units so that
staff would circulate among inmates. Direct supervision increases the ability of staff to control the jail through immediate interaction with the inmates (Frazier 1985). And, because it is more challenging than working in a remotely located control booth it may also increase staff professionalism (Nelson 1983).

3.4 Territoriality;

When a certain physical area is identified with or controlled by an individual or group, territoriality is in operation. On an individual level, inmates have been found to sense an intrusion into their personal territory when it is entered by others, especially strangers. The size of this zone is much larger in violent inmates.

In any case, the issue of personal territory has implications for sleeping and dayroom design, as size and layout affect distance and direction of approach. On a group level, it is common in correctional settings for ethnic or other groups to habitually occupy – perhaps "take over" – certain areas. The reason for this may be that defined territorial boundaries clarify and control contact between groups, which in turn reduces tension, although it also increases ethnic polarization. In a study of territories in a youth training school, it was found that a change in furniture arrangement in a dayroom increased positive interracial contact.
3.5 Crowding, Privacy and Stress;

Stress in jail comes from many sources, including uncertainty about the future and exposure to danger, as well as from aspects of the housing environment such as crowding or lack of privacy. The effects of stress include elevated blood pressure, more frequent illness, an increase in sick call rates, as well as greater anger, assaultiveness, and violence.

Privacy is commonly defined as the ability to control one's immediate surroundings and to regulate one's interpersonal contacts. To do this one must be able to control physical, visual, and auditory separation. This does not imply isolation but rather solitude, intimacy, anonymity, or reserve. At a given time, an individual may want more or less interaction, depending on situation and cultural background. The manipulation of distance or barriers in the environment is only one mechanism for achieving privacy, but in jail it is a critical one. A barred cell provides physical separation but little visual or auditory isolation. In a dormitory, none of these separations is possible.

Lack of opportunities for privacy increases stress. Moore found that the cells in a Michigan prison that were more open and exposed generated higher utilization rates for health services, an indirect measure of stress. Similarly, a private room – when available – is often used by inmates as a retreat from stressful situations (Fleising 1973). As for bathroom use, the inability to achieve socially accepted norms of privacy for bodily functions contributes to dehumanisation.

Privacy is closely related to crowding, which describes high levels of density. There is much evidence from research in correctional settings
that increased spatial and social density cause numerous negative effects. Briefly, social density refers to the number of people who share a unit of the environment (lowest for single cells, highest for dormitories – especially large ones) and spatial density refers to the average amount of space that each person has.

Inmates themselves respond very differently to single rooms than they do to dormitories. Responses at the New York MCC showed that far more inmates in dormitories than in single rooms felt that privacy and space were insufficient and that conditions were crowded. The total population density was reduced only about 15 percent, perceived crowding and sick call rates were significantly reduced.

3.6 Solutions Found;

In the most comprehensive study of the health and stress impacts of different housing densities, McCain, Cox and Paulus were able to compare types of housing units. Their findings range from suggestive to rather conclusive and are summarized below.

Singles versus Doubles. Double cells or cubicles were found to have measurably greater negative effects than single-occupancy housing. Differences were observed in illness complaint rates, perceived crowding, and non-violent disciplinary infractions, among other variables. The authors warn, however, that these findings are open to other interpretations since the doubles provided consistently less space than the singles.
Singles versus Small Multiple-Occupant Units (three to six persons) Illness complaints, perceived crowding and other negative measures increased as the number of inmates increased. Here, it is primarily the social density that varied, with space per person actually greater for some of the multiple occupancy cells.

Singles versus Open Dorms. The authors assert that “if there is any one set of findings from this project or earlier work that seems beyond serious questions, it is that dormitories have more negative consequences than one man units”. The dorms performed worse with illness complaints, perceived crowding, and other negative factors. Findings were consistent for all races, ethnic groups, security levels, program assignments, and lengths of time in the institution.

Doubles versus Dormitories. Dormitories were found to have more negative impacts than double cells or rooms.

Open versus Segmented Dorms. When dormitories were subdivided into bays with ten to twenty inmates, less negative effects were found compared to the open arrangement.

Cubicles versus Rooms. Generally, in terms of reducing stress, partitioning the inmate sleeping area within a dorm into cubicles can be almost as effective as providing a single cell. The more the cubicle resembles a single room (higher partitions, storage, desk space), the more it duplicates the positive effects of the room.

Cubicles versus Open Dorms. As expected, dorms with cubicles perform much better than those without them. “Cubicles .... represent
an inexpensive means of affording privacy in otherwise open dormitories”.

In another study, d’Atri (1981) found that inmates in dorms perceived guards more negatively than those in other housing units. He also found that as the number of people housed in the same living unit increases, so do their blood pressure and stress levels.

Ray, Huntington, and Wanderman (1979) found a direct relationship between density and anger. The threshold at which it occurs is not established, but it may be that inmates in multiple cells who have 35 to 50 square feet each may become more angry than if they are in single cells with 70 square feet each.

Thornberry et al. (1982), in a review of the literature, also reported more violence, sexual assaults, contraband, and medical emergencies in double bunked cells than in single cells. It is unclear whether these differences are attributable to the amount of space, the number of people, or both.

All of this research suggests that more stress, anger and assaultiveness are associated with multiple cells and dorms. Interestingly, the use of cubicles (or partitions) within dorms appears to mitigate some of their otherwise negative effects (McCain, Cox, and Paulus 1980).
3.7 Reducing Stress in Jail

Recent Design Characteristics; positive inmate and staff attitudes were definitely achieved by the normalized environment. Both inmates and staff clearly perceived their environment to be more attractive and less institutional than in traditional facilities. Inmates were more active, felt there was less violence and vandalism, and had a more favourable attitudes toward the institution.

Design techniques for achieving a more normal environment include using natural light and offering views; the use of bright, stimulating colours, textured materials such as wood, tile, brick, and carpet; limiting the size and volume of spaces; and providing spatial variety. These methods are combined with other details (appropriate to the level of security), such as doors in place of grill gates, non-institutional furniture and security glazing in place of bars. They result in facilities that are secure, yet humane in appearance.

Elements that impart "human scale" or a normalized physical environment. These include the use of bright colours, graphics or materials such as brick and wood where appropriate. Large, undifferentiated spaces are avoided; areas are tailored to specific uses.

Unobtrusive surveillance/observation of inmates. Living and activity areas, for example, are arranged so that they may be observed easily from a central point rather than encircling them with guard walks. Facilities can accommodate inmate movement without constant escort. There is judicious use of closed – circuit television monitoring.
 Preference for single – occupancy cells. Single occupancy cells are frequently preferred because they allow inmate privacy and protection and may help to diminish tension (Farbstein & Associates 1983). They are not intended as forced segregation. Many standards require seventy square feet in single occupancy cells.

Incorporation of program areas into residential units. These provide inmates with somewhat more internal freedom of movement without escort than in earlier designs, make program areas more accessible, and provide opportunities for correctional staff to offer programs such as counselling, education or job training.

Greater overall building area. Space provided per inmate ranges from 350 to 450 gross square feet. The increase over past practices results from the inclusion of single cells and additional program and service elements. Most of the last are required by the changing role of the jail as it becomes more service oriented and not merely a place for detention.

Sensitivity to the context of community and environs. The contemporary jail attempts to reduce barriers to community acceptance and participation. It is designed to conform to the scale and appearance of its surrounding areas without compromising the need for security. Its goal is to project an appropriate image for a detention facility while being a good neighbour to the community.

3.7.1 Direct Supervision Design

Direct supervision places the correctional officer's station within the inmate living area, or "pod" as it is often called. This is shown in
DIRECT SUPERVISION DESIGN

Continuous observation is provided in two types of design, direct and indirect supervision. Direct supervision places the correctional officer's station within the inmate living area, or "pod" as it is often called. This is shown in Exhibit 1.

Exhibit 1. Direct Supervision in a Medium Custody Housing Unit

INDIRECT SUPERVISION DESIGN

Indirect supervision, sometimes called "remote surveillance," also provides continuous observation of inmates. The layout of the inmate living area is similar to that of direct supervision. The design is "indirect" in that the officer's station is separated from the inmate living area.

Exhibit 2. Indirect Supervision Housing Unit
Exhibit 1. In this picture the officer is shown standing before an in-pod control station. By placing the officer in the pod he or she has immediate visual observation of inmates and unrestrained ability to receive information from and speak to inmates. During the day, inmates stay in the open area (dayroom) and are not usually permitted to go into their rooms except with permission and must quickly return. The officer controls door locks to cells from the control panel. Functions of this panel can be switched to a panel at a remote location, usually known as "central control", when the officer leaves the station for an extended time. The officer also is wearing a small radio on his shirt-front that permits immediate communication with the jail's central control centre if the need should arise. In addition, the dayroom area is covered by a video camera that is also monitored in the central control room.

By placing the officer in the pod, there is an increased awareness of the behaviours and needs of the inmates. This results in creating a safer environment for both staff and inmates. Since interaction between inmates is constantly and closely monitored, dissension can be quickly detected before it escalates. Inmates who show signs of becoming unruly also can be quickly identified and removed to a more secure living unit/pod. In addition, maintenance costs are lower in direct supervision pods because the close supervision reduces misuse and harm to equipment, furnishings and walls. The stress on officers and inmates alike is greatly reduced. From a liability standpoint, the jail and country's liability will be reduced as a result of less litigation arising from unobserved behaviour, eg. suicide, fights, sexual assaults, accidents, and unexpected medical emergencies.
In summary, direct supervision involves three important aspects. First, the inmates are aware that they are being constantly supervised. Second, they are aware that if they create problems they will be quickly removed to a higher custody pod having fewer privileges, such as ability to come out of their cells. Third, they are aware that the officer is backed up by a personal radio alarm system and video monitoring.

Direct supervision design is most relevant to the housing of medium and minimum supervision inmates. These are inmates who are not considered to be violent or disruptive in the jail environment. This design is not usually employed for the supervision of maximum custody inmates.

### 3.7.2 Indirect Supervision Design

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The officer's station is inside a secure room. Observation is enabled through protective windows in front of the console/desk. A microphone, long black tube, is visible in front of the right portion of the console. Microphones and speakers inside the living unit permit the officer to hear and communicate with inmates.
An indirect supervision pod, when used for medium and minimum custody inmates, is similar in design and size to direct supervision pods. However, indirect supervision in a maximum supervision pod usually involves a smaller housing area. In a maximum pod, inmates are not permitted to congregate in an open dayroom, but must spend most of their time in their cells and are out individually to exercise. For this reason maximum cells are usually larger and require more durable hardware, doors, and fixtures.

Sometimes the indirect design is arranged so that an officer can observe and control two or more adjacent pods. The adjacent pods are configured so that the officer can see into them but the inmates have no visual or auditory access between pods.

Linear design, also known as "intermittent surveillance design", does not provide continuous observation. The design is similar in concept to that of a hospital in which long rows of rooms are placed along a corridor. A common variation is to situate housing units, instead of individual cells, along the corridor. Exhibit 3 shows such a linear design found in an older jail.

The jail officer, barely visible at the back of the corridor, must patrol the hall and look through windows to observe each housing unit. A set of narrow observation windows for one of the housing units and the entry door, also containing a window while walking the corridor the officer may look into a unit or enter as part of the surveillance. Sounds from within the units are muffled by the closed doors and are not readily heard in the hallway.

This design introduces an element of high risk into the management of inmates because interpersonal problems between inmates is most
LINEAR DESIGN

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Exhibit 3. Linear Positioning of Housing Units

DORMITORIES

Exhibit 4. A Large Dormitory Before Being Furnished
3.7.3 Dormitories

A dormitory is different from the designs described previously. New jails will usually have fewer dormitories than medium and maximum pods. However, their applicability is limited to the housing of minimum custody inmates, such as trusties and persons on work release.

The term, "dormitory", usually implies a different style of housing than a pod. As might be expected a dormitory is a large room into which a number of single or bunk beds are placed. However, instances can be found in which the term, "dormitory", is applied to rooms in a podular - design housing unit that have been configured to accommodate four to eight beds. Exhibit 4 shows a new, unfurnished dormitory that will contain 24 beds.

Management of inmates in a dormitory can be accomplished by either direct or indirect supervision. In the dormitory the layout is a modified direct indirect supervision design. Two dorms are situated across a hallway from each other. Observation into the dorms is through a window shown at the right rear of the picture. Next to the window is a doorway. A open officer's station (not enclosed as in an indirect supervision pod) is placed so that an officer can view both dorms and have immediate access through the doorways. In this particular layout the officer's station is located at the end of the hall so that no one will be approaching from the back of the station. This design is feasible because the lower custody level of inmates reduces the need to place
an officer in the living area or to enclose the external observation station.

Inmates are most likely to occur when staff is not present. Thus, problems cannot be detected early and prevented from escalating. Video surveillance cannot make up for the problems arising from this type of design. Due to the intermittent nature of staff supervision, inmates are essentially in control of the living area. Studies show that the linear design is associated with an increased frequency of contraband, coercion of inmates by other inmates, assault, rape, suicide and even homicide. A drawback of this design is that, in practice, the jail officer may not patrol constantly.

3.7.4. The Hard Exterior, Soft Interior

One way of countering that has been to dress up the structures, making them look like other, more palatable facilities such as hotels or civic buildings. But that raises hotly debated question: Just how nice should a prison or jail be? Those who see most criminals as incorrigible or deserving of the most severe punishment have become vocal in their opposition to any frills being added to prisons or jails. That point of view, if not always shared by correctional officers, has certainly affected their decisions. Prison officials, says one architect, will often “object to exterior ornamentation as being too good for the prisoners and possibly creating an image problem with the community and with inmates in other facilities”. Except for those located in sensitive areas, many prisons are jails, as a result, have relatively plain, functionalist exteriors, sending the politically popular message
that these are efficient, well-run facilities which, despite their costliness, do not waste taxpayers' money.

If exteriors of many correctional facilities appease those who would have us get tough on crime, the interiors convey a much different message, highlighting our ambivalence toward criminals.

The trend on the interiors, says architect and researcher Jay Farbstein, has been to "eliminate the symbols of incarceration" such as bars on the windows and doors or row upon anonymous row of cells in multi-story blocks. "Making prison interiors appear more normal," he adds, "has produced better behaviour from inmates" and seems to reinforce the idea that criminals can be reformed.
New technology introduced into prisons and jails over the last 20 years has certainly helped in this process. "The replacement of bars, notes Farbstein, "with glazing containing polycarbonate and glass has brought a real improvement" not only in the living conditions of inmates, but in the guards' ability to survey a room. Farbstein also praises the use of electronic security devices, which have replaced that ultimate symbol of incarceration - the lock and key - and the development of smoke - and fire - resistant. Fibers and textiles, which
have softened dayroom interiors with carpets and upholstered furniture. Another improvement in living conditions has come with the installation of more durable, tamper-resistant toilet and lighting fixtures - their stainless steel housings, rounded corners, and concealed fasteners minimizing opportunities for vandalism.

Modern penal policies are based on the belief that the great majority of prisoners can be rehabilitated by correctional treatment, so that they can regain their place as full members of society. In England and Wales, this is expressed in rule 6 of the prison rules made under the Criminal Justice Act, 1948, which reads:

"The purpose of training and treatment of convicted prisoners shall be established in them the will to lead a good and useful life on discharge, and to fit them to do so". What we can attempt to do is to discuss in outline, the physical setting which would be most appropriate for the carrying out of the new penal practices.
3.7.5. Size of Institution

In respect of size there has in recent decades been a remarkable divergence of opinion. In the United States, reformers have struggled against a tendency to increase the size of new maximum-security establishments. New federal institutions of this kind may have a prison population of over 2000 and certain state penitentiaries may have even more. For example, the panopticon State Penitentiary at Stateville, Illinois, and the associated Joliet State Prison, have room for 4600 inmates and the Michigan State Prison at Jackson actually holds 5800.
In England and Wales; it has been officially stated that the largest existing prisons might also be broken down by sub-division into units of a more manageable size. Hugh Klare suggests that the optimum number may be 150 to 200 on the grounds. Whatever the ideal size may be, one may agree with H. Jones that we ought to think in terms of a large number of small prisons rather than a small number of large ones.
Fig. 17
Lighted interior of the central lobby

Fig. 18
Furnished smooth interior
Fig. 19
Furnished smooth interior

Fig. 20a
Non monolithic nature of the modern prison
3.7.6. Sleeping Accommodation

It has been explained that the cellular system was in many ways a progressive step when it was first introduced, because the accommodation that it replaced was bound to lead to every kind of moral and social contamination. But whereas the Auburn cell, being designed for sleeping only, had in the first examples been painfully small (7’ x 3’6” x 7’ high), the cells in the Eastern Penitentiary at Philadelphia were extravagantly large (11’9” x 7’6” x 16’ high), being designed for working in as well as sleeping. As has been shown, British prison architecture closely followed the lead of the Eastern Penitentiary, and the cells were correspondingly large, being standardized at 13’ x 7’ x 9’ high. The floor area of these cells is thus even a little larger than at Philadelphia, and space is saved only by the fact that room heights are much more modest. There was space in such cells for a large loom as well as for a hammock, so that - apart from sanitary arrangements - each cell was physically self-contained for a regime of solitary confinement.

The strict enforcement of solitary confinement was soon relaxed. In England have been re-designed; the typical cell at Everthorpe Hall is 10’ x 7’ x 7’6” high, and a more economical cell of about 8’6” x 8’3” x 7’6” high has since been developed. But this architectural tidying up is possibly being overtaken by events. While it was a step forward to replace the undiscriminating congregate prisons, it is now being questioned whether it would not be better to return to dormitory accommodation. After all, now that prisoners in the more progressive institutions are being encouraged to consort freely in groups for work and leisure, is it not a little artificial to herd them back into locked cells at night?
In Grunhut's words: "Separation ought not to be a depressive solitude, but a natural way to gain a true insight into the prisoner's individuality, unhampered by his bad social habits. As long as deprivation of liberty remains a legal punishment, separate confinement, while no longer the normal form, will still be needed to some extent for untried prisoners, for very short terms, for an initial test period, or as a disciplinary or security measure. Apart from the exceptionally refractory, for whom the use of cellular confinement may be required, it will be observed that all the other uses for which Grunhut suggests the single cell are related to diagnosis rather than treatment.

It would be relatively easy to build partitions in open rooms, so that each man had his own small cubicle while also being able to enjoy the common facilities. If it is too difficult to control homosexuality under these conditions, it has been suggested as an alternative that there should be provision of both dormitories and individual rooms were encouraged to embellish and humanize their rooms. In progressive prisons this is becoming normal, and even old cells are decorated by their inmates as far as the grim surroundings permit. At the same time, there is a gradual attempt to eliminate, or at least to conceal, the more fortress-like characteristics of these structures. Windows are growing larger; the manganese steel bars are being incorporated as glazing bars, and there is even a move to substitute unbreakable glass. "The sanitary arrangements shall be adequate to enable every prisoner to comply with the needs of nature when necessary and in a clean and decent manner".

On the other hand, the use of dormitory accommodation would solve the sanitary problem by giving the prisoner access at all times to
sanitary accommodation within the section. This improvement has already been introduced in a remodelling at Lancaster, England. Work in solitary confinement was found to be unremunerative, and the extremes of the alternative silent system were also modified in the interests of productive efficiency. More recently, it has been suggested that it is possible to use the training facilities available in prison to fit inmates for useful jobs on discharge.

A large number of studies have suggested that prison conditions, and particularly inmate overcrowding, can produce stress for inmates. "presence of other residents, low space per person, double-bunking and lack of privacy" seem to lead to more frequent suicides, nonviolent and violent deaths, psychiatric commitments, inmate-on-inmate assaults, disciplinary infractions, self-mutilation, illness-complaints and high blood pressure (COX, PAULUS and McCAIN, 1984). Other studies have found that living in group situations such as dormitories, as opposed to living in single cells, is related to increases in physiological measures of stress such as palmar sweat, pulse rate and systolic and diastolic blood pressure (D'ATRI, 1975; D'ATRI et al., 1981). Several studies have also shown that crowded conditions result in inmates reporting that they feel stressed and in less control of their situations (see, for example, RUBACK and CARR, 1984).

The relative importance of social density (number of people per room) and spatial density (area per person) has been hotly debated. Several early studies showed that social density seemed to be more important in predicting stress. One study reduced perceived stress by constructing individual modules within a large day hall, even though group size and area per person were not reduced. Other studies,
however, have found that area per person is a more important predictor of stress.

In addition, some researchers have looked at global differences in the physical setting. For instance, Wener and Olson (1980) observed three new federal direct supervision detention facilities and conducted interviews and distributed questionnaires. These high rise facilities were the first direct supervision facilities in the US and used “soft” materials and finishes such as carpeting and colourful painted walls. The researches found low levels of stress, violence and vandalism. Both staff and inmates were satisfied with the facility, but, contrary to some critics who said that the facilities were “too nice”, emphasized that the centers were still punitive because they restrict freedom. Another positive consequence was less reported stress by officers, potentially leading to less sick leave and a higher level of professionalism.

Increased crowding often brings administrative responses such as increased supervision by officers. These measures may be stressful in themselves, rather than stress being caused by impacts of space restrictions. In sum, although much research examining the impact of the physical setting on inmates and staff has shown effects of prison conditions on stress, much of it appears to have a simplistic, mechanistic orientation.