A MAXIMUM SECURITY BUILDING FOR
THE PINE HILLS SCHOOL FOR BOYS
at
Miles City, Montana

Part I
Undergraduate Thesis in Architectural Design

by
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Bibliography
Conditions Creating a Need
PART I

Conditions Creating a Need

The Pine Hills School for Boys, formerly known as the Montana State Industrial School, is a rehabilitation center for boys between the ages of eight and eighteen years old. The purpose of this rehabilitation center is to correct, not punish, the juvenile delinquents of this age group that have been sentenced to the school by juvenile courts around the state. The problems encountered by the sociologist, the psychologist, and the educator at the Pine Hills School are numerous. The most prevalent problem is discipline. According to the administrators, the most efficient way to control the discipline is a securely controlled individual association with the boys, and between the boys.

The Pine Hills School currently has a security facility, but it has been outdated and become obsolete by the new sociological approaches to rehabilitation. Sociology today calls for a securely controlled disciplinary environment that is conducive to the stability of the inmate's moral character. The current combines, with no physical separation, the maximum security inmates with the security risk inmates. This inconsistency of environment is defeating the purposes of multi-level rehabilitation treatment desired by the administrators.

Mr. Don Holladay, superintendent of the Pine Hills School, expressed a desire to have a new security facility
at the school. He stated the school's need for a security facility that could be a separate operation of the school complex. This would mean a facility that would be self-contained in the operations of food service, laundry service, classrooms, sleeping quarters, and casework study.

The enrollment of the Pines Hills School varies from 100 boys in the summer months to 250 boys in the late winter or early spring. The number varies because of the school's policy to let the boys return home for a summer or fall job as well as returning to school in their home town.

Approximately twenty-five percent of the boys are considered to be security risks. The Pine Hills School is in need of a larger security facility. The current facility can only handle about ten percent of the boys that are termed security risks.

The Pine Hills School accomplishes the goals of rehabilitation only in an inefficient manner because of the inadequate facilities. A facility that could conceivably meet the current sociological program and physical growth would simplify the problems of turning out a desirable product of the rehabilitation program.
Local Conditions
PART II
Local Conditions

Historic:

Montana established a reform school for girls in Miles City in the late 1800's. The reform school was operated as a detention and penal institution for girls until 1893. In this year the state needed more facilities for boys in Helena, but the overcrowding was pushed to Miles City. The Miles City reform school was thus for boys and girls. In the following years, the school in Helena was remodeled and the girls were moved there instead of the boys. The school in Miles City then became an institution for boys and has remained that way since.

Since the establishment of the state boys school, the school has grown and more facilities have been added to the school complex. Later, the name of the school was changed to the State Industrial School. Under the direction of Mr. Casper Wolhowe, the State Industrial School became a rehabilitation center rather than a penal institution.

In 1967, when Mr. Don Holladay took the position of superintendent, the name of the school was changed again to the Pine Hills School for Boys. Today, the school is making great progress in rehabilitation. As discussed in the earlier section, the enrollment of the school varies with seasons of the year, but the school continues to require new and more facilities to progress with its program.
Economic:

The greatest economic factor of the Miles area is agriculture. Miles City's population of approximately 10,500 is basically involved with the service and industry of agriculture either by supplying or buying. The agricultural character of the city and the surrounding region aids the Pine Hills School in that it allows the school to be partially self-supporting.

The Pine Hills School raises and harvests its own potatoes, corn, cucumbers, beans, and peas. The school also raises most of its own beef, and produces all of its own milk and eggs. The school has sufficient acreage for the hay crop needed to feed its livestock. Some sugar beets are planted and harvested for silage and profit in the field.

The agricultural production of the school is a great financial benefit to the school and taxpayer. The consumed products do not have to go through the hands of another buyer and seller.

Climatic:

Miles City lies in a semi-arid region of the continent. The extreme temperature variations of this area region are evident in Miles City. The extreme temperature readings for Miles City are 110° in the summer and -40° in the winter.

Miles City has a very dry climate. The dryness is caused by the region's position on the continent, and the relationship it has to the western mountain rainshadow.
The Arctic air masses that move down from the northwest have already dumped their moisture before coming to the Miles City region. These air masses are the cause of the sudden weather changes, in that they have no geographical barriers to overcome.

The monthly high and low temperature averages and the precipitation averages are listed below: (6, 1967, 103)

<table>
<thead>
<tr>
<th>month</th>
<th>temperature (°F)</th>
<th>precipitation inches</th>
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</thead>
<tbody>
<tr>
<td>January</td>
<td>-10</td>
<td>20</td>
</tr>
<tr>
<td>February</td>
<td>-15</td>
<td>20</td>
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<tr>
<td>March</td>
<td>5</td>
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<tr>
<td>April</td>
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<td>52</td>
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<tr>
<td>November</td>
<td>10</td>
<td>33</td>
</tr>
<tr>
<td>December</td>
<td>0</td>
<td>25</td>
</tr>
</tbody>
</table>

Miles City experiences cyclonic rainstorms that frequently bring high wind velocities. These wind velocities may reach 60 mph or greater.
Site Conditions
PART III
Site Conditions

Geographic:

The Pine Hills School for Boys is located just one-quarter mile east of Miles City at the end of Main Street. The maximum security building to be designed will be located on a site 225 feet x 225 feet between three existing buildings. (see Figure 1) The administration building is adjacent to the south. The current security building borders to the north, and the laundry works border the east boundary. The old school building and the chapel are located on the site, but are to be torn down in the future. These buildings are very old and have become obsolete for future use.

The topography of the building site can be considered level. The elevation difference is only approximately one foot from one corner to the opposite corner.

No natural vegetation exists of the building site. In the summer of 1968, the school planted a lawn in portions of the existing site, but this new lawn will have to be reseeded after the construction of the new maximum security building.

Utilities:

All the utilities are readily available at the site and at some points within the site. These utilities are
adequate for the future growth of the school. The hot water and steam for heating run through a service tunnel under the sidewalk on the southern boundary of the site. Electricity, telephone, and Montana-Dakota Utilities lighting system are at southeast corner of the site. A six-inch sewer main runs through the center of the site in an east to west direction. (see Figure 2) The sewer lines are approximately six feet deep in this area. The cold water lines run from north to south along the eastern boundary of the site.

Traffic patterns:

The only vehicular traffic near the site runs on the western boundary of the site. This is an unpaved road that serves the facilities to the north of the site and the site also.

Sidewalk traffic near the building site moves along a seven-foot sidewalk on the southern boundary, and a five-foot sidewalk on the western boundary. These sidewalks should be left on the site as they are, because they are the mainstream of pedestrian traffic in this area of the school complex. There several other sidewalks on the site, but they will have to be removed for the new facility. These sidewalks appear in Figure 2.

Soil analysis:

The soil conditions on the building site are classified
as a Havre silty clay series. The Havre soils are developed from alluvial deposits, and are characterized by dark-colored surface soils. Underlying layers of soil contain sand and some gravel which produce good drainage. The soil has the following profile: (5, 1940, 16)

Topsoil: 6" - 18" of dark brown silty clay loam with a bearing capacity of approximately 5000 psf.

Mid-subsoil: 20" - 30" of stratified silts and very fine sands with a bearing capacity of approximately 4000 psf.

Lower subsoil: 30" and deeper of gray calcareous very fine sands subject to seepage of water with a bearing capacity of approximately 6000 psf.

The Havre series of silty clay loam is inherently very fertile and, where very well drained, produces excellent crops.
1. administration
2. chapel
3. old school
4. current security
5. infirmary
6. laundry
7. store
8. shop
9. cottages
10. heat plant
11. residences
12. physical ed.
13. school
Site plan

Figure 2

N ← -10-
Aesthetic Considerations
PART IV
Aesthetic Considerations

The boys at the Pine Hills School for Boys are there because of a society that rejects their inability to conform. They are sociological misfits. The Pine Hills School tries to rehabilitate the attitude of each boy so that his return to society will be accepted by the society. The boy must learn to accept both the interactions of people and personal actions of everyone in society. The Pine Hills School is a "people-changing" institution. The changes produced by the school must be to the degree that both the society accepts the boy and the boy accepts the society.

"Architecture of correctional institutions should express a society which is firm in its determination to make crime unprofitable, compassionate in its attitude towards the unfortunate, and magnanimous in its effort to lead wrongdoers to take their places as cooperative members of society." (1, 1962, 85)

Inmates are human beings, and are products of an ever-changing society. The most promising effort possible by the administrators of a rehabilitation center is the recognition of the inmate's human character. Housing, care, and treatment programs which always recognize the fact that each inmate is a human being are steps towards a promising
outcome. The mood of the processes must be stable, but a large variety of contacts with the uncaged world brings about a learning process of living with a situation as it is.

"The rehabilitory approach proposes that institutions should seek to acculture inmates to the society to which they will return. The most startling result of the rehabilitory approach to acculturate will be seen in its effect on daily living conditions, and the participation in them by tractable inmates." (2, 1962, 73)

Confinement is not a natural characteristic of man. His conveniences to eat, sleep, breathe, and move are enhancing to his mental and physical health. The character of the Pine Hills School must be enhancing, particularly in the maximum security facility. Although the building is to confine and intensify the special correctional program, its dignity and decency are responsible to a large degree for the direction of changes that must take place in the boy's outlook. Again, the new environment of the boy should enhancing in the participation of the rehabilitory program.

Detention of man is artificial in nature, and is recognized by the inmate as an unnatural change in his life. Fresh air and natural light are two essential characteristics of the outside world, or a normal environment. The mood of a normal environment somehow helps bring out a
positive attitude. "People-changing institutions work not only with and through people, but on them also." (11, 1966, 25)

"Because humans are self-activating, reactive, and capable of wide variations in response, special measures must be taken to limit their capability to frustrate change." (11, 1966, 26) The boys at the Pine Hills School are not there voluntarily, and particularly when in the maximum security. The actions in the maximum security building can be anticipated if special attention is given to the more tractable inmates. Involuntary responses are characterized and evidenced as prison riots. The mood of the maximum security building must enhance a voluntary attitude through some freedom for individualism. This individualism should thus be related to the existing outside society. The building's deviation from the firm physical environment of the outside society may cause involuntary reactions.

Individualism can be fostered for each boy. The room the boy sleeps, eats, and moves in must reflect a character relating to the society to which he will return. Most of the boys at the Pine Hills School did not have the opportunity to develop a individual character of their own. The boys had no place to find a material thing to reflect their personal character. In the maximum security building, the detention rooms should be flexible enough to allow the boys to create the character he desires. Size and shape of rooms are difficult to change in a maximum security build-
ing, but the color is an easily changed character that may be changed by the boy.

Furnishings in the inmate's room should be of the type that allows the inmate to arrange them as he wishes. Furnishings are usually more inexpensive to buy by the large quantity, but the color or the change of any characteristic in the item may add to the individualism.

I have spoken of using the character and mood of the inside of the building to enhance a correctional change of the boy's character. In doing this, we can see that a voluntary or involuntary attitude can be anticipated. Can we make the outside character of the maximum security building create a similar response? The attitude of the boy before he is committed to the building is also important in the development of his attitude. The boys at Pine Hills School will live in the presence of this facility every day. Their attitude can be a poor one if the building looks too restricting.

"Regardless of its location, the mere fact that a building is primarily for detention purposes is no reason why its outside appearance should not measure up to good architectural refinements as available funds will permit." (3, 1958, 11)

In the outside world, artistry and beauty are applied to hospitals, mental institutions, and schools. These too
are correctional institutions, as well as institutions of detention. A maximum security building is an institution for correction, and its appearance from the outside may create involuntary attitudes. We must create and establish a positive change in the environment from the outside as well as the spaces within.

"No person can rightly be considered an authority on detention institutions whose information concerning them has not come from long experience and intimate contacts in security work. A search of the literature in the penal and correctional fields indicates that, without exception, no comprehensive study has yet been written of the most commonplace of all our institutions of detention." (3, 1958, 10)

The only approach we can take is to consider the function and operation of the facility. We can summarize by saying that aesthetics of the building must measure up to the requirements of a good architectural environment of the humans on the outside. This of course entails a totally controlled environment within the facility.
Functions of the Building
PART V
Functions of the Building

The purpose of the maximum security building is to provide a specific place for intensive correctional treatment. "The challenge for us in corrections is to put in use all that is presently known about human behavior in the correcting of criminal conduct." (8, 1968, 75) The intensive treatment program is to be operated by a specially trained staff. Each staff member, usually called "case worker," is trained for a specific phase of the treatment program. The intensive treatment program is an established step by step program of treatments which rehabilitates the inmate's understanding of his role in society. The manner in which this program is operated is best seen in a chronological summary of events.

"An inmate's commitment to the maximum security building is most often caused by his conviction of assault or escape. On his arrival to the building, the inmate is sent to an isolation room for a period of twelve hours. The only contact with people during the next two and a half days is the numerous interviews with his appointed case worker. During this time, discussions concerning conviction, current attitudes, and future programs are carried on between the case worker and the inmate only."
The second stage of treatment involves group therapy with one case worker and five to eight inmates.

This therapy group of inmates is studied as a unit and as individuals for their participation in discussions, attitudes, interactions, and reactions to the group treatment. Meals, special case work, sleeping, and education are all conducted in the inmate's individual security room. Recreation is conducted on the group basis. This group therapy is carried on for a period of time which depends on the progress of the individual inmate. The group treatment program involves from one to two hours per day, and the remaining time is spent in the individual's room. Group therapy can establish the success of the program and the progress of the inmate in learning to live with other people.

The third major stage of intensive treatment is conducted on a group basis of ten to fifteen inmates. The inmate moves from his individual room to a dormitory. Meals, case work, sleep, education, recreation, and leisure activities are all conducted on the group basis. During this period of treatment, the inmate is still considered unfit to be released to other areas of the school, and is termed a security risk. His progress in treatment has merited his freedom,
to an extent, to interact with other inmates. This stage of treatment is a transitional stage focusing on the future of release, that is, from the maximum security building and its intensive treatment. This process involves taking the inmate out to meet his new cottage parents, going to ballgames, and some association with the rest of the school. This process is termed the re-education/development program. (9, 1969)

"Inmates are to be changed through training. Changes in attitudes and values, acquisitions of skills, the development of personal sources, and new social behaviors are sought. This type of program provides more gratifications and maintains staff-inmate relations." (11, 1966, 34)

The summary of events just described is the role to be played in the maximum security building. A discussion of events indicates the facilities needed and desired within the building complex. To get a better concept of what function each facility is to perform, a discussion of the individual rooms is necessary.

On entering the building, a reception room is necessary. In this room, people entering or leaving are frisked for weapons, contraband, or other undesirable objects. The
receptionist, or as more properly "the security guard," should be located in a position that allows total surveil­lance of the "maximum security" rooms (isolation rooms) and the "security risk" rooms (dormitory rooms). Included in the reception room should be a small area for visiting. The visiting space should accommodate room for groups of two to six people to converse, and be under the surveillance of the receptionist.

The maximum security section of the building should house approximately twenty inmates. These are the individual rooms for isolation. Each inmate should have his own room containing furnishings for sleeping, eating, reading, studying, clothing storage, and case work discussions. The rooms should also be provided with private batheing and lavatory facilities. The inmate may spend from eight to ten hours per day in this room alone. He is allowed to talk to other inmates from his room, but the passage of contra­band should be made impossible. The function of this type of room is the isolation of the inmate for the first twelve hours, and the private living space for the remainder of his second stage of treatment.

The security risk area of the building, or the dorm­itory, is for common sleeping. The room should be large enough to sleep fifteen to twenty inmates in bunk beds, and the storage of their clothing. Adjacent this room should be a lavatory including showers, water closets, lavatories,
and urinals. Some measure of privacy should be provided in these spaces, possibly in the form of a partitioning device.

The group therapy inmates will be from the separate groups. The group therapy room is to be used by these groups at different times of the day to avoid the mixing of the two groups. The room should be designed for informal group meetings. Furnishings in this room should be heavy and durable. Heavy furniture cannot be as a weapon, and durable furniture is needed to eliminate sources of vandalism. The groups will meet in a space furnished for five to eight inmates and one case worker.

Adjacent to the group therapy meeting room should be an observation room. This room should be furnished with counters and chairs for the case workers to study the inmates. The room should be concealed from the group meeting room so that the case workers can make notes of inmate's reactions and actions without the inmate knowing he is being watched.

The inmates in the security risk groups will attend classes in classrooms provided in the building. The maximum security inmates will attend classes in classrooms other than those provided for the security risk inmates. There should be at least three classrooms for the two groups of inmates. A small scale classroom should be provided for the younger boys who are to be taught reading and other elementary subjects.
A space for recreation should be provided in the building. Space for group and individual activities should be kept in mind. Group activities such as basketball, volleyball, badminton, table tennis, wrestling, tumbling, and shuffleboard are desirable. Individual activities such as weight training and gymnastics should be provided for in the space. The recreational facility should have direct access to the outside. Included in the recreational space should be adequate storage space for all the equipment. With the removal of the recreational equipment, the space can be used as a small theater for movies.

The recreational program space is not only for the free time usage, but also the use as part of the educational program.

Vocational training is a major program at the Pine Hills School. The laundry service at the school has always been the detail for the security risks. The administration wishes that this detail be continued as part of their, the security inmates, responsibility. Laundry facilities will include large scale washing, drying, and pressing.

Another vocational program is the arts and crafts. Space for wood and metal work should be provided. In this space there will be activities such as drafting, drawing, and painting. Provisions for close supervision should be kept in mind, because the inmates often attempt to steal the tools for the use as weapons.
Food service is to be provided in the building adequate to serve meals to the security risk inmates on a mass scale. The maximum security inmates will be served their meals in their rooms. Access to both the dining room and the maximum security rooms is to be easy or direct. Furnishings in the dining room should be heavy and durable as should be all other furniture in the building. Direct access to the outside should be kept in mind for the services necessary, that is, garbage disposal and food supplying.

The security risk inmates are allowed some leisure time. Their leisure time will be spent as they wish in a lounge, or more properly, "day room". The day room should provide space for activities such as card playing, billiards, television watching, reading, or conversing with other inmates on an informal level. Each of these activities may be conducted in either a single room or a complex of rooms. The day room, or rooms, should be accessible to the reception room, the dormitory sleeping quarters, the dining room, and lavatory for easy movement and surveillance.

Some other facilities that are desirable but not mentioned in the treatment program are a small library, a counselling office, and solitary confinement cells.

The most important of these is the counselling office. The office is to provide a space for the case workers to discuss their studies with their director, or to discuss their problems with their colleagues. The office is to be
used as a place for intimate interviews with security risk inmates. It is desirable that this office be accessible to the administration building.

The library is to function as a special lounging area for the inmates of the security risk group who wish to read or study. Reading space for approximately ten inmates is adequate. Maximum security inmates will be allowed to select their books, but will return to their room.

The solitary confinement cells will serve as disciplinary devices only. The administration needs some facilities to cope with the hard-core inmate. The rooms should be furnished with built-in facilities for eating, sleeping, and sanitation. There will be no facilities provided for reading or studying. Interviews with these inmates will be carried on in the office.

The exterior activities of the maximum security building should provide spaces for outside group therapy meetings, recreation, and leisure time activities for both the security risk group and the maximum security group. These activities suggest the necessary furnishings. A wall, or a barrier similar to a wall, should be provided to prevent escape and the passage of contraband. The purpose of the outside facilities is to provide the inmate with benefits of the fresh air and sunshine.

The function of the security building is the detention of inmates for intensive correctional treatment. The person-
nel required to perform the necessary security operations are numerous. The number of security personnel can be cut down by the incorporation of electronic devices. Closed-circuit television for the surveillance of outside activities can be beneficial for the cut down of personnel. The main or important entrances to the building have to be guarded by some sort of security personnel. With the advent of electronic locking devices the number of personnel can be cut back again. The greater number that it takes to operate a facility, the more money it takes to support its operation. The security problems also increase with the increase in personnel.

"The nature of institutional regimes and demands are of central importance, for the ways these define the inmate's experience and condition of his future behavior within the institution's boundaries constitute the primary means by which the institution pursues its goals. The inward focus of the closed institution has another important consequence: the withering effect upon the staff of twenty-four-hours-a-day exposure to the inmates. Especially in the resource deprived institution the low pay, the odd working hours, and the threats to security may produce disenchantment, apathy, and hostility." (11, 1966, 54)

The treatment program could be more efficient with the use of electronics in place of personnel, whether the problem be of a security nature or a problem of hostility, apathy, or disenchantment.
Economic Considerations
PART VI
Economic Considerations

The Pine Hills School for Boys is a state supported institution. The capital investments made by the school are based on a long range program of needs and financial capabilities of the state. The finances for capital investments are drawn from the Montana cigarette tax. This program was initiated by the Montana Legislature in 1967.

Another source of finances for capital investments at the Pine Hills School are the bonds purchased with the counties' boy care fund. Each county in the state pays the Pine Hills School a fixed amount of money for each boy at the school from that respective county per month. This money is intended for the support of the boys and for capital investment.

The maximum security building is to perform a specific function and possess aesthetic characteristics, as described earlier in this report. The economy of the building is not highly variable, but the construction must be carried out the least expensive way.

The cost of construction of the new building can be reduced to a certain degree by the use of the unskilled labor of the boys at the school. The demolition of the old school and chapel as a part of vocational training or of their detail activities. They might enjoy it.
A detailed check could be made to find out if the boys could perform more of the work to be done. The law states that all state work must be done on the competitive bid basis, but the contract could state the amount of construction to be done by the contractor.
PART VI
SUMMARY

Common surveillance with physical separation is a contradiction. Maximum security inmates are to be housed in one isolated area and security risk inmates in another, but the surveillance of the two must be done from a position as to include both groups of inmates.

The separation and common surveillance problem was an important and contradicting design criteria. In the design of the maximum security building, the maximum security inmates were housed individually and put under the surveillance of closed circuit television. The security risk inmates were placed in visual contact with the guard. While in their dormitory however, they would be overseen by closed circuit television also.

Considering also that the two groups of inmates must use the same areas for recreation, vocational and educational processes, the design was set up to use common corridors and stairways. With the use of electronically controlled doors, the inmates of one group could be moved behind locked doors from the other group. Then of course, the routine is repeated for the second group of inmates to be moved.

Security of the maximum security building is not a great problem, but the absolute separation of inmate
groups is. The exits of the maximum security building will be electronically controlled from both the guards desk and the main office in the administration building. If in the event that inmates reach the exterior, the moat around the site perimeter will permit recapture of the inmate.

Services to the kitchen, laundry, and gymnasium will be done through acknowledgement of the administration building. Keeping boys out of the maximum security area is not a problem, unless of course they want to stay there.

The maximum security building is not a desirable place to be, functionally, but the facilities of this building are designed to meet the new approach to correctional rehabilitation. The facilities in the building are enhancing to the correctional processes discussed in section V of this report. The boys at the Pine Hills School do not have the facilities of the maximum security in their cottages, nor at home.

A question now asked is how to construct a building that will promote the correctional processes, yet discourage outsiders from entering to stay. In answer to the question, it has been decided that this particular building or facility be a forerunner of the type of facility and process the administration wished to achieve for the end product of the entire institution.
Bibliography


5. De Young, William, SOILS SURVEY, August, 1940, page 16.


