IMMEDIATE ARCHITECTURAL NEEDS OF BOULDER RIVER SCHOOL AND HOSPITAL, BOULDER, MONTANA

Part I

Undergraduate Thesis in Architectural Design

by

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Submitted to the School of Architecture as partial fulfillment of the requirements for the degree of Bachelor of Architecture

at

Montana State University

Bozeman, Montana

June, 1970
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The primary purpose of this thesis research is three fold:

1. To determine the immediate architectural needs of the Boulder River School and Hospital at Boulder, Montana.

2. To program a construction schedule for the immediate and anticipated future program needs.

3. To outline an immediate building program within the limits of this thesis program.
Boulder River School and Hospital (BRS&H) at Boulder, Montana is in need of repair of almost all of their buildings including some of those which have been built within the last 15 years. The older buildings, all built about 70 years ago, would include the following:

- one administrative building
- seven dormitories
- one laundry facility
- two storage facilities
- eight staff houses
- one apartment (old hospital building)

The new buildings, which also need some repair, include the following:
a. one hospital and addition (built 1950 & 1967)
b. one school (built 1955)
c. one placement building (built 1960)
d. one dormitory (built 1955)
e. six cottages of which construction will start this year and probably be finished during 1971.

However, describing the buildings helps, but does not present a real architectural picture of the situation as it actually is. We may compare the functions of the buildings as to how well they perform vs how well they should perform, but this does not reveal the whole picture either. Rather we must compare the functions it does perform vs the functions it should perform. This comparison will more fully reveal the real architectural needs of the institution.

2.1 Situation

What the residents need, in more than any other aspect, is community help! The great potential of communities to help bring these human beings back into society as useful and productive people is virtually untouched. They are presently sent to an institution to be locked out of the world and forgotten like a criminal, except their average life sentence is 14 years and a criminal's is only 8 years, so obviously the present method of handling these people goes along with the old cliche: "out of sight, out of mind." There are many books, articles, papers, and reports written on the subject of mental retardation in the last several years that virtually force us to abandon this old cliche!
Let's stop here for a minute and review the situation as it is presently handled at BRS&H. They operate on a unit team system which is broken down into the following units:

1. Pretraining of the profoundly retarded
2. Emotionally disturbed
3. Continual care
4. Educational system
5. Placement
6. Hospital

Residents in these unit teams are homogenously grouped and programmed according to primary needs of vocational, educational, pre-training, continuing care, and special therapy areas.

However, this system does poor job of extending the environment of each individual resident. It is essentially geared to continual care and in a very limited sense, to training and teaching of the residents. But, no where close to the training and teaching a resident would receive under a community' oriented program (to be discussed later). Presently the needs of the residents and administration are fulfilled as follows:

2.1.1 Needs of the Residents

a. Sleeping- In eight of ten dormitories sleeping is executed in mass formation, and in the remaining two, sleeping is limited to about six residents in one sleeping area.
b. Health & Hygiene- Hospital functions are fairly well up-to-date, being presently adequate. The lavatories in dormitories use standard type fixtures and do not accommodate the various types of residents. Self care grooming areas are virtually non-existant.

b. Clothing storage is very poor in most dormitories, being in mass stock pile (figuratively speaking) in small rooms and porches.
- Laundry facilities are presently adequate, but slow, resulting in several days to receive any one batch of clothing wherein many residents have not an excess of clothing, actually run short of clean clothing to wear.

c. Eating- All food is prepared at one center and then distributed to the different eating areas (dining halls) at the various eating times. Equipment for roasting and grilling is non-existant.

d. Training- Pre-training is carried out at far less than ideal conditions, especially since classrooms of any kind are very scarce. Any other training that the residents may require is exercised at almost a minimum because of the severe lack of adequate facilities. The school gym is the only main training and recreation facility the institution has and it is vastly over-used.

e. Schooling- Over 300 residents take part in the school program of about six hours per day (dependent on the specific individual) in a classroom type situation.

f. Recreation- The residents enjoy basketball more than any other sport and play it continually. They also play baseball, football, and tennis on the grounds near the school. For swimming enjoyment they must go into the town of Boulder by bus. To go bowling, they must go into Helena by bus.
- To show movies the school gym must be set up each time to accommodate the function.
- Dancing is one of their favorite pasttimes and also utilizes the school gym, again calling for a setting up and taking down of equipment in the gym.

g. Jobs- For the great number of residents qualified to work, the institution provides them with jobs in all auxiliary services such as:

a. working in the laundry facility
b. working in the main food preparation center.
c. working in the various dining halls.
d. working on the ranch growing crops and raising animals.

g. Psychological- A limited type of music is piped into many of the working and living areas for the psychological benefit of the residents.

h. Religious- Every Sunday a mass is set-up for the Catholics and protestants in the school gym, again adding more wear and tear on the already over-used gym.

2.1.2 Needs of the Administration

a. Administrative Jobs - Need office type building for processing the general needs of the institution. Their present facility was not designed for this function and is in very poor condition having been built about 1896.

b. Maintenance and Storage- Three buildings are currently used for storage and one for a shop. However, none of these buildings are adequate to properly take care of the maintenance requirements as there is no central storage nor storage system feasible under the circumstances. To exemplify how short the storage facilities are, the unfinished dirt floor basement of the school is the main storage facility.

c. Boiler Plant- Two old and two new boilers make up the boiler plant in two adjoining buildings. Presently the plant is adequate and in good repair.

d. Staff Housing- Staff housing is very limited, providing a residence for the superintendent, and seven other staff facilities, and a few apartments (in the old hospital) for more staff members. Consequently, the housing for the staff is very poor and being no better in Boulder, a great many (50%) commute from Butte each day thereby adding to the great turn-over of staff members each year. (Note, staff housing is not the answer.)

e. Attendants- Attendants need a central office space and currently have none or use whatever space they can get in each dormitory resulting in poor coordination between attendants and effective control of the residents.
f. Miscellaneous— Water pumps need repair and replacing. Electrical wiring and such is in need of great repair and replacing, not to mention the roads which need much repair and paving.

2.2 FUTURE PROGRAM

The philosophy of BRS&H is:

"To return as many as possible to their homes or communities, as soon as possible, to lead useful, purposeful lives. The most severely retarded must be given adequate stimulation and opportunities for self development so they can realize their capabilities however limited and be happy while here."

This philosophy will still hold true except that it will be the philosophy of the mental retardation division of the Montana Department of Institutions.

To more satisfactorily carry out this philosophy, the division will operate on a programming system such that when a person is institutionalized it will be for the purpose of meeting needs not met by the local community - not mental retardation per se, he is then by way of this programming system, developed through an appropriate series of closely coordinated programs to a point where he may be promptly returned to his family and/or regional community. Through these programs the resident population of the institution will be reduced in an orderly, controlled fashion to the projected population of about 400 or less and the environment improved along humanistic and personal

1 REPORT TO THE GOVERNOR, p. 10, June 1968.
Large overcrowded dormitories will be replaced by small residential cottages providing a more home-like environment and housing residents in living groups of sizes determined by the recommended staff/resident ratio. Other buildings housing service functions will be remodeled or designed to best meet institutional needs and will resemble similar facilities in the community.2

These programs begin for the individual when he is first recognized at the regional level, as shown by figure 1. Each region will be headed by a regional community center and is set up as shown by figure 2. The community center is essentially the first step any retarded person will take in finding his role in society. It is at this community center that the individual will be diagnosed and evaluated in every medical and psychological and educational, vocational, and aspect to determine what his needs are.

2 A NEW PROGRAM PLAN FOR THE MENTALLY RETARDED, p. 64, December 1968.
Figure 1. Regional breakdown of Montana according to population.
Figure 2. Program breakdown from division level showing a typical unit breakdown of a region.
The center will operate in the following areas:

a. health supervision
b. child guidance
c. treatment
   1. correction of defects (limited)
   2. drugs
   3. medical
   4. diet
   5. psychiatric
   6. psychological
   7. dental
   8. nursing
   9. social services
   10. adolescent medical services
   11. chronic disease services
   12. home-maker

After diagnosis and evaluation of the individual is completed or progressed as far as possible in this center, he is then entitled to admission to another program. Basically his stay here will be very brief. From his diagnostic, evaluative, and progress reports, the community center will decide what his next step will be. His next step in the program may be horizontally and/or vertically depending on his individual reports as shown on figure 3. Essentially the young, profoundly retarded, multi-handicapped individuals will be the only ones sent to BRS&H. Since 85% of all mentally retarded people are only mildly or moderately retarded, the greater proportion of individuals will not go to BRS&H, but will go to one of the other developmental centers as shown by figure 4. These other developmental centers provide three areas an individual may go:
Figure 3. Chart showing how an individual may progress toward a return to the community.

Figure 4. Directions an individual may progress once professional help has been initiated.
1. To a pre-training center where those not trained to effectively participate with others, will learn to do so. In other words, they will be taught how to go to school, work, and act as they must. There will be many of these centers in each region (as many as they can support), preferably one for each major community in the region. In addition to group participation, they will be taught co-ordination or the larger movements which come into play, for instance, in walking, climbing a ladder or catching a ball. Simple occupations such as cleaning spoons, building with blocks, and unpicking threads come next: later on, matching colors, modeling, making mats and drawing.  

2. To a special public school where all mentally retarded individuals will go. This is a publicly supported school that trains them in basic areas of schooling and as they begin reaching certain levels of education the emphasis will shift toward vocational training. However, this is not a rigid program and all teaching will be according to the progression of the individual.  

3. To a sheltered workshop where he will exercise his vocational ability he has been learning in the special public school. This is the last step for most individuals, as they may very well spend the rest of their life working here. A very few will actually return to society and stay there on their own most will require continual contact with the institutional agencies such as the sheltered workshop will provide. Essentially the entire system will be set up so retarded persons who are returned to the community may live in a normal residential setting such as homes or apartments whenever possible, their specific needs will be met by community service agencies. Any residential facility  

Penrose, Lionel S., M.D., MENTAL DEFECT, p. 163, 1934.
built in the community will be located in residential neighborhoods and will be designed to resemble other buildings in the area.

2.3 Architectural Suggestion

Robert Edgerton, in his book *The Cloak of Competence* suggests:

"The trend everywhere is toward the preferred institutionalization of younger, more severely retarded patients, and as these more retarded persons begin to take up the inevitable need to move the mildly retarded patients from hospital into community based programs."  

This is precisely the direction BRS&H is headed as indicated by their philosophy in section 2.2. So, using this philosophy as a basis for laying out an architectural plan we may begin by analyzing the architectural needs brought out in sections 2.1 and 2.2 on needs of the residents and administration.

Basically, BRS&H is presently overbuilt, meaning that if this future program is to be initiated BRS&H will probably drop from a population of 950 residents to about 400 or less, and those remaining being only the severely and differently retarded, and the very young.

So primarily, BRS&H will be in need of much remodeling, destruction of condemned buildings, and an addition to

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4 A NEW PROGRAM FOR THE MENTALLY RETARDED, p. 64, December 1968.
the hospital building. However, the main direction of architectural emphasis will be in each region toward planning of a community center, which should be located in the center of each region, and the number of required sheltered workshops, ward nursing homes, special public schools, pre-training centers, and residential care units.

A community center for each region must be built immediately to accommodate those problems, that in the future program, BRS&H will no longer handle. This facility could begin as a minimum, and as the other facilities just mentioned begin to work into the plan, the center could be extended to fulfill its anticipated scope. This will allow a reduction in the size and function of Boulder according to the future program, but will increase the specialized functions of the BRS&H. This phasing could be brought about as is outlined in the next section.

2.4 Architectural Construction Schedule

**Phase I**

Develop plans for Regional Community Centers to accommodate the philosophy of the program outlined in section 2.2. This will allow an immediate reduction (as the Regional Centers are built) in the size and function of BRS&H. Also development of long range plans for the special function of BRS&H as outlined in the future program could begin.

**Phase II**

Develop long-range plans for layout and beginning building of sheltered workshops, ward nursing homes, pre-training centers, and special public schools based on the reduction in population and
the changing role of the institution. Also, remodeling of BRS&H according to the long range plan developed in Phase I could begin along with demolishing buildings as outlined in Phase I.

Phase III

Continue development of Phase II, demolish all buildings as outlined in Phase I planning at BRS&H, and begin plans for layout and construction of residential care centers, sheltered workshops, special public schools, and pre-training centers could begin.

Phase IV

Continue planning, construction, and adjusting to changing needs of Phase II.

2.5 Building Program for this Thesis

Phase I of the Architectural Construction Schedule (section 2.4) is the specific problem I intend to solve for fulfillment of Part II of my undergraduate thesis requirements. Phase I consists of:

Part I

Development of "plans" for Regional Community Centers to accommodate the philosophy of the future program outlined in section 2.2.

Part II

Development of Long-range plans for the special function of BRS&H as outlined in the future program described in section 2.2.

To further elaborate on Phase I, I intend to solve Phase I for Region Number III because it is geographically within my reach. By concidence, the geographical center of Region III is Boulder, Montana, the present location of BRS&H, and this is where I will locate the Regional Community Center. Along with the Community Center, I
will design a future plan for BRS&H to coincide with the future program as previously outlined. The plan will primarily consist of specifying the functions BRS&H will perform and an architectural plan for carrying out those specified functions in general.

The design of the community center will be in much greater detail than BRS&H might alone demand and will follow closely the building program to be specified in section 6.0.

3.0 LOCAL CONDITIONS

Of the five regions in Montana in which a community center must be built, the center for region III has been chosen as the site I will analyze for Phase I of the Architectural Construction Schedule.

3.1 Geographical

The site for the community center must be located in the geographical and population center of the region so it will be easily reached from any point in the region. The time required to drive from the furthest point of the region to the center would be approximately 50
3.0 LOCAL CONDITIONS

Of the five regions in Montana in which a community center must be built, the center for region III has been chosen as the site I will analyze for Phase I of the Architectural Construction Schedule.

3.1 Geographical

The site for the community center must be located in the geographical and population center of the region so it will be easily reached from any point in the region. The time required to drive from the furthest point of the region to the center would be approximately 80 minutes, which is reasonable. As indicated by figure 3, Boulder is the most centrally located community in region III and is amid the greater share of the regional population so will be the location I will choose for the community center.

3.2 Social

Boulder is a reasonable location for the community center since one of the major departments of the future program will be located at the present site of RH&H. Two advantages may be realized:

a. The state owns a large amount of land at Boulder, and without any additional cost to the state, the required land needed for the center may be appropriated.

b. Since one of the major departments will already be located there, facilities may be utilized to the advantages of both departments.

local conditions
minutes, which is reasonable. As indicated by figure 5 Boulder is the most centrally located community in region III and is amidst the greater share of the regional population so will be the location of which I will choose for the community center.

3.2 Social

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a. The state owns a large amount of land at Boulder, and without any additional cost to the state, the required land needed for the center may be appropriated.

b. Since one of the major departments will already be located there, facilities may be utilized to the advantages of both departments.

3.3 Climatic

The winds are primarily from the west, but are generally not too dominate. This is about a 40 pound snow load region.
Figure 5. Map of Region III.
4.0 THE SITE

In viewing the present use of land at BRS&H, it is apparent that their buildings and functions are oriented in a northeast by southwest direction along the river and that with the completion of the six cottages now under construction, that the main layout will form a north-south layout as can be seen in figure 6. This conveniently leaves a parcel of land in the northwest corner that shows the necessary potential for handling the center according to the future plan.
Figure 6. Basic group layout of BRS&H.

One of the potentials is ease of access. Being located immediately adjacent to highway 281 is an advantage in that the desired isolation from BRS&H is possible while still being able to take advantage of the school facility at BRS&H that will be utilized by the center. Figure 7, which shows the site and all its surrounding features,
Figure 7. The site.
reveals the school to be in the upper right hand corner of the page which is immediately adjacent the site. This is exactly what is desired if a reasonable relationship is to be established between the center and the school and hospital.

4.1 Topography

Figure 3, which shows the topography of the parcel of land in contour intervals of 1.0 feet, reveals that a certain amount of fill may be necessary depending on the actual use of the land to be determined later. At low water, the river is about six feet lower than the highest point on the site and about the same elevation as the lowest part of the site meaning that if submersion is to be prevented, fill must be used. A look at figure 9 will clearly show how fill may be necessary in the old river bed.

4.2 Views and Orientation

The site is oriented northeast by southwest and is bisected by the Boulder River in about equal parts in a northwest by southeast direction. The main views are to the north and south directions of the site by virtue of the orientation of the site in the valley in these directions as can be clearly seen in figure 9.
Figure 8. Topography map of the site

SCALE: 1" = 200'  CONTOUR INTERVALS 1' INCREMENTS
BOULDER RIVER BRIDGE

WEST BOUNDARY

STATE HIGHWAY #281

PRESENT DORMITORIES

BOILER PLANT STACKS

EXISTING SCHOOL

NORTH BOUNDARY

FIGURE 9-A  SOUTH VIEW OF THE SITE
4.3 **Circulation**

Having a major portion of the site adjacent the highway determines that that side (east) will be the major vehicle relationship to the site for the clients and the community in general and that the west and south sides of the site will naturally relate to the BRS&H. With the river bisecting the site, the circulation over the entire site is seriously hampered.

4.4 **Soil Analysis**

A detailed soil analysis has never been conducted on this site and consequently for this thesis research, a general description is all that is available. Essentially the site is virgin and is partially an old river bed. The river bed portion is a huge bed of loose rock and gravel that will most definitely have to be filled if used and the rest of the site has a thin top soil of about five inches. The entire site (except the old river bed) is covered with natural grass and scrub, as can be clearly seen in figure 9.

4.5 **Utilities**

There is no shortage of utilities adjacent the site because of the utilities needed by BRS&H. There is electricity adjacent the site and, as a result of
the future program for BRS&H, they will have an excess of steam in their power plant. Water will come from the same source used by BRS&H which is pumped from a well and stored in a water tank in the air.
The new program plan for the division of mental retardation for the state of Colorado is really appropriate to the economic picture for this situation. It stated:

"The Planning Committee firmly believes that although costs for programs for the mentally retarded indeed play an important role of relative to reality, it is more important that the financial picture be viewed as a means to the end, rather than become the end in itself."

Although the main channels for getting money to initiate any government programs is usually through legislation, supporting funds may very well come from matching state dollars with Federal dollars, business investments, and community donations.

Division of Mental Retardation, A New Program Plan for the Mentally Retarded, p. 24, October 1958
6.0 REGIONAL COMMUNITY CENTER

The community center for Region III is the problem I will be solving for Part II of my degree requirements. This center will be the head of Region III and in charge of all other mentally retarded programs of this region. It will be the main center for:

a. Diagnosing and evaluating all mentally retarded individuals of region III.

b. Those individuals awaiting placement in other specialized facilities of region III.
c. Those individuals who do not "fit" into any of the other regional programs will stay here until they do fit one of the regional programs or must be sent to BRS&H.

d. Use as a "halfway station" while adapting to an independent work situation.

e. Use as a source for supplying and orienting professional personnel to implement and maintain the proposed plan.

f. Use as an educating influence of local public opinion.

g. Limited research.

Presently this center for Region III will be serving a population of about 152,000 people, and is predicted to reach 163,000 by 1973.

Since it is averaged that 3% of all people are mentally retarded to some degree, or are judged to be at some time in their lives, in an area of 152,000 people the center will be serving about 9120 mentally retarded (MR's) people.

So, if in 1973 the population will be up to 163,000, the center will be serving about 9780 MR's, an increase of about 660. Since the 152,000 was a 1968 estimate, and the 163,000 is a 1973 prediction, the 660 MR increase is over a five year period and will average out about 132 new patients* per year. So by assuming a new patient

*New Patient- By new patient is meant: Those mentally retarded individuals whom have never been diagnosed and evaluated for mental retardation. It is expected that these individuals stay at the center briefly, but will need all the facilities necessary to support them 24 hours a day. However, many of these individuals may spend only a five day week at the center.
will stay at the center from zero to twelve months, a figure of 13 per year is arrived at for serving new patients. Further more, by utilizing this center as it is intended (according to the future program) the figure of 13 patients per year is the base figure to be used in calculating the total number of patients it will fully serve at anyone time. Of course, expansion will have to be taken into account over and above this base figure of 13 per year of 1973. Since, over a five year period the MR increase was about 10%, a 10% plus increase for the base figure is appropriate to design into the regional community center.

Now that a base has been established, referal to the beginning of this section, specifically section 6.0, c and d will show that room must also be provided for these other individuals. These individuals, however, will not stay long (probably not over two months), as they will be further prognosed, oriented to the community, and placed according to the prognosis. Probably a total of 132 patients per year would use the center as mentioned in 6.0c, and d. These patients will require about four beds.

Another provision that must be provided for, is respite care. This is for parents of a MR and who need a place to send him when they do such things as take a vacation,
have a new pregnancy, or just need to get rid of him for while. The center would take these MR's while the parents enjoyed their respite. With about 9780 MR's in the region, you may receive as many as 50 requests a year for this care. So, this will result in about two additional beds.

These three sources of patients, which have just been covered, will total the basic number of beds as follows:

- a. new patients = 16 beds
- b. transfers = 4 beds
- c. respite's = 2 beds

basic total = 23 beds

From this basic total of 23 beds, the required number of employees can be analyzed as follows:

**Technician** - A technician is the direct care person who is responsible for the daily behavior, growth, and development of MR's. One technician for every two MR's is the most desired ratio according to authorities at BRS&H. So, as a basic maximum, 11 technicians will be required to satisfactorily care for the MR's if the center is operating at full capacity.

**Public Health Nurse** - It is the responsibility of this nurse to follow through any special treatments MR's may require when they leave the center, and go to a home, to see they get the necessary treatment. She will carry out PKU diets and any other recommended diets for MR's that are deemed necessary. She will be the individual to go to a home in the community and help families that are having difficulty in caring for their MR child. Essentially she is the one that families in the region will contact at the center when help is needed. Authorities at BRS&H recommend only one will be necessary per region.

**Social Service Staff** - These are the people who work with all the MR's in the region on a ratio of one social worker to 50 MR's. It is their job to maintain integration of the MR in society. Since there will be 23 MR's at the center, only one social worker will be necessary and he
may very well be the head social worker for the region since the regional headquarters will be at the center.

Educator- This person will be in charge of all special education for the MR's in the region and his headquarters (HQ) will be located at the center. He will also be responsible for supplying and orienting all personnel for that field in the region.

Occupational Therapist- This individual will program all occupational therapy for the region. The main facility for this treatment will be at the center and he will operate it. He is the only therapist that will be necessary at the center.

Psychologist- One full time psychologist for every 50 MR's is the desired ratio and therefore only one will be necessary at the center.

Medical Records- The function of this department will be the responsibility of maintaining medical records on all MR's. A clerk and a typist are the required personnel.

Physicians- The following physicians services will be necessary, but not full time, but will require a space for their personnel equipment and work pertaining to the center:

a. general practitioner (full time)
b. internist (full time)
c. neurologist
d. pathologist
e. orthopedist
f. dentist
g. speech therapist

Nurses- One Registered Nurse is required and one Licensed Practical Nurse (LPN) for every two patients is recommended by BRS&H and will be related to only the basic number of new patients and therefore only eight nurses will be necessary.

Administrator- This one individual will head the entire region in all respects and will be located at the center.

Food Preparation- At least two persons will be needed full time to prepare all necessary meals for the center.

From this description of jobs a list of the total number of employees can be tabulated as follows:
Therefore, at a maximum, the center will be accommodating 22 patients, who will require 24 hour care, and at the same time 37 employees (32 of which are full time) to satisfactorily operate the center and the region. It may also be noted that in addition to the 22 patients, on occasion the center will be required to provide an information and referral service to answer miscellaneous calls everyday and maintain a emergency setup with ambulance, physician, and nurse of 24 hour call to serve the region.

Now perhaps a definition of the activities of the center can be discussed in relationship to the number of people involved.

6.1 Activities

The center must accommodate space for the following activities:
Comprehensive Regional Community Center Activities

- sleeping area for 22 patients.
- dining area for 22 patients and light lunch facilities for the staff (12).
- food preparation equipment for preparing food for the 22 patients, five of which are in the medical unit and special diets will be necessary, and the light lunches for the 12 staff members.
- recreation for 23 patients.
- occupational therapist and physical therapist work areas.
- classroom type area for patients and staff.
- rest rooms and shower area(s).
- headquarters for technicians.
- headquarters for regional educator.
- headquarters for social staff.
- headquarters for regional administrator.
- headquarters for public health nurse and a homemaker.
- headquarters for the RN and LPN's, and a lab area for them to work.
- headquarters for: psychologist, neurologist, pathologist, orthopedist not full time, speech therapist, dentist
- headquarters and exam room for general practitioner and internist.
- medical records clerk and typist.
- small coffee room for the staff in general.
6.2 Discussion of the Activities

Sleeping area for 22 patients

This type area must have 22 single beds and each bed must relate to personal privacy for each individual to a large degree. The main objective here is to avoid any hospital or institutional like atmosphere, rather it must be very home-like. This, of course, cannot apply to all beds as five of the beds will have to be more closely oriented to medical control for the benefit of those patients needing close medical supervision.

relationship schematic
Dining area
This area must have the necessary facilities for serving the 16 patients so they may eat in a home-like atmosphere and at the same time be so designed as to accommodate them and their particular eating habits in a comfortable fashion. It may be desirable to provide a semi-private (coffee room) lunch room for the staff. The dining area will be used three times a day.

Food preparation
This area must have the necessary space for two cooks to properly and conveniently prepare the meals three times a day for 16 people. It should be as simple as possible and appear more like a household kitchen than a commercial food preparation area. Garbage will not be concealed in this area, but rather in a more appropriate area.
Recreation
A person should learn to make worthwhile use of his leisure time as well as learn to work. Leisure time presents an opportunity for a change of activity or the change of attitude toward an activity. The behavior shaping treatment program should include opportunities to participate and develop skills in such common forms of recreation as: games, hobbies, sports, reading, parties, spectator activities, and music. These recreation activities in particular and recreation in general cannot be thought of as a separate function of the center, rather it must be thought of as a closely coordinated and integrated part of the overall scheme of the center to develop each individual to the fullest of his capabilities.

relationship schematic
Occupational Therapist

The type area this individual needs is an office type space for coordinating his work with the staff and patients and a work area. The work area could be tied into the recreation program to take advantage of the situations in development of each individual. However, the work area is where the therapist performs his treatment on individuals potentially serving all 22 patients.

Classroom type area for patients and staff

The first thing to clear up is that all of the 22 patients at the center will not necessarily require medical care. As mentioned previously, six of the 22 patients are transfers and respites and are at the center for temporary care, not medical treatment. However, while these six patients are at the center, they will be requiring some type of maintenance such as schooling, training, or job according to their individual capabilities and needs.
So, a classroom type area will be necessary to fulfill this need. Also, classroom type space will be necessary for educating and training the 16 new patients. Although these patients will be receiving medical treatment, they will simultaneously be started in some aspects of schooling and training as part of their prognosis and development. They will be involved in different levels and types of schooling and training on an individual basis and consequently this will have to be taken into consideration in the design of the classroom type spaces and relationships and also for the education and research aspects, observation space will need to be provided for. In addition to the above classrooms more (or the same) type space will be needed by the administration for informing and teaching the public, class tours, and new personnel orientation in groups not larger than 35 people.

relationship schematic
Rest rooms and shower areas

The design of the rest rooms and shower areas must take into account the type of people that are using them. Ease of access from the sleeping area and privacy of individuality is as important as is supervision by technicians.

Headquarters for technicians

This headquarters area must relate directly to the bathing, sleeping, dining, and recreation areas for maximum control of the patients. At the same time the relationship should create a home like atmosphere like parent or guardian rather than supervisory. Also, the headquarters acts as a source of control and information for the staff and physicians.

Headquarters for the regional educator

This headquarters space is for the regional educator to coordinate and supervise the special education and training for the region and assist the administrator. This space does not necessarily relate directly to any of the other spaces of the center.

Headquarters for the social service staff

This space will serve a similar function as the educators in that the head social staff worker will use the space...
as a coordination center for the region. It should also be inviting to the patients and welcoming to the public.

Headquarters for the regional administrator
This space will be for the individual who supervises the region in all aspects. He will work closely with his staff at the center who will consist of the following: social staff worker, educator, general practitioner, psychologist, occupational therapist, and head technician.

Headquarters for public health nurse
This space is for coordination of the public health nurse with the public in the region and the various functions she must perform. This space will also serve as a headquarters for the other nurses and must relate directly to the pharmacy as the nurses will operate the pharmacy. The space must also relate to the five hospital beds for close supervision of the patients and to the physician offices.
Physician headquarters (part time)
A headquarters and work space is necessary for the following part time physicians to diagnose, evaluate, and develop a prognosis for the patients: psychologist, neurologist, pathologist, orthopedist, speech therapist, and dentist.

Physician headquarters (full time general practitioner)
This space is the headquarters for the head physician and his internist with a adequate work area for diagnosis and evaluation. Its relationship to other functions is the same as the above basically.
Medical records clerk and typist
This area is for the secretary of the center directly related to all physicians by wire for direct communication. They also serve the administrative needs of the center for the staff and administrator.

Small laboratory
This space is for the physicians to conduct limited research, diagnosis, and evaluation for the benefit of the patients. It is also the main lab for the nurses and therefore must be easily accessible for both the nurses and physicians to their work.

Pharmacy
This function is necessary, but very small and consequently its space is insignificant. However, its relationship to the physicians, nurses, technicians, and patients is
very important if proper control and convenient use of the facility is to be enjoyed.

Conference
This area is for conference sessions of the administrator and staff, administrator and public, and many other similar type uses that the personnel of the center may require of the conference area. It should be convenient for its general use, provide privacy and a pleasant setting, and have the facilities necessary for refreshments such as coffee and donuts.

Storage
Lack of adequate storage facilities, in the long run, does more damage psychologically to employees of a business than the additional cost in dollars would do at the onset if adequate storage facilities were provided. Therefore adequate storage facilities will be closely worked out and provided for in the design stage of the building.
Lounge and waiting area

This area acts as a buffer zone between the public and the employees of the center. It allows for reaction time of the employee and also provides a comfortable and leisurely place for a person to wait. It will, in a sense, be serving as a lobby for the center.

relationship schematic
SUMMARY

This is an attempt to analyze and evaluate the efforts to create a home-like atmosphere for the rapidly retarded people who will use this new building during their early periods of development. It is my hope that the people can be made fully aware of their surroundings by seeing and hearing people around them. I have created this atmosphere by designing office-type areas so that as one walks into one area one veritably walks into another. In this way a continuous flow of information is not confronted by the usual hustle and bustle of people who are interested in nothing else.

One of the big problems we are confronting is the communication among the various departments. Therefore it is not possible to help solve this problem. I have created a conference room where meetings, interviews, and conferences are to take place. To make this obvious the departments have separate entrances and are centrally, where it is ideally situated in the building.

To further the communication between myself, doctors and the public (on a personal basis) and a convenient coffee room for casual and informal conferences is to take place.

In contrast to the more public aspect, this building I have tried to make the residents feeling an home-like at

summary

(To be submitted in June, 1970.)
This two building complex is the result of my sincere efforts to create a home-like atmosphere for the many mentally retarded people who will use this facility briefly during their early periods of development. It is a place where the public may be made fully aware of the services offered them by visually seeing and hearing the staff on duty, when they enter the facility. I have created this awareness for the public by opening up the office type areas as much as possible and exposing one service to another. In this way a person, seeking help and/or information, is not confronted by rows of office doors but by people, people who are interested in helping them!

One of the big problems in an organization such as this, is communication among staff members and the public. Therefore to help solve this problem I have provided a conference room where meetings, lectures, and discussions may be held. To make obvious the importance of this function, I have located it centrally, where it is easily accessible for everyone concerned. To further the communication between staff members and the public (on a person to person basis) I have provided a convenient coffee room for casual and informal conversation to take place.

In contrast to the more public medical administrative building I have tried to make the residential building as home-like as
possible, by keeping it low and avoiding using long straight walls. I have tried to keep every aspect of the building, such as the entrance and exits, as intimate as possible by defining them and keeping them small. I have provided spaces in the interior of the building that are conducive to increased interaction of the residents to help develop the family relationship that is so necessary, by such things as grouping of the private sleeping quarters, play areas in the hallways, and the openness of the main inside play area.

The control point of the residence is such that it is open, not a dominate feature, and at the same time ideally located for adequate control of all areas.

I have tried to make the entire complex alive and full of activity, a place for learning, living, playing, and working!

Sincerely,

Stanley M. Bell

20. Dall, C. J., Assistant Director, Department of Institutions, Helena, Montana.
21. Gonzal, Assistant Director of Education, Boulder River School and Hospital, Boulder, Montana
23. Perry, R. M., Superintendent of Boulder River School and Hospital, Boulder, Montana.
24. Riley, Director of Education and Training, Boulder River School and Hospital, Boulder, Montana.

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10. REPORT TO THE GOVERNOR. Montana; Department of Institutions, July 1, 1967 - June 1968.

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PERSONAL INTERVIEWS

20. Dell, C. S., Assistant Director, Department of Institutions, Helena, Montana.

21. Gonzal., Assistant Director or Recreation, Boulder River School and Hospital, Boulder, Montana.


23. Perry, R. M., Superintendent of Boulder River School and Hospital, Boulder, Montana.

24. Riley., Director of Education and Training, Boulder River School and Hospital, Boulder, Montana.

12. A NEW PROGRAM PLAN FOR THE MENTALLY RETARDED. Department of Institutions, December 1968.