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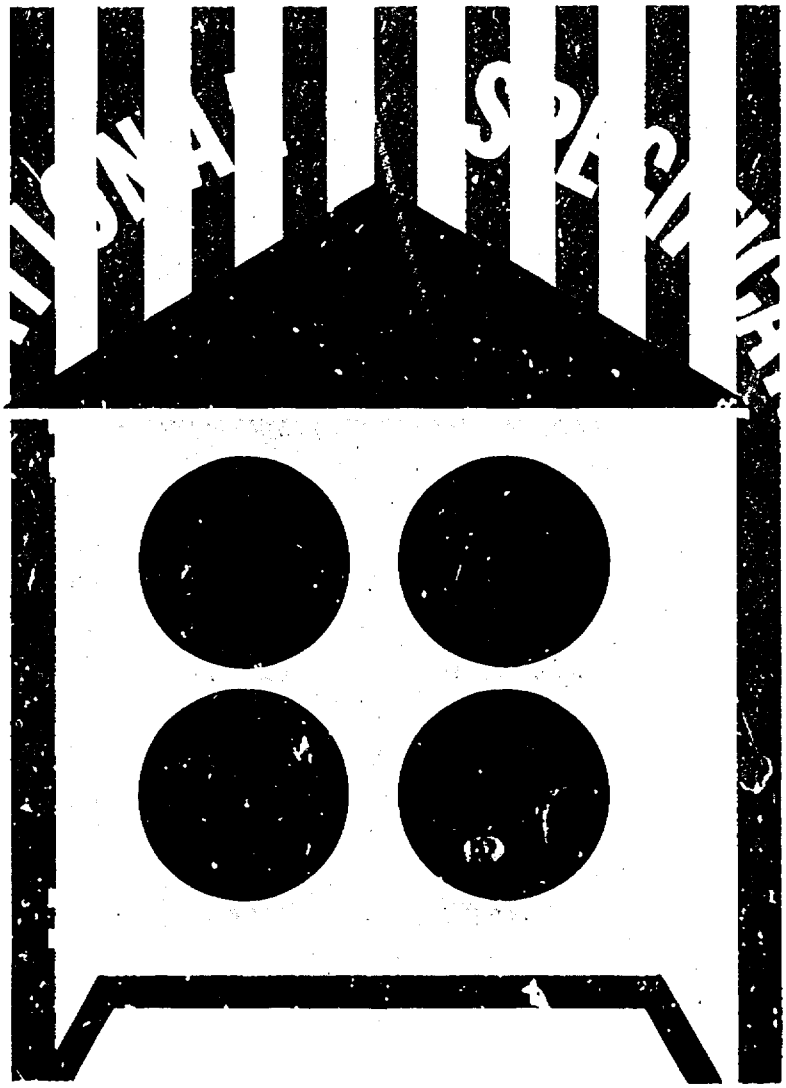
ABSTRACT

Because of rising costs and rapid educational change, the architectural design of a school becomes important to the accomplishment of an educational program. The contemporary architect must design a building with one eye on its construction and maintenance costs and the other on new materials and products and on expanding educational programs. This document presents the ideal elementary school design conceptualized by the Dade County, Florida, Board of Public Instruction as one that incorporates recent educational developments into its specifications. Specific desiderata are given for space requirements and utilization, lighting, resource centers, construction materials, furnishings, storage areas, food service, and other facilities. (RA)



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ELEMENTARY PROTOTYPE

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PREFACE

The last section of this set of educational specifications contains specifications for two Special Education classes. This section is optional. Not all new facilities will require Special Education spaces but many will. Therefore, the Special Education specifications are included here in the event the district wants to use them.

If the Special Education space is used, the space summary will not change because Special Education will replace two of the regular classroom spaces. With or without Special Education the new facility will still contain twenty eight classrooms and three kindergartens.

INTRODUCTION

The cost factor in construction is an ever-increasing problem in Dade County. The cost of school construction for even rather simple projects has gradually risen to the level of $25.00 to $28.00 per square foot. Many factors have caused this rise, basically the general construction cost throughout; however, there are many elements in construction which may be considered in helping to reduce this rising cost. In designing this facility the architect is expected to consider all items in terms of function, and this in turn for children rather than for adults. The limitations placed on the architect to design a functional and attractive school and at the same time reduce cost are extreme. However, to quote one architect in this system, "It is the real test of an architect to design within such limited parameters."

It cannot be overemphasized that all design factors must take into consideration cost. Of course, quality in environmental controls will be expected to be maintained; however, unnecessary items which add (even in a small amount) to the expense of the structure must be deleted. It is to the architect's benefit to delete these initially.

In order to give the project architect fairly firm directions for working on the basic design some of the limitations will be mentioned at this point. It would be to the project architect's advantage to study these limitations very carefully in order to save time, plan the kind of functional school needed, and slow down the spiraling cost of construction.

Educationally the interior environment of a school is most important as this is where the child spends most of his school life. Fortunately, in Florida the exterior environment can be created by landscaping, thereby reducing the need for expensive exterior design features. It is much more desirable from an educational standpoint to emphasize the beauty of the interior even at the cost of exterior beauty. The children spend many more hours inside the school than on the outside. The architect should use his imagination to develop an interior which says to the children, "This is a lovely place to live, to play, and to learn. You will have so much fun here that you will look forward to coming to school in the morning and hate to leave in the evening."

Simplicity of design should be rigidly adhered to by utilizing such factors as standard ceiling heights, rather flat roof structures, limited perimeters, reduced corners and other procedures which in the design factor can reduce construction cost.

The need for closely coordinated programs, the high cost of land, and the ever-increasing cost of construction have demanded that schools be compact structures. The compact school requires reducing the exterior perimeter as much as possible and using single structures for the total program. Such an approach reduces maintenance cost, operational cost, and the cost of air-conditioning. The square, hexagon, or circular form probably is the most functional form because it allows more efficient utilization of extremely expensive space. Such a form would make "orientation to site" much easier in urban areas where orientation must begin to consider street angles and code requirements on distances from building to the street.

Schools in urban areas are experiencing a great increase in vandalism and general security problems. The cost of replacement of broken glass panes runs into thousands of dollars annually and break-ins are frequent. Vandals take advantage of glass doorways and windows for entry. Even the smallest apertures are broken in order to insert wires to unlock panic bars. Electronic detection devices have been helpful but are limited in providing a solution to these security problems. Glass should not be utilized on building exteriors. Exterior doorways should be limited in number to safety code requirements as this reduces the number of potential entries for vandals. The architect should design locking devices with these factors in mind. Easy access to the roof has allowed entry through second level windows, sky lights or other openings. Such routes of entry should be eliminated in the design. Hidden nooks and crannies not only are problems of security but provide an area which can encourage some behavior problems.

Maintenance of school facilities is a major cost of operation particularly as the facility begins to age. The architect can save the school system hundreds of thousands of dollars in this area over the life of the building. Exteriors which are as nearly maintenance free as possible are most desirable. In many interior areas this must also be a major concern.

Many items found in schools have limited functions. These items should be eliminated unless it serves a function called for in the program. Folding doors, sliding doors, glass doors, glass windows and cabinetry are examples. These items not only are costly but utilize wall space and wall space is valuable as a working surface. Frequently, cabinetry placed in elementary schools is actually cabinetry designed for adults. Such cabinetry can be

utilized only by adults and will not only limit the accessibility of this storage space but will use up valuable wall space and add to the cost. Unfortunately only in a few schools are display cases installed with the lower base at eye level of children. This display case is for the children, not adults. In designing such items for elementary schools the architect should look at such features from the eye level of a seven or eight year old child.

The average land cost in the Dade County School System runs about $2.00 per square foot. In the more dense urban areas this cost is running as high as $30.00 to $50.00 per square foot. The trend in the Miami area, as in most urban areas, is towards increased density and therefore greatly increased land cost. With this in mind planning must consider site conservation practices. One procedure would be planning toward multilevel structures, however, for this project the method of land conservation should be in the orientation of the building to site.

The lighting specifications given the project architect by the board architects' office should be carefully considered. The trend in school construction is to plan areas which may serve dual functions but could always be used as instructional space. At the schematic design stage it probably would be a good procedure to seek the advice of the Dade County Public School staff regarding areas which could possibly be used as instructional areas and which would need the quality and quantity of light required of instructional areas. A recent publication by Educational Facilities Laboratories on light qualities would be useful in obtaining the proper lighting requirements in the school.

The color coordination in a school is extremely important. Younger children tend to like the pure primary colors; however, too extensive a use of such color is undesirable for the adults in the area. Usually attempts to get these pure colors are made through furniture selection and strips or panels in carefully selected areas. The use of color and the control of lighting quality are somewhat interrelated as large areas of white or nearly white wall surfaces are needed to get the reflection qualities to minimize shadowing. Even the carpet color if too dark will absorb excess light rays and make it more difficult to get the quality lighting necessary. This is one of the reasons that chalkboards, tackboards and other surfaces should be dark. The lighter colors provide more reflection and aid in getting quality lighting. Schools without windows need warm colors to provide the visual stimulation normally provided by exterior light sources.

Visual conditions range from light levels to brightness ratios to color on walls, floors, and furniture. Brightness ratios should not exceed 3-1 in any area. Light levels and general teaching spaces should be from 70 to 100 foot candles at desk level. In those spaces devoted to tasks requiring a high level of concentrated eye effort 150 foot candles is desirable. Teachers should have the capability of reducing (by banks or rows) or cutting off entirely light within the teaching spaces.

Teaching spaces with a good visual environment will have design elements interestingly composed. There will be contrast in color, but principal area and work surfaces are planned to avoid an "eye-jarring" contrast in brightness. Ceilings, walls, and floors enter the visual field. Visual discomfort

may occur if there is a significant difference in brightness. While it is necessary to control extreme brightness contrast in teaching spaces to maintain visual comfort, color variations should be employed to provide psychological relief.

While it is not desirable to have absolute silence, it is most desirable to maintain sound and noise levels that allow students and teachers to communicate with ease. In many new schools teaching spaces will be quite open. Consequently, acoustical control will be extremely important. In order to maintain this acoustical control carpeting should be utilized in practically all areas including the corridors, commons, library, and of course the teaching spaces. The ear is second only to the eye as a channel through which learning takes place. To hear well, the sound level should be uniform throughout the teaching space. Carpet absorbs noise from student movement, furniture movement, dropped books, and other contact noises. With carpeted spaces, portable dividers may be used to partition spaces with as high a degree of acoustical control as is necessary to meet the criteria for hearing. There are additional benefits inherent in the use of carpet in educational facilites. Two principal ones are those physiological and psychological advantages which tend to reduce fatigue and improve attitudes of those using the spaces.

Self-contained classrooms no longer provide the kinds and types of spaces needed for education. A variety of sizes and shapes is needed. Spaces that can be quickly altered both in size and shape offer many advantages for an ever-changing curriculum and equally rapidly changing methods of instruction.

Flexibility in spaces for instruction is a key factor in providing for individual instruction. Large group lectures, small discussion groups, and individual study areas must all be included if there is to be a maximum level of efficiency reached.

The most promising aspect of the utilization of various media is that aspect of more effectively individualizing the total instructional program. Greater use of machines and media for group instruction as well as individual instruction is possible. On an individual basis; tapes, film strips, or closed circuit television, and other media sources are becoming available to assist the teaching staff in the instructional program. For this reason schools should be planned with the provision for future easy installation of outlets for this extended building usage.

SCHEMATIC

The library or media center is shown surrounded by 8 pods--7 elementary classroom pods and a kindergarten pod. The schematic is presented in this manner to indicate that the library is the core of the school program and as such should be easily accessible to all academic areas. Openings from the library should be openings rather than doorways to add to this feeling. Space which surrounds the library as corridor should be arranged in such a manner that it could be used as part of the instructional areas. Access from pod to pod indicated by B and serving as corridor should be openings rather than doorways. Toilet areas are shown shared by pods with the exception of the kindergarten pod.

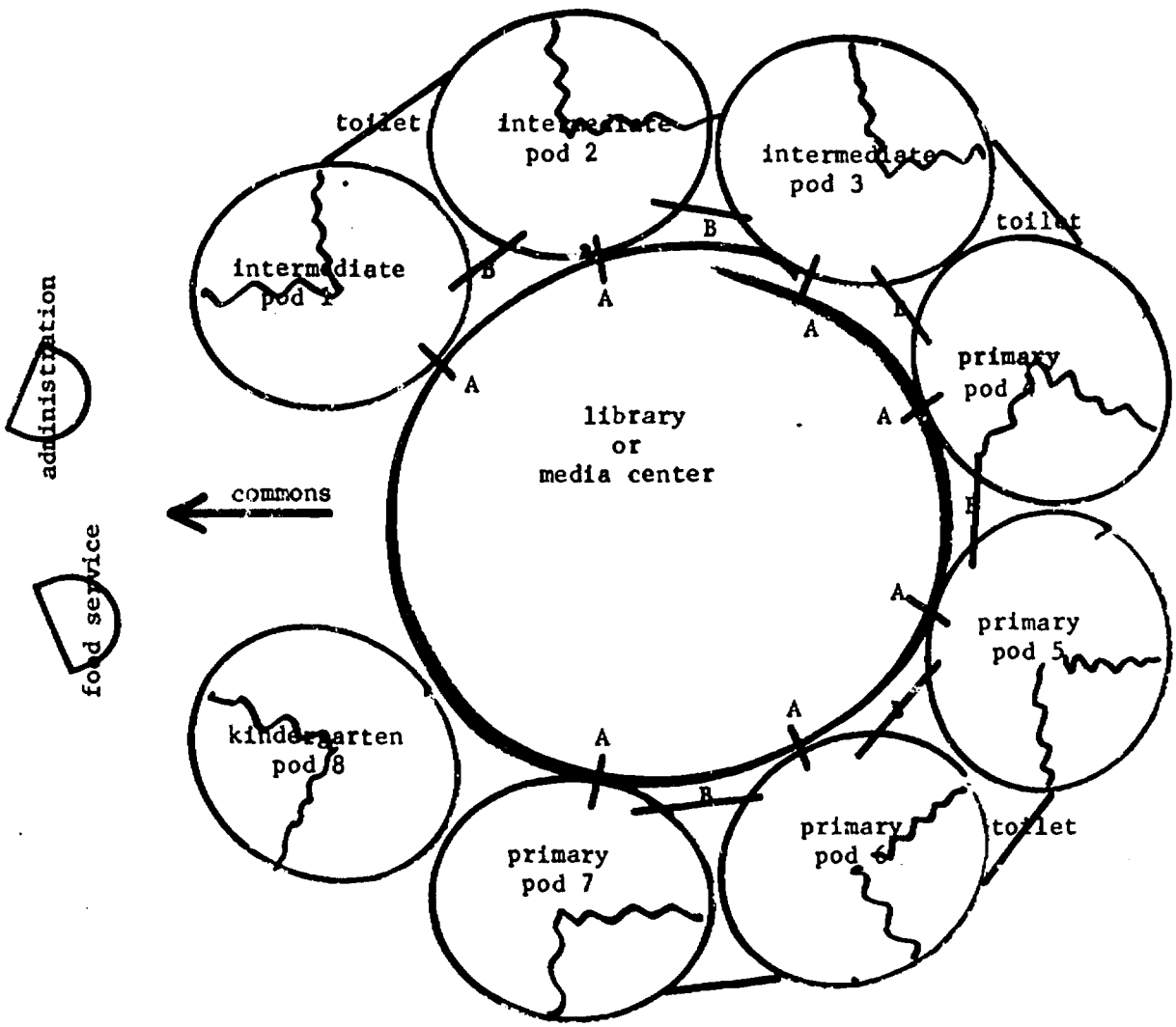
A greater degree of flexibility would be possible in the instructional areas if the Systems Grid structure were used. If the Systems Grid Program is not used, the individual pods will be open and divisible within, only by movable visual barriers such as chalkboards, tackboards and furniture. If the Systems Grid Program is used, the ceiling structure of the commons should receive the same treatment given the instructional areas. This would permit the area to be used for many purposes.

SPACE SUMMARY

	With Base Kitchen	With Satellite Kitchen
Administration	1,200 sq.ft.	1,200 sq.ft.
Food Service	2,060 " "	700 " "
Commons	3,000 " "	3,000 " "
Library or Media Center	3,545 " "	3,545 " "
Classrooms	25,200 " "	25,200 " "
Kindergarten	3,000 " "	3,000 " "
Conference Rooms 2 @ 200	400 " "	400 " "
Teacher Planning	300 " "	300 " "
Physical Education Storage	200 " "	200 " "
Net	38,905 sq.ft.	Net 37,545 sq.ft.
30%	11,671 " "	30% 11,263 " "
Gross	50,576 sq.ft.	Gross 48,808 sq.ft.

30% factor includes toilets, custodial, mechanical, electrical, walls, overhangs, corridors and covered walks.

SPACE RELATIONSHIPS



ADMINISTRATION

Administration with its office organization is not an end, but only a means in the operation of an efficient school. To the extent that the principal through his office practices, facilitates and promotes superior instruction and sound learning, will he justify the office layout discussed in the school plan. The centralization of office functions in a properly equipped administration unit makes for speed and the transaction of school business, eliminates waste in the duplication among administrative functions and increases generally the administrative efficiency of the entire staff. If space provisions are favorable, the performance of office duties and standards of efficiency should be materially increased.

The administrative office should be located near the main entrance of the school plant convenient to visitors and/or parents entering and leaving, and at the same time easily accessible from all areas of the plant. As a workroom the administrative unit is unsatisfactory if it does not provide space that is both private and free from confusion. The guidance area has traditionally been attached to the administrative area, though this practice is questionable. Specifically designed spaces have not yet been provided in elementary schools and guidance personnel, except in special cases, have not been a part of the elementary school staff. As a result of this the availability of professionally trained guidance personnel has been limited. When these services have been

provided by visiting guidance personnel usually some office in the administrative area has been used as a temporary guidance area. If the desired flexibillity is real, as in this prototype elementary school, a guidance space could be provided if the program so demands.

I PROGRAM

The administrative suite of offices is the service center for the school and its supportive community. The suite serves as; 1) The basic communication center of this school. 2) A clearing house of the school business. 3) A counseling center for school patrons. 4) A counseling center for teachers and students. 5) A research division of the school for the collection, analysis and evaluation of information regarding activities and results. 6) The repository of school records. 7) The planning center for solving school problems and for initiating school improvements. 8) A resource center for encouraging creative work. 9) A resource center for coordinating school and community relations. 10) The coordinating center of school enterprise.

Discernible Trends

The population explosion, industrial development and migration will bring about a marked increase in enrollment for years to come. The amount, content and variety of educational processes are continually changing in the educational field because of continual growth in the areas of science, invention, discovery, mechanization, industry, population, mobility, and interest. The tasks of the administrative

personnel have been expanded. The activities of the area now include visiting guidance personnel and many other functions provided by visiting specialists.

Activities

The activities of the administrative area are many in number. The organization and supervision of the total school program must be centered here. Public relations functions and contact with parents and other community members takes place in the administrative area. Record keeping and accounting functions will be housed in the area as well as the conducting of legal responsibilities such as attendance and accounting. The group testing program will be coordinated from the administrative area. Conducted here will be counseling among the counselors, teachers, parents and students. The central office staff will perform such functions as normal clerical duties, communication on a schoolwide basis, mail handling and dissemination of information. All general health functions will be carried out in the clinic.

II PHYSICAL REQUIREMENTS

Principal's Office — 180 Square feet

The principal's office will contain the principal's desk, chair, and filing cabinet in addition to two or three comfortable chairs for visitors. The principal's office and the assistant principal's office should contain a bookshelf for storing professional magazines and books. This storage should be approximately 8 linear feet, 6 feet in height, and 12 inches in depth. The bottom two feet should be covered storage area with a simple sliding door process. The upper portion should be open.

Assistant Principal's Office — 120 Square feet

Same provisions should be made as in the principal's office.

General Office — 300 square feet

The general office will be the center of the administrative unit. Usually a counter separates the general office from the waiting room. The principal's office and the assistant principal's office open directly off the general office. The clinic and workroom should open off the general office more in the direction of the general school area.

The general office may have from two to four persons working in the area. At least one regular type desk should be provided for a person

handling general bookkeeping, auditing, and record keeping. The console for interschool communications should be located near the counter and could possibly be incorporated into counter space in order that the person serving as a receptionist could serve in this capacity without having to move from one position to the other. The general office should probably contain one other desk and three or four four-drawer filing cabinets. The architect should take these furniture items into consideration when planning traffic patterns.

Waiting Room — 150 square feet

The waiting room in the administrative unit serves as a public waiting room and as a waiting room for students waiting to see the principal or other purposes. For this reason the waiting room should have one entrance directly to the front of the school and another entrance toward the school area for students entering the administrative area. It may be that one entry would suffice both functions depending on the placement of the administrative area. The waiting room should be an attractive and welcoming entry to the school and should be furnished with several comfortable chairs and an attractive table for magazines or ashtrays.

Workroom and Mailroom — 250 Square Feet

The workroom area will serve many functions. Volumes of materials will be reproduced for use by the administration or the teachers. For this

reproduction, mimeograph machines, spirit duplicators, or even possibly offset printers, may be utilized. Most of this machinery requires electrical outlets and this must be considered in the planning. Teachers will go into the mailroom which is a part of the workroom in order to check their box routinely in the morning. For this reason ready access should be provided from the direction of the instructional areas such that teachers can enter the mailroom and check their mailbox without going through the general office. A bulletin board should be provided very near the mailboxes for posting various types of communication.

The workroom will be used for the storage of materials utilized in the administrative area and for other functions such as making coffee for special guests. The workroom area should open easily into the general office and can actually be an extension of the general office; however, it should be visibly screened from the waiting room area. Several types of furniture required in the workroom area will be the responsibilty of the architect. Six linear feet of general kitchen type cabinetry with overhead storage, formica top, sink and below counter storage. Approximately eight linear feet of adjustable height shelving fifteen inches in depth and approximately seven feet high should be provided. Another storage area of eight linear feet, adjustable height shelving, twenty-four inches deep and counter height with formica top should be provided.

The mailbox area in the workroom should contain approximately forty boxes.

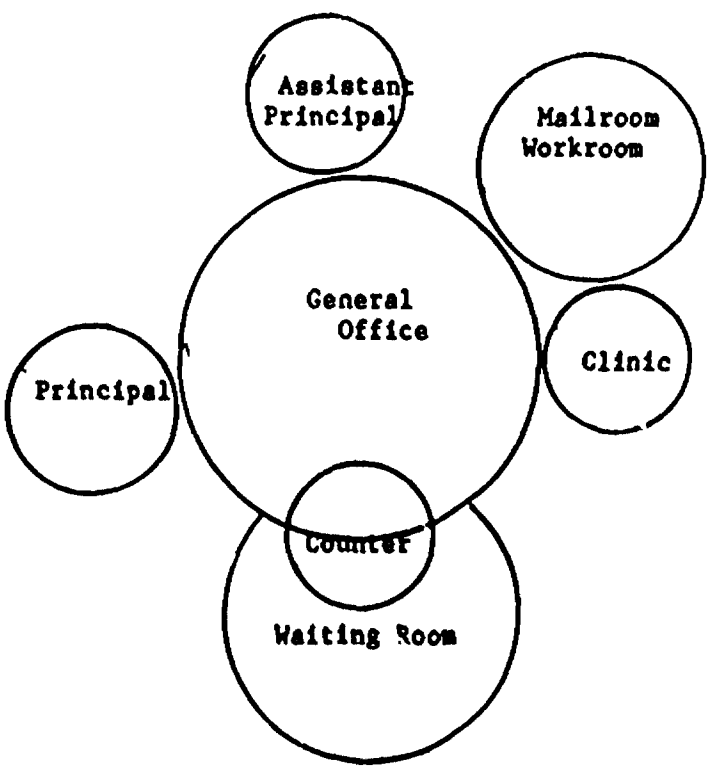
Clinic 200 Square Feet

The clinic should be entered from the general office area as usually the office staff must supervise this area. As the clinic is entered there should be near the entrance approximately four linear feet of counter type space with sink, overhead storage and undercounter storage. Very near this should be an entrance to a room containing a toilet and shower. The nurse or clinic assistant will have a small table and chair near the counter area. A phone jack should be provided for this table area. Exiting off this area will be a room with enough space for two small beds.

SPACE SUMMARY

Principal's Office	180 Square Feet
Asst. Prin. Office	120 Square Feet
General Office	300 Square Feet
Waiting Room	150 Square Feet
Workroom and Mailroom	250 Square Feet
Clinic	200 Square Feet
Total	1,200 Square Feet

SPACE RELATIONSHIPS



LIBRARY or MEDIA CENTER

Today, as never before, there is a need for children to be taught research skills. The fast explosion of knowledge has made it impossible for a person to learn all there is to know on any given topic. Schools must provide, as part of the program, a source of information and trained personnel to aid boys and girls in learning to use this depository. This requirement in the program is the function of the Library or Media Center.

In the prototype elementary school the Library or Media Center will be the central core of the school program with all academic areas having easy access. Accessibility should be such that the library almost becomes a part of each instructional area.

I PROGRAM

The educational objective of the Library or Media Center is to provide materials for reading, enjoyment, information and inspiration. An adequate supply of up-to-date well balanced reading materials must be provided. A good source of reference materials will be available. Film projectors, film strip projectors, film strip pre-viewers, video instruments, taping and recording equipment and other types of audio-visual equipment will become the responsibility of the librarian as it applies to the program. Equipment which helps in the transmission of information will be incorporated in the program. Program sources for such equipment will also be a responsibility of the program.

Discernible Trend

The library, as an information source, is changing dramatically with the onset of electronic teaching devices. Technology is changing so rapidly that by the time good practices have been developed for handling one type of equipment it becomes either obsolete or has some limitations placed on it by the development of a newer and better model. With technology changing so rapidly, the library program must permit flexibility to adapt to these changing techniques.

Activities

The following activities will take place in the library:

free reading
browsing in books and magazines
story telling
investigation
small group conferences
checking out books, equipment and materials
using audio-visual aids and materials
learning library skills

II PHYSICAL REQUIREMENTS

Reading Room — 2,445 square feet

The reading room is the main library area and includes the stacks, reference area, browsing area, check out desk area, newspaper and magazine racks, carrels, and the catalog area.

The architect will be responsible for providing the stacks for book shelving and the eight carrels as the carrels require electrical connections. Shelving should be adjustable height.

The stacks should have enough shelving to hold approximately 10,000 books. Part of the stacks must provide shelving for easy read books. The easy read section should be separated in some manner from other shelving.

The easy read area will contain 9 sections of shelving, length 3 feet, height 36 inches, depth 12 inches each section containing 3 shelves 12 inches in height. This would total 81 linear feet and based on 18 easy read books per linear foot would allow shelving for 1,458 books. The remainder of the stack area should have 8,550 books. The required shelving is 855 linear feet based on 10 books per linear foot. This would require 71 sections 3 feet in length. Each section is 3 feet long with 4 shelves 12 inches deep adjustable height with an overall maximum shelf height of 64 inches.

The reference area will contain several sets of encyclopedias, atlases, dictionaries, maps and many indexed sources of information. The area will be established by using purchased storage cabinets to determine boundaries. 200 to 300 square feet will be needed for this area.

The browsing area will be an informal space in the library containing some comfortable, living room type furniture. Students will pick up books and stop in the browsing area to skim over them before either checking out or discarding as not wanted. The newspaper rack should be placed near the browsing area and may be a method of separating the browsing area from other areas in the main reading room.

Carrels should be 30 inches wide with a light source and electrical outlet for the use of audio-visual equipment. Two sets of four carrels arranged like swastikas located almost anywhere in the library. Carrels must not be high enough to block the view of the librarian. The purpose of the carrel is to block peripheral vision and if the carrel is to accomplish this the sides must project approximately 6 inches from the desk edge to surround the seated student. The student must fit deep in the carrel when in a working position.

The program calls for extending the use of audio-visual aides. The architect must provide for this at several locations in the main library. Portable listening and viewing equipment could be checked out and taken to these areas. The reason for mentioning this is to permit the architect to provide electrical outlets and space for activity in the planning.

Conference Room — Two at 150 square feet — 300 square feet

Each conference Room should contain a set of adjustable height shelving 6 feet long with a maximum height of 54 inches. Electrical outlets should be available for use of audio-visual equipment.

Workroom — 400 square feet

All identified storage in this area will be planned by the architect.

The workroom will serve many purposes. It is the office for the librarian and as such must provide a desk near the entrance with a visual view of the library area. Space for a typewriter must be adjacent the desk. The workroom is a place to repair, check, sort and catalog books. It is the storage and repair location for audio-visual equipment.

A/V Storage — 400 square feet

The audio-visual area should have a counter near the entrance to receive and check equipment. The counter should be 4 feet long and 24 inches deep. Overhead storage should not be placed above counter as large items of equipment will placed here. Below counter should open adjustable shelving. Audio-visual area should have 6 linear feet of open adjustable shelving 24 inches deep and 84 inches high. It should also contain 8 linear feet of open adjustable shelving 15 inches deep and 84 inches high.

The librarian's workroom should have 8 linear feet of counter top kitchen type cabinetry with sink and closed storage above and below. The area should have 6 linear feet of counter top storage, not kitchen cabinet style, with open adjustable storage above and below and extending to 84 inches high. The area should have 6 linear feet of 24 inch deep open adjustable shelving 84 inches high and 15 linear feet of 15 inch deep open adjustable shelving 84 inches high.

SPACE SUMMARY

Reading Room		2,445 square feet
Conference	Two at 150 square feet	300 square feet
Workroom		400 square feet
A/V Storage		400 square feet
	Total	3,545 square feet

PRIMARY

The areas in which the primary children spend most of their school day should provide an atmosphere which expresses acceptance, warmth, and beauty. One of the basic needs of primary children is to feel wanted, accepted, and secure. The program at this level can render no more important service than to help each child to become an intellectually curious, loving, self-confident, responsible individual. In order to accomplish this the spaces must make provision for students to work in large or small groups and as individuals.

I PROGRAM

Educational Objectives

Build a strong foundation for communicative and qualitative skills through the language arts and mathematics area of the curriculum.
Give special attention to each pupil's physical, social and emotional characteristics and develop moral and spiritual values.
Fit instruction at this level to the needs of the individual child.
Develop proficiency in subject areas.
Develop respect for property and rights of others.
Develop a foundation for improved group living in the classroom and community.
Provide for individual expression through art and music.
Develop an appreciation for conservation of human resources.

Discernible Trends

The technology explosion has provided a vast array of equipment which can be adapted to the instructional program and educators are industriously attempting to make this adaptation in order to improve the efficiency of educational programs.

The classroom is changing in fashion from one group of students with one teacher, to larger groups of students with several teachers and shared responsibilities.

Open and flexible spacing is providing more opportunity for team teaching which attempts to utilize the greatest skills of two or more teachers with a single group in cooperative teaching.

Grade lines are no longer the hard fast divisions once seen in the classroom. Now children frequently move from area to area finding and working with groups which make for more efficient learning for the individual child.

Activities

story tellings
role playing
rythmics
painting
paper mache

cutting and pasting

individualized reading

dramatic plays

vocabulary building

creative writing

singing

listening activities for large and small groups

organized and free play

using films

making tapes

using transparencies

using other audio-visual aides

drawing

creative use of other art media

personal hygiene

perceptual training

motor development

II PHYSICAL REQUIREMENTS

Furniture and Equipment

The primary area should contain four equal sized pods. Each pod should contain four groups of students or approximately one hundred twenty students. Each pod should be designed so that one of the four teaching spaces can be partitioned off via sliding or folding walls. In furnishing the pods and in designing such items as water fountains and toilet

areas the size of the children should be considered as five year olds in the primary area and gradually increasing in age and size as you move from pod to pod around the library or media center until the last pod is reached which will contain the larger and older students. The pods should contain a variety of furniture including many flat top desk surfaces for individual students, some trapisodal tables for small and large groups of students, some circular table working areas with as much color as can be obtained in the furniture to lend beauty to the area. Metal strips and brackets should be placed on permanent walls of each teaching space to permit adjustable shelving. The number of brackets and metal strips should be sufficient to permit the use of at least three shelves, each six feet in length.

In each pod area two hundred square feet has been allowed for teacher planning space. This can be xible either grouped all together or in four different locations to suit the need of the teachers using the area. Each teacher will need a desk, chair and file cabinet.

Chalkboards should be metal backed and adjustable. Vertical metal strips should be placed along the wall which would allow chalkboards to be positioned in many different areas and at the level required. Tack boards and flannel boards could also be adjustable. Light colored chalkboards and tack boards should be utilized in order to help improve the quality of the lighting in the area and because the ratio of brightness will not exceed the three to one ratio which is acceptab.. for visual acuity. In pod type construction there is less wall space than in the conventional classrooms

and it may be necessary to utilize movable chalk and tack boards in order to meet the minimum standards required.

Special Requirements

Each pod should have a fountain and hand washing area. Under this area the architect might consider the use of tartan, Uniturf, or a similar substance.

Restrooms should be located adjacent to each instructional area and should be accessible to all. Restrooms should be ventilated and should feature child size fixtures. The restrooms could be located between the pods and the entry to the restrooms could serve as a means of moving from one pod to another. The entrances to the restrooms should be visable from the pods.

There may be connectors between the pods toward the exterior of the building or away from the library. If such is the case the corridor space could be covered with Tartan or Uniturf flooring and a small amount of counter space with sink provided for wet area activity such as pasting, painting, etc.

SPACE SUMMARY

16 Teaching spaces @ 900 square feet	14,400 square feet

INTERMEDIATE

The intermediate grades including grades 4, 5 and 6 will comprise four of the equal sized pods. As described in the primary program there will be a general increase in size and age of the children as one moves from pod to pod. Activities change and facilities will become somewhat more specialized by furniture arrangement more than by the construction of the facility.

I PROGRAM

Educational Objectives

Develop skills of the basic subjects on the child's educational level.

Develop ability to work on individual projects.

Develop cooperative working habits in group work.

Create an atmosphere conducive to learning.

Develop the ability to read fluently with comprehension in each subject area.

Develop the ability to secure factual information by reading, experimenting, and observing.

Learn to use audio-visual materials both for broadening the learning plateau and for communicating ideas to others.

Discernible Trends

The trends, as in the primary area, are more towards individualized instruction, non-gradedness, team teaching, and in general allowing the student to work at his own learning level. Students are expected to be more self disciplined under such circumstances and self directed. From this comes the acceptance of responsibility and growth in the social arena.

Activities

large and small group work

students utilizing audio-visual equipment

oral reading

science experiments

art work

rythms

folk games

acting out plays

III PHYSICAL REQUIREMENTS

Furniture and Equipment

Furniture and equipment as in the primary area should be varied in order to provide the flexibility necessary for program needs. The height of desk tops and tables should be based on the size of the

children utilizing the pods. Movable food tray storage should be provided in each pod to hold one food tray for each child.

Special Equipment

The intermediate areas will require specialized furniture in the science area. This will vary depending on the program and can be supplied by movable storage and movable experiment centers.

SPACE SUMMARY

The intermediate area will consist of three pods with four teaching spaces per pod. The pods and teaching spaces should be designed and constructed as the primary pods.

12 teaching spaces @ 900	10,800 square feet

KINDERGARTEN

INTRODUCTION

The kindergarten program has become an integrated part of the elementary school. Educators have rightly concluded that a child can learn and should be taught many things before they reach six years of age. The kindergarten program is to be considered a permanent expansion of the educational goals. In achieving these goals the program is directed toward the same types of objectives as the succeeding twelve years program.

SPACES

Classroom (quiet)	Three	2,150 Square Feet

Under the present kindergarten program in Dade County a kindergarten space is used by two groups (20-25 each) of students. The first group arrives in the morning and leaves at noon. The second group arrives shortly after the noon hour and stays for the afternoon. This is an important consideration in determining the amount of storage space for consumable items and equipment.

The kindergarten space should be divided into four areas. Three of these areas shall be designated quiet areas and should be identical. The fourth space will be called the activities area. The three quiet zones will surround the activities area. If this is done, children from each of the quiet spaces may utilize the same activity area.

The quiet areas should be carpeted and should be separated from the activity area by either folding or sliding walls. It is not necessary for these walls to have a high decibel rating. If sliding walls are selected, care should be taken in the selection. Walls which will be hard to operate and pinch the ends of fingers when opening should not be procured. The quiet areas should contain coat hooks near the entrances, and each should also contain a full length mirror. There should be 30 linear feet of adjustable shelving. This shelving should extend from the floor up to six feet high and be 30 inches deep. These shelves need to be large enough to storage building blocks, boards, games, and other objects that stand up. In the center of the back wall a counter with cabinets on each side should extend out into the room five feet. On either side of the counter, along the wall, there should be metal strips attached. These strips are of such construction that hooks and/or clips may be attached. Drawings or other paper work that the student made may be hung on these clips or hooks.

A partly covered patio would be an added asset, if this is possible. This could be a patio so arranged that it could be shared by all students from each area.

Commons 700 Square Feet

This space should be located so that all three quiet areas open into it. Here is where the students do their painting, ride tricycles, play in

the sandbox and other activities which will be noisy. The floor should be of Uniturf or some other similar substance. Two island sinks should be located in this area. The sinks should be located where they are as accessible to the three quiet areas as possible. The water outlets are the regular type and not the ones which raise up out of the sink. If they are raised up high the students are showered with water each time the water is turned on with much force. Toilet facilities should be near this area.

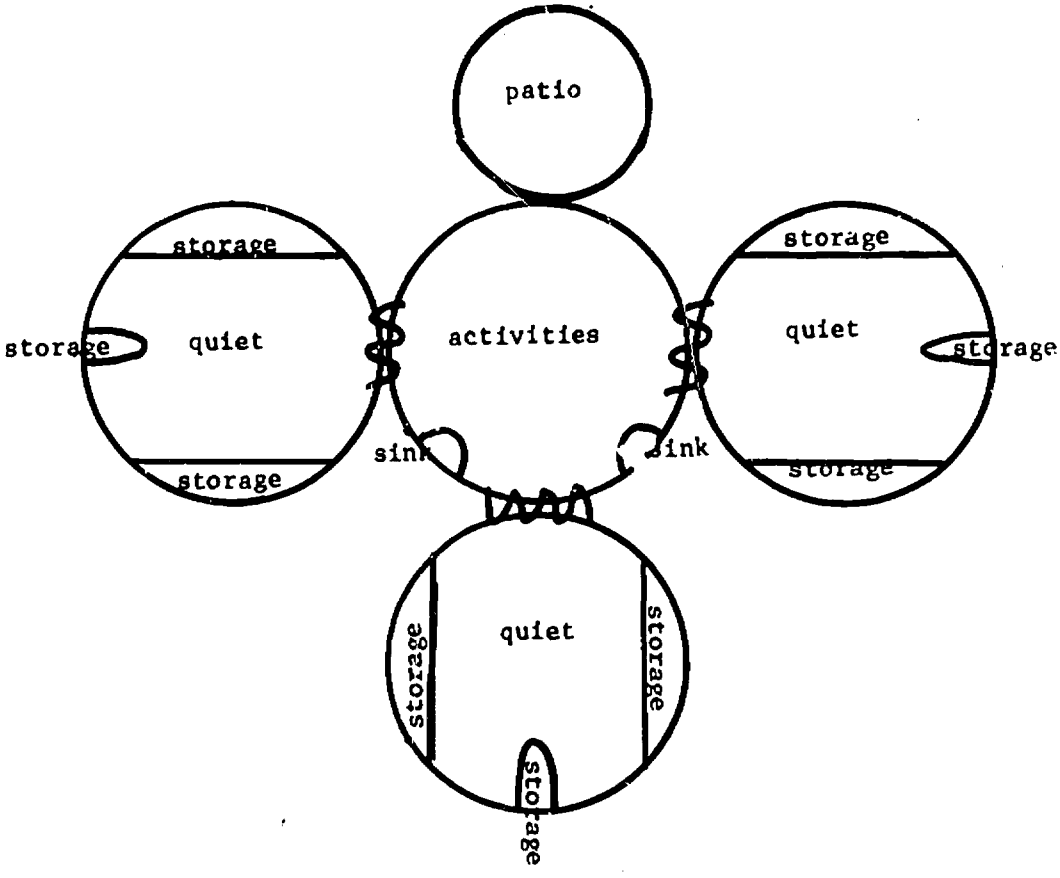
Teacher Work Space 150 Square Feet

Three teachers are to be located in this area. Each should have a desk. This desk may be of the type that has a top (writing surface) supported by a two-drawer filing cabinet under each end. The work space should be as centrally located to the quiet areas as possible. Adjustable shelving, 24 inches deep, should be along all blank wall space. Regular adjustable shelving may be used above the desks.

SPACE SUMMARY

3 classrooms (quiet)	2,150	square feet
1 activities area	700	" "
1 teacher work space	150	" "
Total	3,000	square feet

SPACE RELATIONSHIPS



FOOD SERVICE

Introduction

The food service area is divided into two areas -- Commons and Kitchen. The commons area is not only for dining but for multi-purpose functions. When not in use for dining, large groups of students may use the space for such activities as art instruction, viewing films, and large group testing or instruction. During after-school hours the space may be used for PTA meetings or any other activities which requires large space. A portable stage could be used to good advantage in such instances.

This multi-purpose function requires an environment which demands special considerations in architectural design.

The kitchen should be designed only for the preparation and serving of hot food. When considering where to locate the kitchen, thought should be given to accessibility. Food must be delivered to the kitchen and refuse or garbage hauled away.

Activities

Commons

Students eating lunch and possibly breakfast will be the major function of this space. However, many other activities will occur here when meals are not being served. Such things as art instruction, testing, PTA meetings, open house meetings and other activities will take place here.

Kitchen

Preparation of meals, dishwashing, and refrigeration are the main activities which will occur in this area.

Receiving

This area is located between the storage space and the exterior of the building. It is here where all supplies are delivered and brought into the building, and then on into the storage space or kitchen.

Dry Storage

All goods in cans and sacks are stored in this space. It should be located as near as possible to the kitchen and receiving area.

Serving Area

The serving line should be arranged where two lines of students could be served at the same time. A cashier would also be located in this space.

Office

A desk, chair and file cabinet will be located in this area where the cafeteria manager can maintain her records

Spaces and Furnitu

Commons 3,000 square feet

Along two walls of this large space should be sections of counters, sinks and cabinets. The sections of counters should be twenty feet in length and placed in four areas. The best solution would probably be

to locate one twenty-foot section at each end of a wall and the same arrangement for the opposite wall. Each section of counter space should contain one sink with hot and cold water. Cabinets for storage would be located above and below the counter top. All of the shelving must be adjustable.

Drinking fountains should be in the commons area, but not located where the traffic would interfere with the serving line. The dish and tray return window should open into the commons but care should be taken in not designing a situation where the students returning trays must cross the serving line.

Differing configurations of tables should be used. Whether the tables are round, square or rectangular, the tops should all be hard plastic. Chairs should be of several different colors.

Kitchen 900 square feet

Walk-in type refrigerators are needed for food storage. Other items of equipment include ranges, ovens, steam-jacketed kettles, milk coolers, dishwasher, vegetable peelers, choppers and slicers. All metal tables, racks, etc. must be of stainless steel. The dishwashing area should be located near the pass-through window with a hood over the dishwasher to remove odor and steam. The ranges and ovens should be hooded. When meals are not being served, the kitchen and serving area should be closed off from the commons. By doing this the commons can be used as an instructional area.

Dry Storage 300 square feet

This space should contain all the non-perishable food items. Adjustable shelving should cover all the walls from floor to ceiling.

If the space or footage can be found, it would be desirable to have a small storage space with lockers for the cafeteria personnel, a lavatory and toilet.

Serving Area 400 square feet

The serving area should be designed to accommodate two lines. Steam tables should contain enough holes to allow for the serving of full lunches to two lines at the same time. The cashier should be situated where she could take money from both lines if necessary. Waist-high and counter-length tray rails are necessary. Besides the complete double steam counter there should be mobile tray holders and space where flatware can be stored.

Receiving 200 square feet

This should be a dock where supplies can be located and unloaded with a minimum of effort. Also in this area there should be racks built to store cleaned garbage cans.

Office 60 square feet

A desk, chair and file cabinet are needed for this space. It should be separate from the kitchen with a glass panel where the manager can supervise her kitchen while in the office.

Employees Lockers	100 square feet
Refuse Area	100 square feet

SPACE SUMMARY FOR BASE KITCHEN

Kitchen	900 square feet
Receiving	200 " "
Dry Storage	300 " "
Serving Area	400 " "
Office	60 " "
Commons and Art	3,000 " "
Lockers	100 " "
Refuse Area	100 " "
Total....	5,060 square feet

SPACE SUMMARY FOR SATELLITE PROGRAM

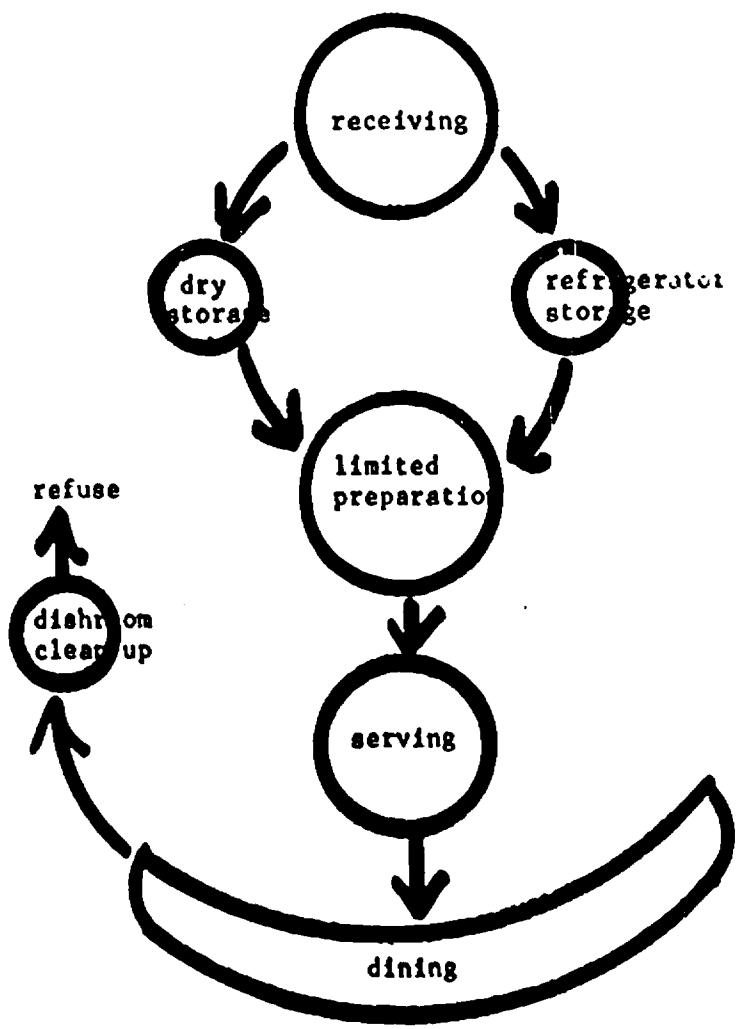
Commons and Art	3,000 square feet
Serving	400 " "
Storage	200 " "
Can Wash	100 " "
Total....	3,700 square feet

Functional Sequence

Food service facilities should be planned to provide a natural and logical flow of materials. This should be accomplished with minimum cross traffic and a direct flow of materials and work.

F L O W C H A R T

Functional Sequence



MUSIC

The construction of the prototype elementary school at this point is being considered as a school which would be bid either as a system school or as a non-system school. If the systems approach is used in the construction, the music area would have greater degrees of flexibility as it could be given an area in some of the pods or an area in the commons. If the program of construction does not go towards the systems construction then the music program will probably be carried on in the commons area. Which ever plan is used the music program will have adequate space for instruction although a special area has not been delegated for the program.

PHYSICAL EDUCATION

In the prototype elementary school although special physical education facilities have not been provided there are many opportunities to conduct physical education programs within the structure. The large size of each pod and the large size of the commons area both could possibly be utilized for various functions of the physical education program. On rainy days or on hot days there is little reason why the commons should not be used for some restricted type games and activities. As the commons area will be carpeted rythmic activities and other similar activities might well become an everyday activity in the commons area.

A small 200 square foot building has been provided for storage of physical education equipment on the exterior of the building. This should be planned for various types of storage of balls, bats and outdoor activity equipment.

The physical education storage building will also serve as the area to house the pump needed in the irrigation program and inflammable storage.

CONFERENCE ROOMS

2 @ 200 400 square feet

One of the conference rooms should be located in the administrative suite and the other in the intermediate instructional area.

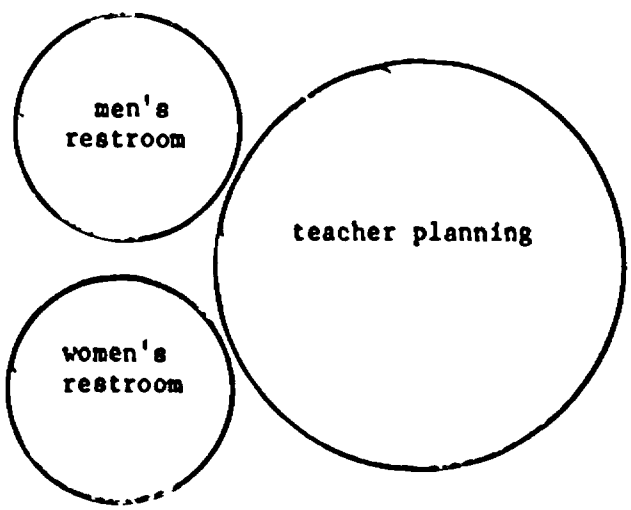
The space in the administrative area would be used by the principal and assistant principal when they have meetings with parents and/or teachers. The room in the intermediate area will be used by students and teachers for small group work.

Each of the two rooms should contain 64 square feet of chalkboard.

Teacher Planning 300 Square feet

This space should be where teachers may go to relax for a few minutes. A soft drink machine, coffee urn, and a few pieces of lounge furniture should be placed in this room. Faculty restrooms should be located nearby but not where the restroom doors open into the planning space.

SPACE RELATIONSHIPS



SPECIAL EDUCATION

INTRODUCTION

Many children are mentally handicapped and are incapable of learning as they should. The reasons are many and the capabilities are varied. Even though these mentally handicapped children cannot progress as normal children do, they should be given the opportunity to develop to their fullest capacity. Such an opportunity will exist in this new elementary school. Space and equipment, specially designed for handicapped children, will be designed and integrated into the rest of the school. Many times the special education areas are kept away from the other school areas. Consequently, the handicapped child becomes even more mentally handicapped when he realizes that he is being pushed aside. The chance of such an attitude developing at this school will be minimal.

SPACES

Quiet Areas	2 @850	1,700 Square Feet

The classroom space should be divided into three sections - two identical carpeted areas of 500 square feet each divided by an uncarpeted space or commons of 700 square feet. The commons would have operable walls separating it from the carpeted areas on either side. Such things as walking boards, balance beams, and mats would be placed in the commons area. All such equipment would be to help

the handicapped child develop his motor skills. At both ends of the commons, cabinets should be constructed from the floor up to 36" high with a counter on top. All shelving in these cabinets must be adjustable.

Each carpeted space should contain 64 square feet of chalkboard and tackboard, double sinks within a counter seven or eight feet in length, and at least ten more feet of storage space along some vacant wall. Carpeting in the sink area should not come within ten feet of the sink and counter.

The walls should be painted with muted colors and the toilets should be located in, or very close to, the teaching area. The commons area should have one full-length mirror.

Teacher Work Space 2 @ 50 100 Square Feet

This space will house two teachers. A one-way glass window should be in the wall that separates the teacher work space from the classroom area. If possible the work space should open up into both the carpeted areas. If this cannct be done, consideration should be given to putting individual work spaces in each carpeted area. Regardless of where the work space or spaces are, each should contain a desk and two chairs, filing cabinet for each teacher and shelving where there is blank wall space.

SPACE SUMMARY

Classrooms	2 @850	1,700 Square Feet
Teacher Work Space	2 @ 50	100 " "
	Total	1,800 Square Feet

SPACE RELATIONSHIP