R E P O R T R E S U M E S

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THE EDUCATION PARK--WHAT SHOULD IT BE--EDUCATIONAL SPECIFICATIONS FOR THE NORTHEAST BRONX EDUCATION PARK.

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PRESENTED IS A DETAILED REPORT ON PLANS FOR AN EDUCATIONAL PARK IN THE BRONX IN NEW YORK CITY. THE SPECIFICATIONS FOR THE PARK ARE BASED ON THE MAJOR CRITERIA OF (1) PROVISION FOR SCHOOL INTEGRATION, (2) DEVELOPMENT OF A SOUND COMMUNITY-SCHOOL RELATIONSHIP, (3) IMPLEMENTATION OF GRADE LEVEL REORGANIZATION AS SET FORTH BY BOARD OF EDUCATION POLICIES, (4) ORGANIZATIONAL AND CURRICULAR INNOVATIONS, (5) IMPROVED ARTICULATION AMONG THE THREE SCHOOL LEVELS, AND (6) ECONOMY THROUGH JOINT USE OF FACILITIES. THE REPORT POINTS OUT THAT THE SITE THAT HAS BEEN SELECTED MAKES INTEGRATION OF THE STUDENT BODY FEASIBLE BECAUSE IT IS ADJACENT TO A PLANNED MIDDLE-INCOME, PREDOMINANTLY WHITE COOPERATIVE APARTMENT DEVELOPMENT, ADJOINS A NEIGHBORHOOD THAT HAS A LARGE EXISTING NEGRO POPULATION, AND WILL BE NEAR A LOW-INCOME HOUSING PROJECT. IT IS PLANNED THAT THE PARK HAVE A STUDENT CAPACITY OF 10,400 AND THAT IT BE USED FOR AFTER-SCHOOL STUDY CENTERS, EVENING HIGH SCHOOLS, COMMUNITY EDUCATION, AND SUMMER PROGRAMS. THE PARK WILL BE ORGANIZED INTO A PRIMARY UNIT FROM KINDERGARTEN THROUGH FOURTH GRADE, AN INTERMEDIATE SCHOOL, AND A COMPREHENSIVE HIGH SCHOOL. THE PHYSICAL AND EDUCATIONAL FACILITIES OF THE PARK ARE THOROUGHLY DESCRIBED IN THE REPORT, AND METHODS OF COPING WITH THE DISADVANTAGES OF SUCH A MASSIVE CENTER ARE DISCUSSED. THE REPORT ALSO INCLUDES DIAGRAMS, SCHEMATIC PRESENTATIONS, A MAP OF THE SITE AND ITS SURROUNDINGS, AND A PHOTOGRAPH OF THE MODEL. (NH)

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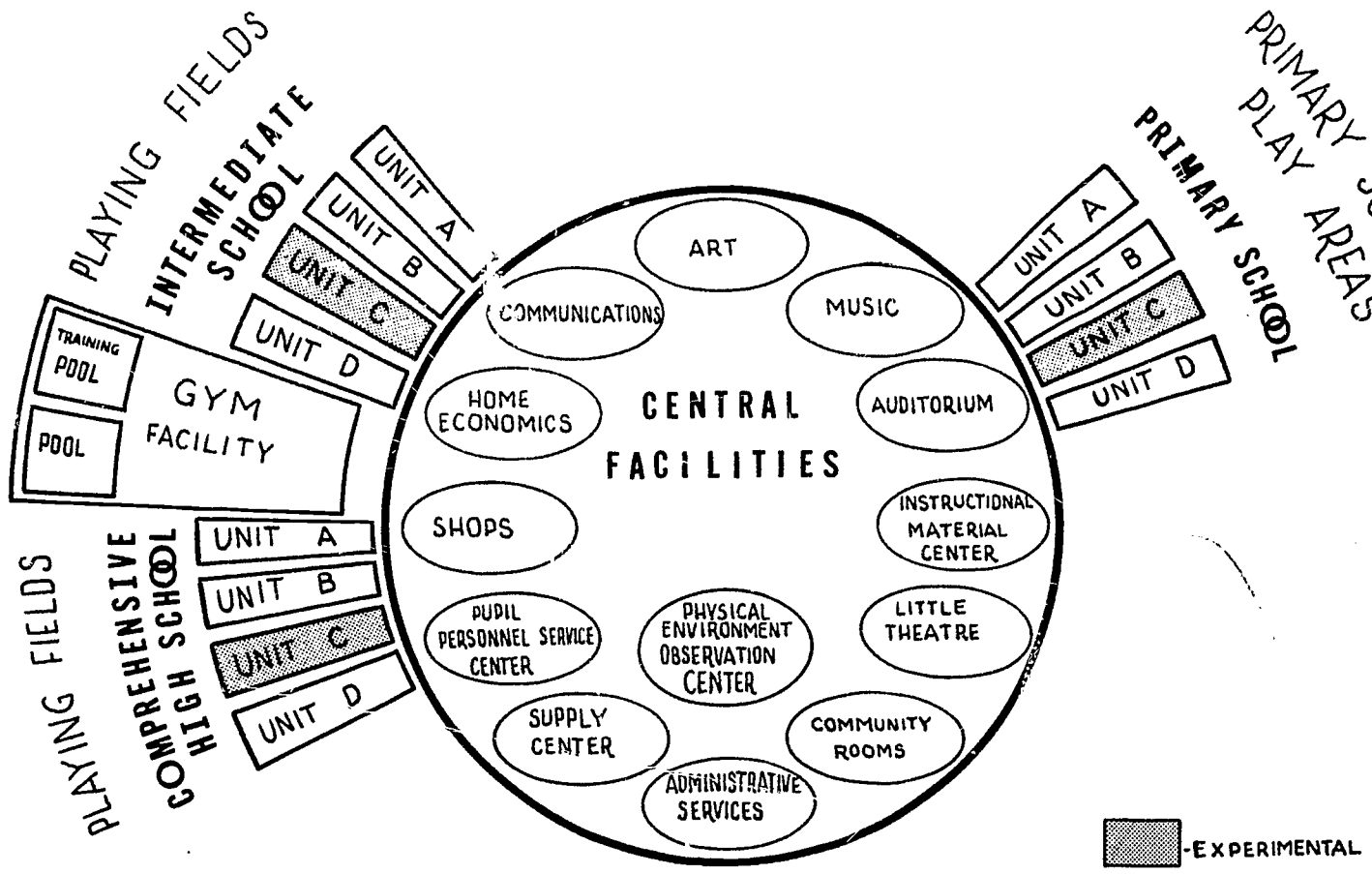

The Education Park:

What Should It Be?

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The Education Park: What Should It Be?

Educational Specifications For the Northeast Bronx Education Park

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August, 1966

UD 004 467

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Introduction

This document represents the first outcome of a Title III project under the Elementary and Secondary Education Act. A grant was given specifically to assist planning for an educational park to be constructed on part of the site once occupied by Freedomland Recreational Park. The rest of this site is being developed as Co-op City, a major apartment development for middle income families.

In preparing educational specifications for the Northeast Bronx Education Park, the following major criteria were used to select and develop features:

1. Provision for integration of children of diverse backgrounds.
2. Development of sound community-school inter-relationships.
3. Implementation of the Board of Education's policy statements on grade level reorganization.
4. Educational innovation in organization and curriculum.
5. Improved articulation among the three school levels.
6. Economy through joint use of facilities.

These educational specifications have been drawn up in the light of existing New York City programs and organization, and as a result of study and consultation with outside sources. Published material on educational parks has been analyzed and proposals in other communities have been studied. The superintendents in charge of elementary, junior high and high school offices have been consulted, as have the directors of early childhood education and the various subject areas. Expert consultants have provided information and recommendations regarding every phase of the proposed specifications.

Appended to this report is a list of those consulted during its preparation. In addition, several of the memoranda on which parts of the report are based are reproduced in full in the form in which they were submitted by the consultants.

JOSEPH F. X. MCCARTHY
Project Coordinator

Integration

The size of the expected student population of the Northeast Bronx Education Park is large enough to provide an ethnically mixed student body.

Total Spaces in Education Park	
High School	4,000
Intermediate School	3,600
Primary School	2,800
Total	10,400

In addition, one primary school is to be constructed on a separated but nearby location in the Co-op City area. It will be connected with the Communications Center of the Education Park.

It is anticipated that approximately two-thirds of the student population will be drawn from the families living in the Co-op City apartment project and that approximately one-third will be children living elsewhere. The Co-op City population is anticipated to be predominantly white; estimates range from 75% to 90% white for this population group. Adjoining the Education Park site is a growing neighborhood which is very heavily occupied by Negro families. It is expected that many of their children will be included in the student population of the Education Park. In addition, there is a low-rent housing project proposed for the immediate vicinity, the residents of which will probably be drawn largely from minority ethnic groups. The exact geographic areas or neighborhoods which will be served by the Education Park have not yet been defined. However, in keeping with the integration objective of the Board of Education, it is estimated that one-third of the pupil capacity of the Park will be allotted to minority group neighborhoods outside the limits of Co-op City.

The mere presence of members of two ethnic groups in the same Education Park is not the answer to the integration objective, however. For effective integration of children from diverse backgrounds, it is planned that children will remain with substantially the same classmates for all of primary school or intermediate school or high school. This will be accomplished by organizing the three school levels into "sub-schools" or "units" to which children will be assigned on a completely heterogeneous basis. Children in the primary and intermediate school will be assigned to "clusters" of from four to seven classes and it is expected that they will remain with their classmates in these clusters for the majority of their classroom experiences. They will attend gymnasium and take their lunch with pupils in their cluster as high school children will with pupils in their school units. Thus, over the four-year period at each school level, children of diverse backgrounds will have the occasion to work and live together in a school situation.

The population size of the primary school, intermediate school and high school groups provides for the addition of a certain number of children from outside the Education Park at the beginning of intermediate school, and at the beginning of high school. Therefore, a reorganization of "clusters" and of "units" is necessary at what would correspond to grade 5 and grade 9. It is recommended that when this reorganization occurs, there be a deliberate rearrangement of children moving from the primary units to the intermediate and from the intermediate to the high school. In this way, the children will be afforded an opportunity to meet with a larger number of their age peers at each school level. At the same time, they will be members of school "units" of increasing size: 700 at the primary level, 900 at the intermediate level and 1,000 at the comprehensive high school level. This regrouping process will not only insure that each child will be a member of three different socially and racially mixed groups as he progresses through the Education Park, but it will insure that children added to the Education Park population at the beginning of intermediate school or high school will be brought into a new social pattern rather than into one already established and set in its inter-relationships.

Student activities will be provided on a unit basis as well as on a school level basis. As a result, there will be an opportunity for children to meet, in certain circumstances, with others drawn from a very much wider population base. Student government, sports and cultural activities will make possible contacts among youngsters of appropriate age drawn from the entire Education Park.

The integration of students during the school day is only part of the total program planned to foster the integration of those served by the Education Park. Evening school and summer school activities will be provided on an integrated basis, and an extensive program of and for community groups, parent groups, youth action groups and the like will be provided not only for those whose children attend school in the Park, but for those in the broader community served by this Education Park.

The Education Park And Its Community

1. The Community's Contribution

It is expected that community influence on the Education Park program will be exercised mainly through an advisory panel consisting of community leaders from each of the neighborhoods served and representatives of the Education Park parents' associations. These associations will be organized on a unit basis, just as the children will be organized; and a federation of the various unit associations will form a Parent Association of the Education Park as a whole. It will be the function of this advisory panel to meet with the head of the Education Park and with the school principals, and to make known to the responsible school officials the interests and recommendations of community groups. Not only will trade advice for the vocational courses be offered through a vocational council, but a broad occupational advisory service will be made available through the participation of local labor and management in this council.

Some facilities within the Education Park are planned exclusively for use by community groups. Thus, it will be possible for social and other groups to use meeting rooms during the school day, and for continuing programs to be provided in these facilities for golden-age organizations and other community groups.

2. The Park's Contribution

The Education Park is designed to provide special facilities and services for community groups. By community groups we mean not only adults or those who have completed school, but school-age children regardless of their school affiliation who can reach the Education Park to utilize its facilities after the normal day school hours are completed. The principal means by which community personnel will be served at the Education Park is through the creation of an extensive youth and adult center. This center will provide a combination of recreational, avocational and quasi-academic activities.

Formal academic offerings will be provided through the following kinds of school organizations:

a. After-school study centers.
b. Evening high school.
c. Community education centers.
d. Summer school programs at the primary, intermediate and high school levels.

The facilities of the pupil personnel center will be available for counseling and consultation for those who are not registered students in the Education Park. For instance, adults interested in educational or vocational retraining may be counseled here, or children may be referred to this center from other schools in the vicinity of the Education Park.

Parent education will be an important contribution of the Education Park to its community. Parent education rooms are set aside in each of the primary school units where topics related to child care and child development will most naturally be treated for parent groups. However, the presence at the same general location of diversified facilities for the teaching of home economics, the demonstration of skills in home nursing, child care, home decoration, cooking, and clothing design and construction will make this parent education facility far more comprehensive than would be possible in separate facilities for each school level.

It is expected that the Education Park will be a cultural center for its community. The art studios and museum are obvious contributions in this direction, as are the music education facilities of the Park. However, the principal facilities for cultural programs in the Education Park will be the auditorium, little theatre and communications center. The auditorium will provide acoustically excellent facilities for music programs of all kinds. The little theatre will provide a setting for stage presentations and for more intimate audience situations with instrumentalists and vocalists. Moreover, the little theatre will provide a setting for community dramatic groups. The communications center will provide not only access to taped lessons and instructional material, but access to its studio facility for community groups interested in developing their own programs of a dramatic or instructional nature. The possibility of linking home TV sets to the Education Park's circuits will be explored.

The various combination rooms provided in each school unit for eating and other purposes will make available to community groups facilities for meetings with snack service or even with full dinner service for groups ranging in size from 75 to 600.

The contribution of the Education Park to a constructive recreational and leisure time program for youth during summer periods and other periods during which large numbers are free of school-related chores should be decisive. The training pool should make it certain that no youth within reach of this facility will be with-

out basic aquatic skills. The competitive pool, gymnasium, field house and outdoor athletic fields should insure a great variety of constructive leisure time activity, and the air-conditioned instructional facilities will be a powerful magnet to attract youth from the streets into academic or avocational courses during the summer months. Outdoor facilities for court games, skating or dancing will be illuminated in evening hours for maximum use by the community.

Organization and Administration

The total pupil capacity planned for the Northeast Bronx Education Park is 10,400 pupils. This is a vast number and one with which individual pupils cannot be expected to relate directly. In fact, it is highly probable that serious problems would be involved if there were an attempt to have pupils consider themselves as "one out of 10,400."

To counter this possibility and to provide more manageable numbers of pupils at each of the three levels, it has been decided to organize units at each school level. Pupils within each unit will remain in it for the duration of their stay at the school level (primary, intermediate or high school) and will take the majority of their school program, including their physical activities and lunch, with other students in the same unit. Each unit will be supervised by a unit head who will hold a supervisory license and will function in many respects as the supervisor of a separate school of small size.

The unit itself has a fairly large number of pupils, but it is expected that the guidance program will be so organized that children will remain with the same counselor for the duration of their assignment to any school level. Counselors, therefore, will be assigned to school units, and there will be recognizable divisions of children within each school unit which will number no more than 350 for guidance purposes. At the high school level it is expected that the same homeroom teachers will carry heterogeneous homeroom sections through a complete four-year cycle; these homeroom teachers, plus the guidance counselors, will make it possible for the high school students to recognize a unity of assignment, and to feel a secure "home base" within the large school park population.

The four units at each school level will comprise the field of supervision for a single principal at each of the school levels. The principal's assignment will be basically in the fields of community relations, curriculum coordination, guidance and improvement of teaching. It is believed that with the unit as the basic element of his responsibility, and with many administrative chores removed from his office, the principal's span of control over four units will not be excessive.

The Education Park will be operated on a nongraded basis to the maximum extent possible. This presupposes that accuracy and speed in record keeping will be made possible by computer-based equipment. Individual programs will be prepared and altered for children in the Education Park, and the record-keeping and program-construction will be prepared by an administrative service center which will be capable of responding to the demands of the three principals, the heads of school units and guidance personnel. It is expected that in some cases children will take parts of their programs outside their home unit and even outside their school level through the use of central facilities of the Park, or through inter-school talent grouping.

The administrative service center will serve to coordinate the use of common facilities; to provide maximum support of the operating units in terms of business management, communication and computer services; and to insure effective articulation of instruction throughout the grades. The administrator of the Park will have major responsibility for community relations, curriculum articulation, integration and full use of the physical facilities of the Education Park.

There will be a curriculum coordinating unit operating on a park-wide basis. The Park administrator, a curriculum coordinator for the park, subject area supervisors or coordinators, and the heads of the three schools will make up this curriculum committee. This committee will be the principal instrument for achieving articulation among the three school levels.

It is expected that a supervisor of guidance will be assigned to the Education Park to oversee and coordinate the activities of the licensed counselors. This supervisor will serve as the guidance representative on the Park curriculum committee.

A business management office will include a manager to direct such business affairs as teacher personnel records and payroll, supply and distribution of materials, maintenance, transportation and food service.

PART II:

Physical Facilities

Primary School Instructional Spaces

There will be four units established for the primary school, each of them to service approximately 700 children. Included in this number are some in the special education category, for whom three classroom spaces will be allotted in each unit. It is intended that these units will be organized on a non-graded basis into three clusters of classrooms, each of which will cover a two-year age span.

It is desired that each two-year age span be housed in a cluster of adjoining rooms or a classroom complex. A team teaching center will be provided for each such cluster of classrooms. Occupying a central location in relation to the rooms in each cluster will be an additional instructional space, or "cluster instructional center." This should be so designed that special teaching equipment can be stored and used with groups of children drawn from the rooms of the cluster. Such special equipment might include materials in the fine arts, home living or science areas. It should be possible to open two or three classroom spaces into this additional area to provide for those activities that can be best carried on in large groups. This cluster instructional center should be so located as to be under visual control of at least three of the classroom units.

Means should be provided to isolate noise producing activities which will be quite common in the classrooms and central space. In addition, it should be possible to compartmentalize part of this central space or parts of each class space to make small group instruction possible in each cluster of classrooms.

A parent education room will be located close to the early childhood rooms of each unit. This facility should not be set up as a classroom space but rather with more casual furnishings. It will be used for conference purposes with individual parents or with groups of parents, and it should be usable also for conferences involving staff members of the unit professional staff.

A "commons" or interior play and eating area will be provided for each unit, with kitchen facilities shared between adjoining units. This area should include a piano and access to the school's audio-visual resources. A small first aid room will be located near this commons area.

Office suites for each unit will include a secretarial-reception room, space for the assistant principal in charge, and for two guidance counselors. These offices should be separated from each other and should have access to a record room or outlet for the school park computerized records.

A faculty resource work room will be provided in each unit. This room will provide curriculum materials, teachers' reference materials, film strips and records, art and science materials for use in the unit. It will *not* be a faculty library or depository for long-term storage of materials. It will provide a setting for the teachers to prepare instructional materials and office space for teachers in special curriculum areas who may be assigned to the unit (industrial arts, music, science, etc.).

One of the four units will be an *experimental unit*. This unit should include an additional resource work room. The facilities for each complex in this unit should be completely flexible so that the entire area might be utilized without walls or with any combination of large, medium or small compartments. It should be possible

Summary of Spaces Requested per Unit:

Pre-kindergarten and/or kindergarten	7	classrooms
Grades 1-2 (one cluster of 4, one of 3 with common cluster instructional center)	7	classrooms
Grades 3-4	7	classrooms
Special education	3	classrooms
Team teaching centers	3	rooms
Cluster instructional center	2	rooms
Playroom and eating areas ("commons")	1	
Parent education and conference room	1	
*Faculty resource and work room	1	
Assistant principal's office	1	
Guidance office (two cubicles)	1	
Secretarial office and waiting room	1	
*One additional room for the experimental unit	1	

to change these facilities in very short periods of time. It is expected that this unit will provide a location for experiments and pilot projects in curriculum, school organization, and internal architecture. An observation room will be provided for teacher training purposes in this unit.

Non-Unit Primary Facilities

The primary school principal's office and a secretarial and general office will be required. Located close to this should b space for the school aides, and for curriculum conferences between members of the primary school faculty and other curriculum workers.

A primary school library and reading room should be so located as to be accessible to each pair of units.

An early childhood playground facility is required large enough to handle up to 240 children; two or four proportionately smaller facilities would be preferred.

An outdoor playground capable of handling up to 240 children in the six- to ten-year age groups is also necessary. Again it would be preferred if two or four smaller areas of appropriate capacity could be provided.

A room for corrective speech and corrective reading instruction should also be provided in the central area of the primary school to service children from all of the primary units.

Two art rooms and two industrial arts materials centers will be provided. Each of these will serve one pair of units in the primary school.

Intermediate School Instructional Spaces

There will be four units established for the intermediate school, each of them to service approximately 900 children. Included within this number will be approximately 80 special education children for whom four classroom spaces will be allotted in each unit.

The intermediate school units will be subdivided on a non-graded basis; however, the age factor will be taken into account so that children of the oldest age group will be organized in clusters of larger numbers.

Groups of classrooms are required close enough to each other to share a cluster instructional center in which certain kinds of special instruction will be provided and in which large group activities can be conducted involving more than one class section at a time. The basic cluster will consist of four classroom spaces and one cluster instructional center. These clusters are intended for the younger intermediate school children. For the oldest age group and/or its intellectual peers, clusters of five classrooms and one instructional center will be provided.

The cluster instructional center will be utilized for several different kinds of activity: large-group instruction carried on for groups from two or more classrooms in a team-like teaching situation; space for several smaller groups to conduct instructional activity as required by their progress in various class subjects (thus, it will be possible to have seven or eight reading groups in each cluster, each learning in an area separated from the others); and for individual or small groups to conduct independent study. In addition, it is expected that some science and other subject matter will be taught primarily in the lower-level cluster instructional center. Equipment in the cluster instructional centers will include a science demonstration table and related area; arts and crafts work-tables; and several typing stations arranged so that children can carry on typing practice after they have completed their introduction to the typewriter in grade 5. Maintaining and developing typing skills, and using the machines in these stations for typing reports and similar projects, will thus be part of the work conducted in the cluster instructional center.

In each of the basic clusters part of the instructional center will be set up as a science demonstration area and one of the classrooms in each of the other clusters will be a science demonstration room. Each five room cluster will have, in addition, a science laboratory-demonstration room. A project preparation room should be so located as to serve both these laboratories and, in addition, be accessible to students so that they can borrow and return science materials for their use at home.

Two seminar rooms will be attached to each cluster of classroom space. These are for small group or individual study, committee work or other supervised school related activities. In each cluster there will also be one team teaching center.

Summary of Spaces Requested per Unit:

Four basic classroom clusters:	
4 classrooms	16 classrooms
2 seminar rooms	8 seminar rooms
1 cluster instructional area	4 cluster instructional areas
Two advanced classroom clusters	
5 classrooms (including science-demonstration room)	10 classrooms
2 seminar rooms	4 seminar rooms
1 cluster instructional area	2 cluster instructional areas
1 science laboratory	2 science laboratories
Special education classrooms	4
Typing classroom	1
Art classroom	1
Industrial arts materials center	1
Home economics room	1
Instruction and eating area	1
Instructional resource center	1
Offices:	
Assistant principal	1
Subject supervisors	3
Guidance counselors	3
Secretary	1
Waiting room	1
Conference room	1
Seminar room	1

A resource center will be located in each intermediate school unit. This center will consist of a library type facility including two areas which can be isolated for library instructional purposes and which can be utilized as reading rooms for the children assigned to the intermediate school unit. The resource center will also include facilities for listening to language tapes, music or voice recordings; it will require access to and space for study of audio-visual materials of all kinds. The resource center should include carrel spaces and other open study areas for up to 90 students and individual carrel-office for faculty members assigned to the unit.

The children in each unit will take their meals in an eating area which will be designed primarily as large group classroom spaces. There should be four such spaces, each to accommodate up to 75 children. They should be separated from each other by sound reducing walls and should be sound treated so as to permit their use simultaneously for class purposes such as singing, speech training and other listening activities. These areas, when combined, will make it possible for up to 300 children to be fed at one time. There should be ready access to a unit serving kitchen which may also serve the eating area in a second intermediate school unit. It would be desirable if a serving area had two serving stations so that the space could be divided with a maximum of 150 children eating in one area.

Offices for the units would include a secretarial office with access to pupil records or to a computer outlet connected to the Education Park's administrative service center. The assistant principal in charge of the unit and subject supervisors (three) should have offices at or near this secretarial service. A guidance office with cubicles for three counselors should also be located in this area.

A waiting room and a conference room large enough to hold 15 to 20 people should be available to the assistant principal and supervisors. A seminar sized room should be accessible to the guidance office for use in group guidance services.

One of the four units will be an *experimental unit*. Its function and design will be similar to that of the primary school experimental unit.

Non-Unit Intermediate School Facilities:

A principal's office and a secretarial and general office will be required for the intermediate school. Office space will be required also for four subject supervisors and a conference room for small groups of supervisors or key personnel.

A room for non-professional personnel assigned to the intermediate school should be provided close to the principal's office. A room for parent association activity is also required.

Comprehensive High School Instructional Spaces

Instructional spaces for the comprehensive high school will be divided into two different categories. The common subject matter and many of the advanced courses will be offered in each of the four units into which the comprehensive high school will be divided. On the other hand, special facilities will be available centrally in the comprehensive high school to provide for advanced or remedial work in various subjects as well as facilities for special education such as vocational training.

The comprehensive high school units will serve approximately 1,000 students each. Home room organizations will be established on a heterogeneous basis and children will remain with a homeroom for their entire stay in high school. Children from each unit will be assigned to health education and lunch periods in common. To the extent that the program is feasible, children will take their subject classes within the unit, leaving it only for special classes for which equipment must be located centrally, or for which registration does not warrant duplication in each unit. It is anticipated that children will spend most of their school day within the unit of 1,000. However, there will be more movement to special classes on the part of older students as they approach graduation.

The classroom spaces will be clustered according to groups of related subject areas, for example: classrooms for English, foreign languages and social studies; classrooms for music and art; classrooms for mathematics and science; classrooms for typing and general commercial subjects. It is recommended that science classrooms and laboratory suites be so arranged that they will be readily accessible to laboratory assistants, and to preparation rooms designed to serve pairs of units. A similar relation should exist between the resource center-libraries of each pair of units.

One area of each unit will consist of four large group facilities. It should be possible to combine the four for eating purposes. When fully opened, it should be possible for this area to feed 350 pupils. It would be desirable if separate serving stations made it possible to separate the lunch groups into two separate areas each of which would handle 175 students. A serving kitchen should be so located as to service adjoining unit lunch areas.

A resource center will be located in each comprehensive high school unit. This center will consist of a library-type facility including two

Summary of Spaces Requested per Unit:

Classrooms: 17, plus 1 supplementary resource room with one group of 7 (English-social studies)
Science demonstration classrooms: 3
Science laboratory: 1
Typing room: 1
Large-group area usable as lunchroom for 350 pupils, divisible into 4 large-group rooms for recitation purposes, and into 8 section rooms—available for program during periods 1, 2, 7, 8.
Specialization for each unit provided as follows:
- In Unit A. Chemistry classroom laboratory plus one demonstration-classroom
- In Unit B. Physics classroom laboratory plus one demonstration-classroom
- In Unit C. Stenography and typewriting room
- In Unit D. Business machines room and merchandising classroom

Resource center-library
Department offices: Three per unit, plus adjoining study carrels to seat up to 25 pupils under visible control of office
Offices:

Unit head	1
Guidance counsellors	3
Secretary-general office	1
Reception and waiting room	1
Conference-seminar room	1

areas which can be isolated for library instructional purposes and which can be utilized as reading rooms for the children assigned to the unit. The resource center will also include facilities for listening to language tapes, music or voice recordings; it will require access to, and space for, study of audio-visual materials of all kinds. The resource center should include carrel spaces and other open study areas for up to 190 students, and individual carrel-offices for faculty members assigned to the unit. Because the emphasis in the high school will move in the direction of more extensive individual study and because it is planned not to have study hall assignments, additional study carrels should be provided in groups up to 25 in number located in any area of the school where such provisions can be made. Adjacent to each department office there should be a grouping of study carrels under visible control from the department office so that students can pursue their studies on either a remedial or advanced level. In addition, two seminar rooms should be located in the vicinity of each department office. It is planned that three department office facilities be placed in each unit of the high school.

An office for the unit will include a reception room, general office facility with access to pupil records in the administrative service center, and space for the unit head. A guidance office with cubicles for three counselors should be located in this area. A conference room large enough to hold 15-20 people should be available for the guidance office and for the unit head.

One of the four units will be an *experimental unit.* The facilities for each group of classrooms in the unit should be completely flexible; changes in wall arrangements should be possible over a very short period of time so that any combination of large, medium or small compartments can be organized. It is expected that this unit will provide a location for experiments and pilot projects in curriculum, school organization and internal architecture. An observation room will be provided for teacher training purposes in this unit.

Non-Unit Comprehensive High School Facilities

A principal's office, a secretarial and general office will be required for the comprehensive high school.

Central Facilities

Certain facilities of the Education Park will not be assigned exclusively to any one school level, but will be available for the use of qualified students and their instructors on a basis of need and availability. In some instances it will be possible for children of different school levels to share the use of these facilities on a basis of talent or interest. In other instances these facilities will be used jointly by students of the Education Park and by people drawn from the community and, on occasion, by out-of-school youth. The following facilities are planned as central facilities of the Education Park:

1. Instructional Materials Center

This central facility will provide a reference center for students and a resource center for faculty members. This center will include specialized reference materials such as are most frequently used by advanced students, together with carrels and small group seminar rooms in which such students may work on their research projects. Microfilm readers and listening apparatus will be provided for the use of students in these reference centers.

The resource center will provide space for a professional library which will be accessible only to the staff of the Education Park. The materials stocked in this professional library will make it possible for teachers to consult material from a number of different curriculum areas or school levels. There will be space in this professional library for committee meetings and for groups of teachers working on curriculum problems.

Space will be provided for duplicating equipment capable of producing bulletins and booklets for use in the Education Park, including information bulletins on recent accessions by the library sections or by the communications center.

A central catalog will be placed in this center as a guide to all instructional materials housed in the Education Park. Thus, students or faculty

members will be directed to the locations of books, records, film strips, etc.

The communication center of the Education Park should be close to the resource center so that its library of film strips, tapes and films will be available to those who utilize this center.

The instructional resource center should provide office space for the following personnel:

a. The curriculum coordinator of the Education Park.

b. The manager of the instructional resource center.

c. The head librarian of the Education Park.

d. The curriculum experts assigned to the Education Park for articulating offerings on a K-12 basis in the following areas: reading, English language arts, mathematics, science, foreign languages, fine and applied arts, and commercial education.

2. Auditorium

The auditorium for the Education Park will provide for seating 1,200 people. It should be planned primarily for music or music-type programs, with stage facilities to provide for a second general type of program. The auditorium will be used for assembly periods by all intermediate and high school units, for performances by talent groups, and for large scale dramatic productions both in the day school and in the community-related evening program.

3. Little Theatre

A little theatre to seat approximately 400 people will be designed primarily for stage performances with the possibility of small music programs being presented as an alternate or second type of activity. This facility is planned for the use of all schools in a listening or audience situation, for the presentation of pupil-prepared plays, for other programs, and as a facility for presenting a dramatic work produced in community and evening sessions. It is expected that this little theatre will be utilized largely for activities of the speech and English departments. It would be well if speech laboratory and speech correction facilities were housed in or near it. Dressing rooms and prop rooms should be provided with the little theatre.

4. Band Shell

A band shell will be provided, from which school and community center music programs can be presented. This should be located facing a hardtop play area such as the courts, which may be flooded for ice skating. The area of the band shell will be illuminated so that evening programs can be conducted.

5. Music Rehearsal Rooms

The central facilities will make it possible to provide separate rehearsal areas and practice rooms for four different kinds of music activity: vocal music, brass, strings and woodwind. Instructional space and small rehearsal rooms for these instrumental purposes will be available to groups from the intermediate school and from the high school on a regular basis. Some of these groups will draw children from both school levels at the same time.

6. Fine Arts Rooms

A suite of fine arts classrooms for children with art talent and for instruction in advanced art electives will be a central facility available normally to children of the intermediate and high school, and even to unusually talented primary school children. These facilities will also be available for after-school and evening programs. Studio rooms for painting and for sculpture will be provided.

7. Industrial Arts Suite

Industrial arts shops for intermediate school and high school students will be located in the same general area. These shops will include six single unit shops for the intermediate school and ten single unit shops for the comprehensive high school (these will include drafting, plastics, transportation, etc.). The industrial arts suites will be so designed that certain facilities can be jointly used; for instance, a dark room will serve the graphics facility of the high school and intermediate school; a common supply center will serve both shop groups. The shop complex should be accessible separately from the intermediate school and high school. The shops should be close enough to each other for rapid interchange and for possible conversion from one type of shop to another.

8. Vocational Shops

A vocational shop complex will be provided in which students of the comprehensive high school and out-of-school youth or adult groups will be trained in particular trades (to be determined in the light of requirements of the "comprehensive high school complex"). This facility should be located close to the comprehensive high school units, with direct access to the street or other public areas.

9. Home Economics Facility

Home economics rooms for training in apartment or home decoration and furnishings, child care and home nursing will be part of a central facility. Some intermediate school children and some comprehensive high school children will utilize these rooms. These may also be used by the youth and adult center for community education. The presence of pre-kindergarten classes in the Education Park provides an extra learning opportunity for the child care course. The presence of these young children also suggests that some of their parents may wish to participate in programs conducted in the home economics suite.

10. Physical Environment Observation Center

This facility will include an instrument shelter for weather instruments, and recording wind vanes and anemometers. A cleared area (surface or rooftop) will be provided from which weather balloons may be launched. This center will also house a planetarium room and a top-floor observation station equipped with telescopes for evening observation work. Associated with this center there will be at least two full classroom spaces, and a laboratory space equipped for the study of soil samples, water analysis and geologic experiments. The classroom spaces will be separated by operable walls so as to make possible one center for large group explanations. They will adjoin or be convertible into small seminar-sized rooms. An office will likewise be provided for this center. This facility will be utilized by children from all three school levels and will provide a means of unifying their study of earth science and related science topics. Advanced students in science will have an opportunity to use this facility on an individual programmed basis under the direction of a teacher whose office will be located in it. This facility will be of great value to the after-school study center and will provide a means for evening study of astronomy by direct observation. An experimental planting area will be included, for the use of children from all school levels. This will be associated with an indoor planting facility for study of plant life.

11. Museum

A museum room will be placed in a central location accessible to the public and to children of all school levels. This museum will include space for displays in the following general areas: science (specimens, apparatus, projects, etc.); art (paintings, sculpture, graphics, etc); industrial and vocational arts; social studies.

12. Remedial Center

A center for remedial reading, mathematics and English language instruction will be provided in a central location. This center should be staffed by permanent personnel and will be equipped with materials designed for remedial instruction of children in the upper-intermediate and high school levels. It will be of use in the youth and adult center for afternoon and evening groups, including adults and out-of-school youth. The English language facility will be equipped as a foreign language laboratory with audio-visual resources for direct instruction in English.

13. Language Laboratories

Language laboratory equipment will be installed in three rooms of the central facility. These will be used by classes in the intermediate and comprehensive high school, and by individual children in the after-school program for the improvement or maintenance of language skills. These facilities will also be available for children who have discontinued the study of a language prior to graduation from high school. Use of the language laboratory facility will make it possible for these children to maintain proficiency in the language until they resume its study as college freshmen.

14. Computer Center

The Education Park will be served by a computer center through which record-keeping and program-making can be managed for all units and school levels. This center will be located near the following instructional facilities:

a. Mathematics laboratory—Here, computer mathematics will be studied by day high school, evening and summer school students. The facility will be available for qualified faculty members and adult education groups as well.

b. Commercial education computer center —Here, students will be trained in skills related to computer technology as it applies to general business needs. Advanced students in commercial courses, as well as evening, summer school or adult education groups, will use this facility.

15. Talent Group Classrooms

Four classroom spaces will be provided in a central facility for use in those talent group

classes and advanced single section classes offered outside any of the units of the intermediate or comprehensive high school.

16. Student Government Rooms

Spaces for the Education Park general organization will be provided in the central facility. The student government will include representation or delegates from all units of the Education Park, and its facilities will be accessible to community groups as well. The student government facility will also include space for and representation from youth and adult center, evening high schools and summer high school student bodies. Space for the school store will also be provided in a central location.

17. Education Park Office Facilities

a. A general office for the Education Park will be provided in which the directory services for the Park are maintained. This office will also serve the following functions:

1. A communications center with central switchboard and mail room.
2. A statistical control and records section to prepare all statistical reports needed for the Park.
3. Access to a data processing room both to enter and receive information.
4. A unit to develop the school program for intermediate and comprehensive high schools. This unit must include representatives of both principals, the Education Park director, the guidance supervisor, and technical program experts who will prepare the basic data to feed into the computer on which the final programs of all units will be developed.

b. A business manager's office in which the business affairs of the Education Park will be centered. The manager will co-ordinate the budgets for all units of the Education Park and will supervise the business operations of the following units:

1. Lunch facilities.
2. Salary unit.
3. Supplies.
4. Record keeping.
5. Plant maintenance.
6. Pupil transportation.

c. Office space for the head of the Park and his secretary, with associated conference rooms, must be provided.

18. Community Rooms

Two meeting rooms will be provided for community use during the regular school day as well as the after-school hours. These rooms must be established as community, not classroom, space. Their function is to provide a setting for meetings and activities of golden-age organizations, and social or cultural groups of the general community. In addition, the following community offices will be provided:

a. An office for the principal of the youth and adult center; an office space for his assistant; an office space with file and storage and record-keeping capability for the secretary of the youth and adult center. These facilities should be located close to the main entrance of the school park facility and close to the community rooms.

b. An instructor's office in the physical education area of the school for the use of the community center physical education personnel.

Physical Education Facilities

Physical education facilities for the Education Park will be set up separately for the primary school units. It is expected that each primary school unit will have access to outdoor play space for its students and that each unit will have access also to a common area for indoor physical education activities.

The facilities for the intermediate and high school units will be planned for common use of all children at these levels, and will include certain facilities that may be used jointly by the children at both levels. Basic thinking behind the requested facilities includes the following major points:

a. That children of intermediate school age are no less in need of physical activities than the children of high school age who are scheduled for a daily period of physical education. Therefore, space should be sufficient to provide a daily period of activity for every intermediate school child.

b. That aquatic skills are essential for children who live in an area so close to beaches and inlets from Long Island Sound. Therefore, a program to teach these skills is an essential part of the physical education program.

1. Aquatic Skills Facilities

To provide aquatic skills, two facilities are requested. These are intended to provide space for all essential aquatic skills for all children registered in the Education Park at intermediate

and high school levels, and for those in the community, or within reach of the park during after-school, evening and summer programs. The items requested are:

a. A training pool, of constant depth (3-4 feet), perhaps 30 feet x 60 feet in size. This is intended to provide means of familiarizing children with the water and to train them in basic water safety, floating, treading water and basic strokes. The size of this pool is sufficient to permit children to master basic water-safety techniques without fears that may be aroused in a deeper pool. The depth is sufficient for the teaching purpose and the cost of such a pool is considerably less than that for a full-sized competitive pool with provision for diving.

b. A competitive pool, with full depth at one end for diving, and standard 25-yard length. This pool will be used chiefly by high school classes, but will be open for use by advanced swimming groups from the intermediate school as well. It will be used for advanced instruction in swimming and diving, lifesaving and boating safety, and for intramural and interscholastic sports. It is anticipated that this pool will be the principal aquatic feature of the Park for recreational use by the community during after-school and summer periods.

These two facilities will develop basic and advanced water-sport skills for both intermediate and high school classes. It is planned that the pool facilities will be utilized by classes of boys and girls on an alternating basis: that is, the pool will be considered one teaching station in a cycle of physical education. The cycle will include work on the main gymnasium floors and work in one auxiliary space, with pupil capacity equal to that of the pool. The pools, then, will be jointly used by the intermediate and high school groups; while normally the training pool will be used by the younger children, some high school boys and girls will take basic training in it. This will provide especially for those beginning students in the high school who arrive from feeding schools other than those with swimming facilities.

2. Gymnasium Facilities

Gymnasium facilities for the *intermediate school* children should include the following basic elements:

a. A standard, divisible school gymnasium facility with locker rooms for both girls and boys and separate access to the gym floor by children of either sex. This gymnasium should have a high ceiling, sufficient to accommodate basketball or volleyball games.

b. A separate auxiliary gymnasium facility with standard ceiling height, in which such activities as dancing and physical fitness training may be conducted. This auxiliary facility will be utilized in cycles with the training pool.

Gymnasium facilities for the *high school* children will include the following:

a. Standard-height gymnasia for boys and girls. It will be necessary for these to be separated for access and for one of them to have separate access from a visiting team dressing room. Interscholastic basketball should be possible either in the boys' gym or by combining the two gymnasia.

b. Two separate facilities with standard ceiling height, for use by boys and girls in cycles with the pool. These auxiliary facilities will be used for physical fitness development, weight and apparatus work, dancing, golf and other instruction. The proximity to a public golf course suggests that golf training would be a useful addition to the physical education training program, for it provides realistic opportunity for continued participation in the sport.

3. Outdoor Athletic Spaces

Playing fields have been requested for the primary school units, clearly separated from the facilities requested for other scholastic levels. Playing fields for the intermediate school children should be separated from the athletic fields provided for the high school boys and girls. The outdoor space at the Education Park can be perhaps more fully utilized for athletic space than in conventional school sites because the location at Co-op City provides a landscape area already developed adjoining the school sites. To the maximum extent possible, the following playing areas should be provided:

a. A combination football-soccer field, with a 440-yard all-weather track surrounding it.

b. A field for girls' sports such as field hockey.

c. A standard baseball field.

d. Hardtop areas on which such court games as basketball, handball, tennis and volleyball may be played. These areas should be so designed that they can be flooded for ice-skating in winter, and should be illuminated so that the surface can be used for evening sports activities year-round, and for summertime dancing for those in the youth and adult center.

4. Field House

It is requested that a simple field house be provided, with dirt floor and no special interior appointments. This should have access to the locker rooms for the high school children. It will be used for intra-mural sports, interscholastic team training and auxiliary gymnasium facilities. The field house may be designed to contain some of the facilities requested above for indoor or outdoor athletic and/or gymnasium use, depending on cost analysis.

5. Joint Facilities

Several facilities can be jointly used by both intermediate and high school children, or faculty members. Among these, the following seem most essential:

a. A training space for individual health teaching, or development of boys and girls whose physical development does not warrant assignment to regular gymnasium classes. One such space should suffice for both sexes, at both school levels, perhaps assigned two periods per day to boys and girls of each school level.

b. A classroom suite for health teaching. Four classrooms will be necessary for this instructional area, and these should be located in close proximity to each other for ease in communication among the teachers, possible development of team teaching techniques and sharing of instructional media.

c. Office space for a coordinator of physical education and health education for the Education Park, as well as offices for faculty members and chairmen of health departments, will be centrally located to improve the articulation of health education teaching within the Education Park. Office space for community center personnel assigned to the youth and adult center will also be necessary.

6. Community Relations

The physical education facilities will provide an important link to the community, and a means by which community youth will be encouraged to participate in after-school programs. The presence of Rice Stadium at Pelham Bay Park, near the site of this Education Park, will make it unnecessary for the school itself to provide a stadium for interscholastic sports. It is understood that Rice Stadium is to be rehabilitated and will be available for the interscholastic teams that may represent the Education Park.

While interscholastic sports will be part of the program at the Education Park, the unit structure of the intermediate school and high school makes a form of intra-mural sports most attractive. It is planned that children's programs will assign them to gym with others of their own units; hence the intra-mural sports will be especially attractive. Since the widest possible participation is sought, the addition of a field house for interscholastic and/or intra-mural sports would be an especially valuable part of the Education Park's equipment for physical education.

Communications System

The internal communications system of the Education Park will consist of two parts. One of these will involve telephone communications which should be provided through a central switchboard and PBX system capable of providing intercom service as well as direct receipt of calls from outside the Park. It is recommended that a telephone conduit be installed connecting all instructional areas of the Park, so that when cable-carried educational programs are available, these programs can be utilized in the instructional spaces without overhauling the walls and ceilings of the buildings.

The second part of the communications system will involve a central audio-visual control system. This will include a public address-type connection by which radio programs, tapes or records can be broadcast into the individual instructional spaces of the school, into the resource centers and into study carrels. This system presupposes that there will be a number of tape decks and pick-up facilities so that a large number of programs can be piped simultaneously to different receiving locations.

There will also be closed-circuit and open-circuit television systems. The open-circuit TV for commercial channels can be dialed directly from classroom receiving sets to be located in each instructional area. Closed-circuit telecasting facilities should be provided in all instructional areas of the Education Park in addition to the auditorium and little theatre. In addition, there should be a studio facility adjoining the communications center in which programs or taped lessons can be prepared. The TV pick-up facilities should include portable cameras that can be installed in various classrooms or instructional spaces so that a bank of lessons can be developed on tape for future instructional purposes and for the improvement of instruction. Tapes of such lessons, other television programs and instructional motion pictures should be available so that a teacher in any part of the Education

Park can have access on request to the entire bank of films or taped instructional material. This material would be displayed in the classrooms on television facilities.

The communications center, then, will include the following facilities:

1. An audio control center for the public address system with associated audio tapes, records, FM and AM radio pick-ups, and conventional public address system equipment.
2. A television control facility for the distribution of closed-circuit programs, video-taped programs and educational motion picture clips on the request of teaching personnel.
3. A studio facility for the preparation of television instructional materials. This facility should include equipment for making tapes from TV programs produced in instructional areas.
4. Storage facility for the audio and video materials.
5. A graphics center in which visual instructional materials such as charts, overhead transparencies, etc., can be produced.
6. An office for the director of the communications center with enough secretarial space for the management of the center, and for the production of mimeographed or offset master copies of catalogs and guides to the audio-visual resources.

Library Facilities

The library resources of the Education Park will be very extensive because of the size of the Park population, and because of the growing emphasis on the use of library resources and facilities in the school programs. The growing number of non-library resources that are part of the reference centers and individual study carrels suggests that apparatus of a technical nature, and materials such as those provided by the communications center, will be part of the instructional resources used by children in resource centers. Library facilities and the professional service of library teachers will be essential in these resource centers.

The unit system of organization which the Education Park utilizes provides for a resource center in each intermediate school and comprehensive high school unit. These resource centers should be so located that pairs of them are close to each other for a quick interchange of library and other resource material. A single office will be provided for each pair of resource centers. Each resource center will have its own reading rooms, reference section, card catalog and checking desk area. The non-professional work associated with processing and repairing library books will be performed in space located at the supply center of the Education Park. For this purpose, supervisory responsibility will be allotted to one member of the Education Park library staff. Each primary school library reading room will be located and planned to serve two primary school units.

The instructional materials center will include a reference library facility for student use and a professional library for the faculty. It will also house the head librarian of the Education Park facility.

It is expected that the library teachers, freed from non-professional chores, will be able to give more complete service on the professional level to students and to their faculty colleagues. The library service for the youth and adult center, and for the evening and summer school activities, should be under the same direction as the library service of the Education Park's day school libraries. In this way, the needs of the non-day school clientele can be evaluated and served most effectively, and the possibilities of disagreement or lack of communication will be eliminated.

Science-Laboratory Facilities

1. Primary School

Facilities

No special facilities in the form of science rooms are called for in the primary school portion of the Park. Instead, each primary school classroom must have sink facilities with running hot and cold water, drainage and electric outlets near this facility. Each cluster of primary classrooms requires storage closets for science apparatus of a simple nature, such as glass jars, potting materials or rudimentary electric apparatus. Each classroom should have provision for open-shelf overnight storage of science projects that children might be working on. There should be an impervious finish on the table-tops of the children's work tables. There should be water and electrical utilities available in the cluster instructional center.

Function

It is anticipated that science instruction will take place largely within the primary classroom

or within classroom groups that may work out-of-doors. Some science instruction will take place in medium to large groups (one class or more), probably under the direction of a science teacher who will come to the group under instuction. Hence, there should be provision for storage of his materials and for demonstrations by this teacher in the cluster instructional center. Since much of the primary science program will continue to involve pupils in individual and/or group projects, space for conducting these is needed, and "child-proof" desk or table tops will be necessary. Many of these projects may run over periods of time (e.g., study of plant growth or observation of a pet animal), so shelves near sunny windows are desirable (these might well be insulated from heat sources such as radiators or vents). Wherever possible, access to the outdoors and school garden should be provided from each group of classrooms.

2. Intermediate School

Facilities

For the younger pupils in the intermediate school, a separate science work area should be set up to service each group of five to seven classes. This area should have provision for television reception, projection by various media, display cases for objects under study and seating areas for pupils.

Each classroom will have running water and electric current, with project space available in which individuals or groups may conduct science projects in a certain amount of privacy, but under observation by their teachers. Closet or cabinet space will be necessary for science equipment in class use, and, as in the primary school, it is expected that pupil work tables will be the setting for much science activity.

For the older pupils in the intermediate school, science complexes will be necessary. These should consist of laboratory-demonstration rooms, science demonstration classrooms and general classroom space for science instruction. Science storage space and laboratory preparation rooms should be provided with each science complex. Utility lines should be so designed that the science demonstration classroom may eventually be converted into a laboratory-classroom, and that the general classroom may be converted into a science demonstration classroom. These science complexes should have provision for combining the laboratory room and the demonstration-classrooms into one for large-group instruction.

Individual project space should be provided in each science complex, to provide space for 10% of the pupil population to work on individual or group projects outside of general laboratory rooms. This space should be under visual control of science teachers or laboratory assistants. In the same area, individual laboratory-table carrels should be provided for each faculty member in the science complex.

Function

The transition from almost completely self-contained science instruction to almost completely departmentalized instruction will take place in the intermediate school. Hence, at the early years of this school, science instruction will take place largely within the classroom or in the adjoining science area. At the later intermediate years, science instruction will take place in a more formal manner, utilizing the facilities of the science complex. Younger children capable of benefiting from the latter type of instruction will be permitted to utilize the "upper" facilities.

Much of the instruction and science activity will still involve the use of science concepts closely related to content of other areas, such as social studies. Many individual and group projects may be underway, and space must be provided in which such work can be conducted more or less independently and separate from the work area of classmates. Teachers should have space in which to conduct individual projects with children, to review apparatus and/or equipment with them, and to prepare lessons or demonstrations undisturbed by others: hence, cubicles for teachers in the individual work-area will provide not merely visual control of the work-area, but space for teachers' offices as well.

Some of the pupils will utilize science materials drawn from the supply room for home or outside school use. The science supply room will provide access to such materials, as well as a means of storing projects or demonstration materials temporarily. Laboratory facilities should be flexible enough to provide for groups of up to five or six pupils each to work occasionally on projects, and for individuals or teams of two to function most of the time. Furthermore, laboratory facilities should be so designed as to permit rearrangement of much of the equipment as demands change.

3. Comprehensive High School

Facilities

Science demonstration classrooms should be provided with closed-circuit television capabil-

ities. The cameras should be able to cover the entire front or demonstration portion of the room, and classroom monitor sets should be large enough and numerous enough to provide each student with a direct view of the screen. Each of these rooms (so equipped) should be located centrally so that the adjoining demonstration classroom can be combined with it for large group instructional purposes.

General classroom spaces should be located next to demonstration rooms and should be divisible into two or more seminar-type rooms to house groups up to 15 in number. Demonstration classrooms should be built with utilities already installed so that they may eventually be converted into laboratory-type rooms. These utilities lines should include not only water, waste and electric power, but gas and empty conduit lines which might be utilized for telephone cables or compressed air. Venting by positive means is necessary for all laboratory rooms, and should be provided in such a manner that demonstration classrooms and general rooms might be added to the venting system in the future without serious structural change.

Preparation rooms should have direct access to both laboratories and demonstration rooms. Individual study stations for 10% of the rated capacity of the classrooms and demonstration classrooms should be provided with laboratory-type utilities and teacher stations. These study stations should not be assembled in larger numbers than ten at any one location and should be interspersed with teacher carrels.

Functions

It is expected that all pupils will study the minimum of two years of science and that academic or general diploma candidates will study an average of 1.5 years of science beyond that minimum. In the comprehensive high school, pupils will be encouraged to conduct individual and/or small group experimental studies, and to conduct relatively lengthy science projects; hence, facilities for conducting and storing these projects will be necessary. Ultimately, it is expected that the most talented science students will be conducting virtually individual course work or pursuing individual science topics in the central science facility of the Park. Individual work-areas will be available beyond the normal school day for some of these purposes, and pupils will utilize pieces of science equipment in such work both in school and outside school.

Faculty members will be more numerous than in the intermediate school and provision for sub-professional or non-professional personnel is necessary: laboratory assistants, school aides, etc. Provision for each of these must be made in the preparation rooms, department offices or laboratory-classrooms. Space for faculty members to meet in small groups, for teaching teams or for similar purposes must be provided: a larger room may be subdivided for this purpose, or three or four teacher-carrels may be grouped together to achieve this end.

Pupil Personnel Service Center

The pupil personnel service center will be centrally located for accessibility to the public as well as to the various school units of the Education Park. It will consist of the following facilities:

1. *Medical Suite:* This facility will provide space for all school health service functions for all units of the Park with the exception of first-aid and emergency room services. These will be provided in space associated with the school gymnasiums. Sufficient space should be provided for the following:

   a. Three offices for school nurses with associated examining rooms.

   b. One secretarial-type office for the medical secretary. Access should be provided to the central school records.

   c. One dental office.

   d. A waiting room sufficient to seat up to 20 people comfortably, with access to the nurses' offices, examination rooms and dental office.

The approximate areas requested are as follows:

Examination rooms	3 @ 375 sq. ft.	1,125 sq. ft.
Dental office	1 @ 190 sq. ft.	190 sq. ft.
Secretary's office	1 @ 375 sq. ft.	375 sq. ft.
Waiting rooms	1 @ 375 sq. ft.	375 sq. ft.
		2,065 sq. ft.

2. *Guidance Suite:* This facility will provide specialized guidance services for the children registered in the Education Park, and on referral, for children in near-by schools. In addition, some guidance services will be provided for out-of-school use and for adults in the community interested in vocational or occupational retrain-

ing. The office facilities required are for the following purposes:

a. Scholarship and financial aid for college-bound students.

b. Vocational counseling and placement service for students intending to go directly to work.

c. Guidance service for out-of-school youth and adults.

d. Provision for a Bureau of Child Guidance team, including psychologists, school social workers, etc.

e. A waiting room and reception room sufficient to seat up to 20 people comfortably, with access to these other office areas.

3. Office space for the supervisor of guidance assigned to the Education Park should be provided in the pupil personnel service center.

4. Pupil records must be available to the pupil personnel service center. Therefore, a secretarial-type office with access to the Education Park's computerized record service is necessary. This office must be capable of producing and mailing transcripts of records of all children who attend or have attended schools in the Education Park.

5. Provision should be made for an office for the attendance teacher assigned to the Education Park.

6. An administrator of pupil personnel service, responsible to the head of the education park, will have an office in the pupil personnel service center. This official will coordinate and schedule the services provided at the pupil personnel service center, and will supervise the operation of the record service. He will also be authorized to authenticate transcripts of student records.

Central Supply Facility

The Education Park will process vast quantities of supplies of different kinds. It is planned that a single supply center will be established in which the supply functions of the various levels of the Park can be carried on, and in which certain types of on-site maintenance and repair work can be conducted to increase the efficiency with which all units of the Park can function.

The functions of the supply center will include the following:

1. Inventory and requisition.
2. Reception.
3. Storage.
4. Issuance and delivery of supplies.

A warehouse type facility approximately 75 feet x 100 feet on one level is needed for the handling of supplies. There must be facilities for unloading trucks at one end of this warehouse, and a facility for delivery and distribution at the opposite end. All materials except food will be received in this warehouse facility: these include custodial supplies, general and specialized school supplies, library books and text books.

This center will provide the following services to all using personnel:

1. Inventory of supplies and equipment in all categories.
2. Central requisition and preparation of requisition forms, maintaining records of material requisitioned and back-ordered.
3. Receiving and acknowledging receipt of all books and supplies. Discrepancies will be noted and followed up by this center. Textbooks and other material will be prepared for issuance to children by being properly stamped, numbered and supplied with book labels.
4. Bills will be passed for payment through this center.
5. A "pick and pack" service will be provided for all using agencies (school offices, teachers, department chairmen, custodians, etc.) according to their requests.
6. Materials requested will be delivered by supply personnel to the point of use (classroom, office, laboratory or gymnasium).
7. Pick-up and transfer services will be supplied for the interchange of supply material.
8. All necessary supply records, reports and controls will be serviced at the supply center.

It is recommended that the supply center be staffed by non-professional personnel. These personnel should be, however, specially trained to handle their own supply functions. The supply center will be headed by a storekeeper who will be responsible for overseeing the operation. A secretary assigned to the storekeeper will assist him in preparing requisitions, handling reecipts, and performing other clerical functions.

Adjoining the supply warehouse will be storage facilities for mobile custodial equipment (e.g. snowplows) and light delivery vehicles for the supply service. Facilities for minor repairs on this equipment will be needed unless a transportation shop is included in the Park's industrial arts or vocational complexes.

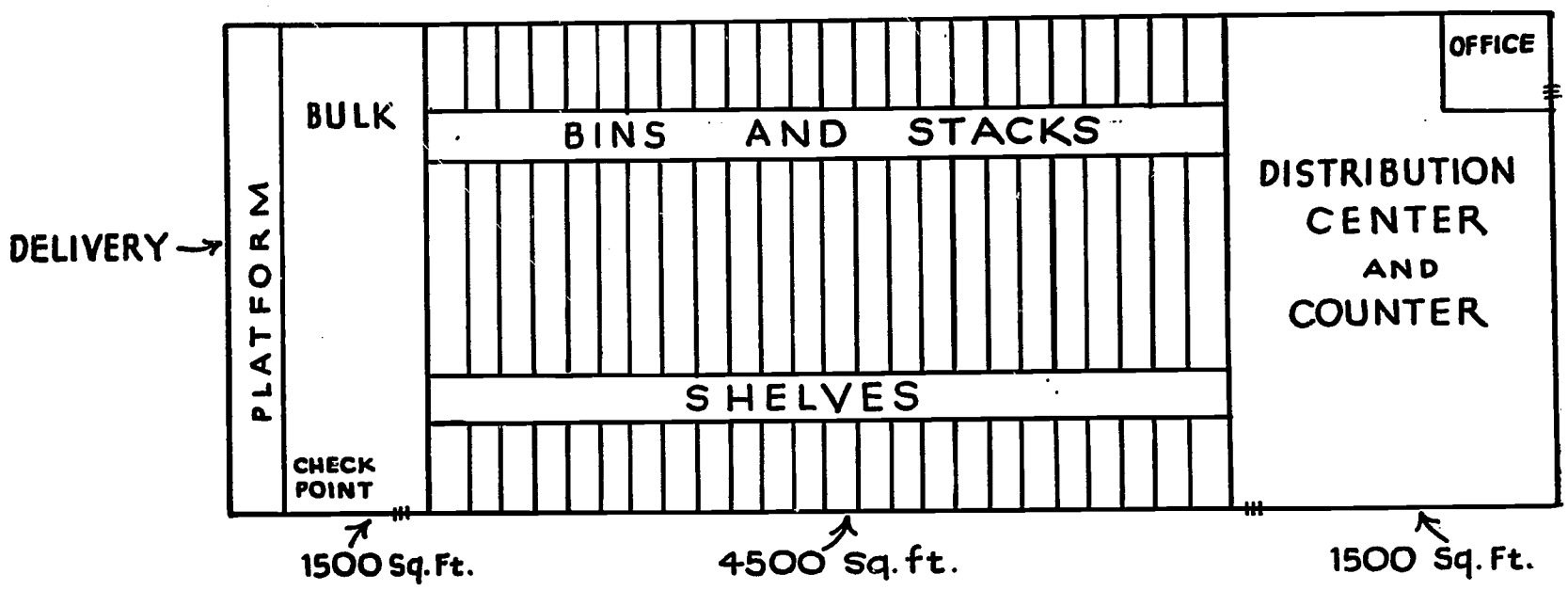
Connected to this warehouse facility (either on a second floor or in additional space) bookrooms and a library workroom will be established. The bookrooms should be capable of storing reserve textbooks from all three school levels.

The bookrooms will also have a work area in which textbooks may be inspected and undergo minor repairs.

The library workroom will possess work areas sufficient to process library books for all library units or resource centers in the Education Park. This service will be conducted by non-professional personnel assigned to the supply center, under the direction of a member of the library staff attached to the Education Park.

A central repair shop for audio-visual equipment will also be located in the supply center. A technician assigned to this shop will be responsible for repairing and servicing the audio-visual equipment assigned to the Education Park and all its units and will be responsible for maintaining the operation of the communications system of the Education Park.

A schematic diagram of the warehouse facilities appears below.



Food Service

It is planned that food service for the Education Park units will be provided through a number of separated eating areas. Each of these eating areas is intended to serve one unit of the Park. Pairs of eating areas will be served from a single kitchen. The kitchens will operate with frozen foods, and those in the comprehensive high school facility will also provide for snack bar type service of such optional items as beverages, ice cream, sandwich or dessert selections.

Children assigned to each unit will have lunch periods in groups of up to 350 at a time. It is planned that there will be three lunch periods in the intermediate and high school, and two in the primary school. However, the lunch facility must be planned with the possibility in mind that continuous lunch service will be called for in the future if the program requirements of the schools change into some module other than the 40-45 minute periods.

The facilities in which children will eat should be designed basically as instructional spaces, with good acoustics and impervious desk- or tabletops. The plan is for the children to eat in spaces designed primarily as instructional areas, rather than to undergo some instruction in an area primarily designed as a cafeteria. It is planned to divide the total number of children eating lunch in any one unit by keeping operable walls closed. As a result, children will actually eat with a social group of up to 175 schoolmates in the same lunch area at the same time.

There will be two faculty lunch rooms. It is intended that faculty and staff members of all three school levels will have access to these lunch facilities, and that the opportunity to break bread together will lead not only to social but to educational interchange among teachers on all three levels. The faculty lunch facility should be planned as a lounge-type room in as informal and attractive a manner as possible. These faculty lunch rooms will be usable as conference and lounge rooms during the school day.

Each faculty lunch room should be able to handle up to 125 staff members at a single seating. The lunch rooms should be so located as to be able to attract staff members from all three school levels.

Outdoor Facilities

Transportation to and from the Education Park requires the presence of a bus loading facility accessible to each of the units of the schools in the Park. The bus loading facility should be sheltered from the weather, and should open into

primary school commons areas or the large group areas of the intermediate and high schools. It will be necessary to provide space for buses to be parked and to turn around, or to have a continuous driveway with one entrance and one exit.

An access route is needed for trucks to reach the supply center. This should be located separate from the bus loading area. It is necessary for a roadway, or combination roadway and path, to connect the supply center with one entrance to each unit of the Education Park for the delivery of supplies and food to the kitchen.

A parking area will be necessary for faculty cars during the school day, and for the use of the community in afternoon or evening hours. While the residents of Co-op City will be able to park their cars in Co-op City garages, it is essential to provide parking spaces for people served by the Education Park who do not reside in the development.

The *landscape plan* for the Education Park must harmonize with that of the Co-op City area and should include provision for the following two features:

1. Plantings should include specimens of trees and shrubs native to the region, clearly identified by scientific and popular names. These plantings will be part of the learning environment. It is desirable that provisions be included in the landscaping plan for addition of certain specimens on an annual basis during the years of operation of the Education Park.

2. The plantings should be so arranged as to include trees, shrubs, perennials and certain areas for beds of annual plants. These should be so planned that some landscape features will be in flower at any time during the growing seasons. The annual beds and borders may be tended by school garden groups and by community groups during the actual operation of the Education Park.

Highlights Of the Education Park Plan

The Education Park plan offers a number of advantages to those it serves and to those who serve in it. Following are some of the outstanding features or contributions made by the Education Park to the people it serves:

I. The Pupils

1. A natural environment for constructive integration.
2. An opportunity through non-grading to move at their individual rates through curriculum areas.
3. An opportunity to work in some activities with children of other school levels.
4. An opportunity to use special facilities that might not otherwise be available (e.g. planetarium, weather station, little theatre, arts facilities).
5. Improved guidance and health services.
6. Improved articulation of learning through a continuously planned program of instruction covering grades pre-K through 12, and coordinated on the same site within the same general school organization.
7. Identification with school units of a size that is modest by New York City standards within a general facility that is significantly larger than a normal New York City school.

II. The Parents

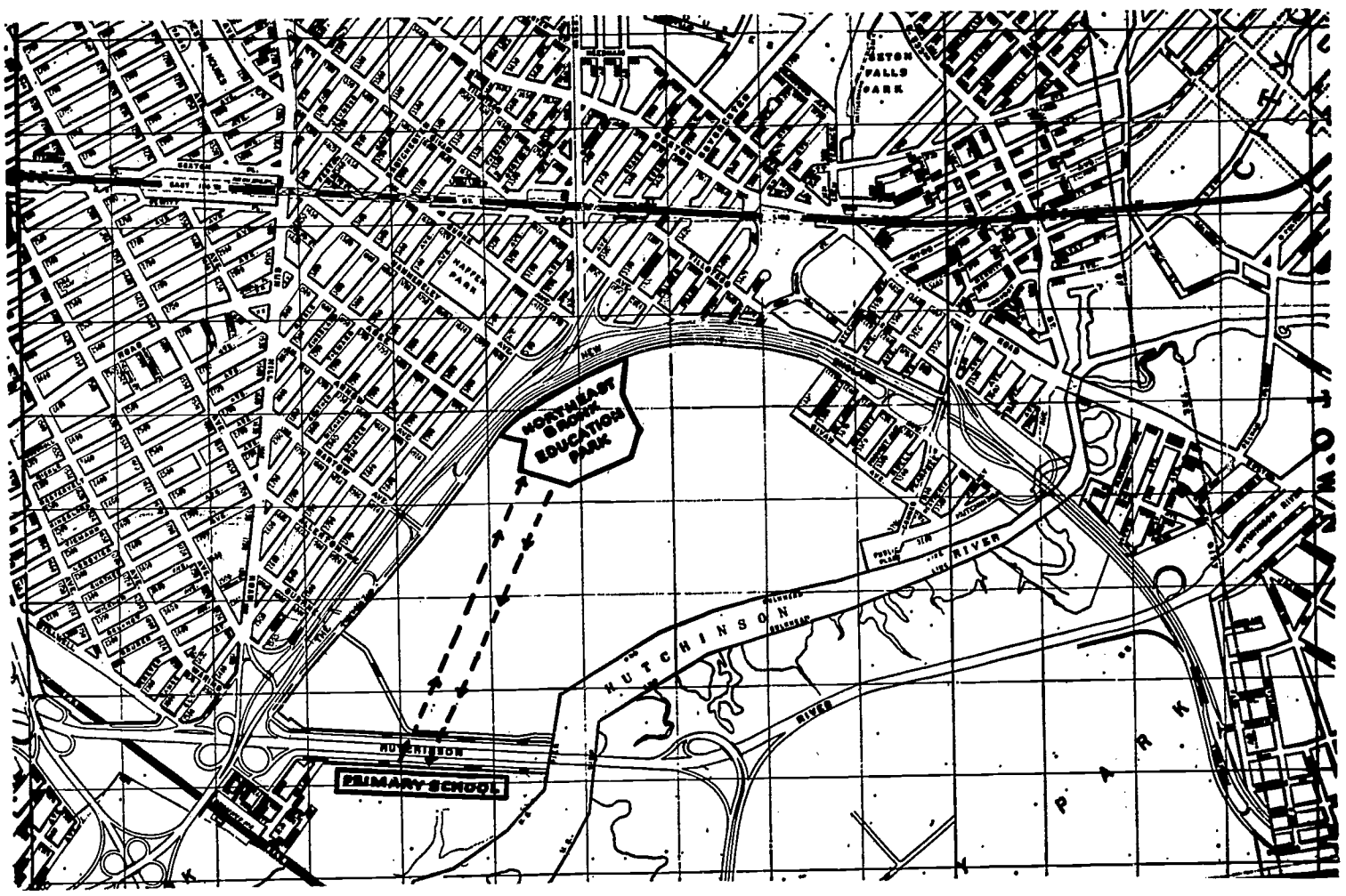
1. Convenience and improved opportunity to become familiar with the school attended by their children in one basic location.
2. Security in the knowledge that pupil weaknesses and strengths will be served by a wider span of professional expertise and with a wider variety of materials than the conventional school permits.
3. Greater certitude of continuity of school program from one school level to another.
4. Improved opportunity to take part in parent education activities in facilities planned for the purpose.
5. Greater opportunity to participate in social, recreational, and organizational activity with parents of diverse backgrounds.

III. The Professional Staff

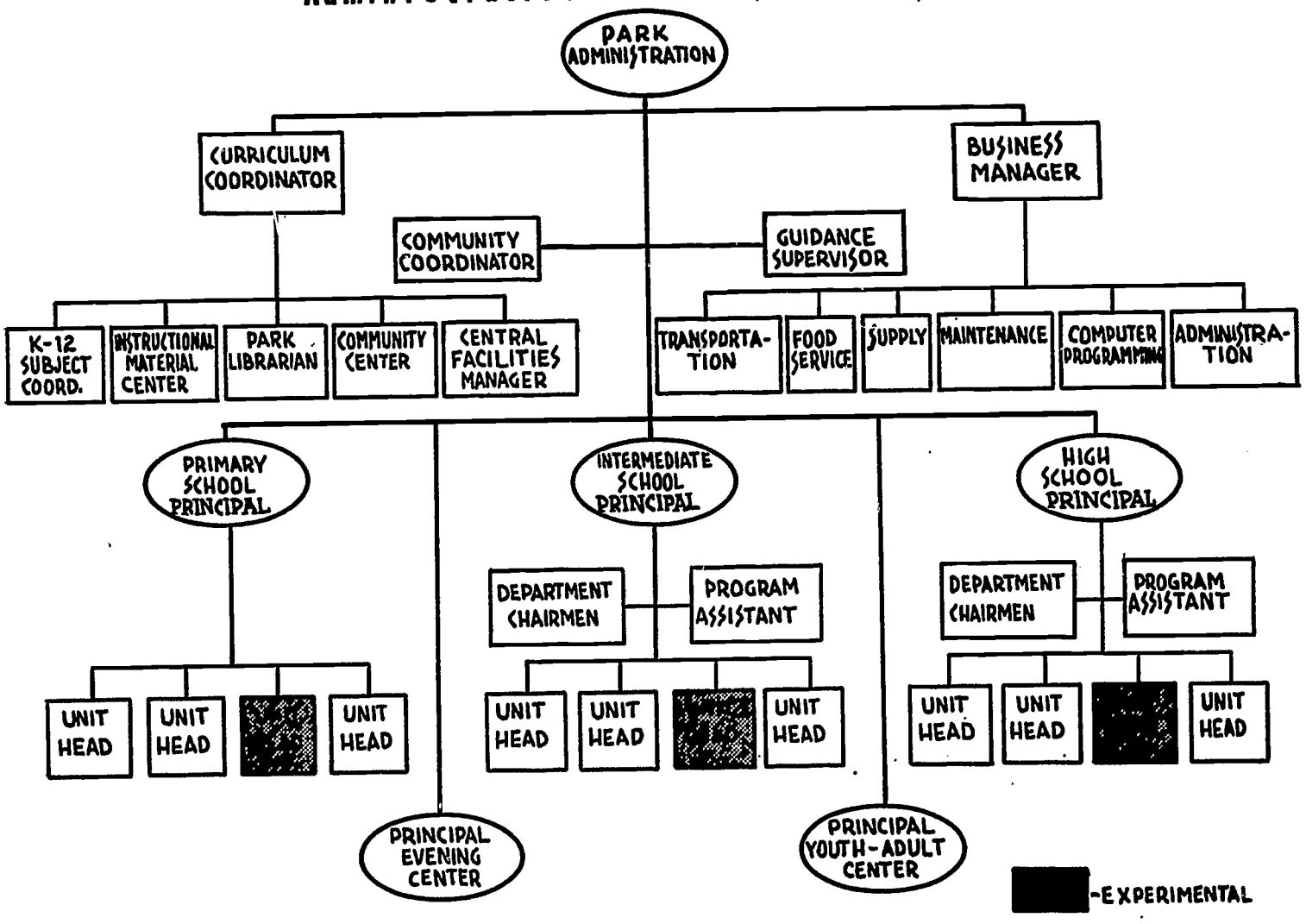
1. Greater variety of instructional materials and physical resources for instruction.
2. Articulation of curriculum and administrative responsibilities by having these concentrated in an administrative service and supply center.
3. Improved opportunity to work with staff members from other school levels.
4. Improved curriculum services and supervisory services, with a greater degree of articulation among the levels and an opportunity to provide more individualized service to the students.
5. The presence of one experimental unit at each level will provide an opportunity for innovation in curriculum, administration and other professional areas in a situation in which a number of parallel "control" groups are available.

IV. The Community

1. More efficient and economical operation of the Education Park will yield more effective returns for the education dollar spent in this facility.
2. The presence of the Education Park will warrant the inclusion of many school facilities not otherwise available in individual schools, and will provide an opportunity for field testing educational materials, learning systems and architectural features for possible use in other parts of the school system.
3. Special facilities as described above will be provided for the broad community served by the Education Park.
4. The Education Park will provide a means for direct participation in educational planning by community leaders.



Administrative Relationships



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Appendices:

Park Plan of Organization

Planning Classrooms and Auxiliary Spaces

The Community School and the Park

The Arts—Fine and Applied

Instructional Materials Center

Health Education

APPENDIX I

PARK PLAN OF ORGANIZATION

By CYRIL G. SARGENT

In planning facilities for 10,000 pupils one of the important questions which emerges early is that of organization. Not only are we dealing with a very large total number of pupils, but we may well find that a very large portion of this number will experience 13 or 14 years of schooling in one place. Co-op City represents home ownership and it would appear that population mobility might well be less than in areas dominated by rental property.

This in itself represents a significant change in the patterns of schooling which most children have experienced in the past. For most there have been three changes of schools, three enlargements of social contacts and companions, and three expansions of paths to school and school environments. For some, this has still meant a relatively restricted increase in range and variety, but for others, particularly at the high school level, it has meant a completely different set of social relationships, intellectual conditions and even images of the city and their own world. The opportunity to elect or compete for admission to the specialized high schools will, of course, still be present, and perhaps if the Park program itself achieves some degree of superiority in one or more fields the possibility might emerge of a large part of the high school group of the Park going to other schools with other city groups being brought in for certain specialized training during the high school period.

But for the present the assumption is made that many will stay.

For these, the Park in organizational pattern, physical space and total site design must seek to provide conditions conducive to the achievement of a personal identity, an effective pattern of social relationships and clearly defined maturational sequences—this latter not only in terms of intellectual tasks but also in terms of social relationships and physical space. What this means is that the "standard" 1,200-pupil elementary, 1,800-pupil intermediate and 4,000-pupil senior high school may not constitute appropriate organizational units for a really massive school population of 10,000 pupils. Without prior park-type experience to rely on we would do well to run the risk of overemphasizing individual needs to protect against the regimentation of size, and to reduce by variety and scale the feeling of mass, crowd and sameness.

Organization should of course be determined essentially in terms of instructional goals of the school—both intellectual and social. It should be chosen so as to carry out effectively and efficiently the tasks of the institution.

Unfortunately there are no very comprehensive theories or formulations about organization. To some it is essentially communications, to others control, and to others the important product is "organizational climate." Moreover, organization is intimately related to particular institutional goals. And since in education the individual with his needs, aspirations and talents is pre-eminent, any organizational scheme should seek to maximize the potential for individual development.

Organization in this memorandum will be viewed from two points of view, which are essentially parts of the same question of how to organize for effective teaching and learning but they relate to different magnitudes. The first is concerned directly with interaction between pupils and teachers; the second with relationships between larger aggregates of pupils and teachers together with supplementary supervisory and counseling personnel. Both are related of course to the organization of space.

1. Organization for Learning and Instruction

If one considers the full range of appropriate grouping between pupils and staff the scale would go from "0"—a single pupil alone in his own pursuit of knowledge or skill—to an entire grade or more assembled in an auditorium to hear a talk by an outside speaker or the discussion of a topic of general concern led by the principal. Table I suggests some of the possible patterns.

TABLE I

Pupils	*Teachers*
1	0
1	1
5-10	1
20-30	1
75-150	3-5 (in teams)
200 and over	1-15

The school organization (and plant) should make it possible to accommodate all or most of these arrangements. The pupil "alone" can be provided for by the study carrel in the resource center, the library or the advanced science laboratory. The one-to-one relationship between student and teacher or student and counselor is provided for by teachers' offices, guidance spaces and the like. The group of 5-10 would require small 350-400 square feet seminar type rooms, the 20-30 size groups the standard classroom and the 75-150 a large group instruction area appropriately designed for this number of pupils. Larger groups would ideally be located in an auditorium which might be divisible to accommodate groups of 200 or more as well as the full capacity of the hall.

An opportunity—and a need—appears present in planning the Park to provide an important expanded emphasis on the 0-1, 1-1 and small group situations. The need stems from the problem of regimentation which affects most large scale operations; the opportunity from this same large scale, for this may make possible some economies of space which can be taken advantage of for more carrels, offices, small seminar or conference areas and the like. Subsequent quantitative analysis can test this out.

Organization for variety in instructional relationships has been shown to be a complicated process. It requires not only a computer-controlled scheduling of space, pupil and teacher schedules, but more important, a new pattern of professional relationships among teachers themselves. It would seem however that in a school of the Park's dimensions, some spaces should be definitely planned for and designed as large-group instructional areas, and some as small-group spaces. In the former particularly, the usual opening-up of two classrooms to make one large area is usually less than satisfactory because of sight lines, demonstration requirements and group discussion needs.

Some rationale is needed for determining the number of special spaces needed initially which can be specifically designed as such. Then specifications indicating possible future directions and needs can be stated so that flexibility is built in the design, although this "future" space will be somewhat less satisfactory. Unfortunately it appears that there is no presently available design solution to universal classroom space.

The following is an illustrative example of one approach to planning for organization which requires groups varied in size. Taking the 1966 register figures for Erasmus Hall High School and pro-rating them for 4,000 we have the following total number of instructional hours per week in each of the major academic areas (Table II).

TABLE II

Subject	*Hours per Week*
English	21,510
Language	18,990
Social Studies	12,345
Mathematics	11,730
Science*	14,347
Total	78,922

*Physics and chemistry at 7 hrs./wk.

Using a utilization factor of 85%, this number of hours of instruction would require 63 regular non-specialized classrooms and 14 lab-lecture science rooms.

If it is established, for example, that 10% of a student's class time on the average will be spent in large group instruction, 80% in the "standard" classroom group and 10% in the small group seminar type of activity, the weekly instructional time would require the following number of spaces (exclusive of science).

Size	*Utilization Factor*	*No. of Spaces*
Large Groups	40%	5
Standard Groups	85%	50
Seminar Groups	85%	23

We can apply this method to the general analysis of space requests once we have established the initial "norms" for organizational patterns of instruction.

2. Organization for Supervision, Administration and Control

The Primary School

Two assumptions will be made:

1) that there will be a continuing emphasis on non-grading, and

2) that teachers will increasingly work together. Whether this effort results in full-fledged teaching teams or more modest cooperative arrangements, the solitary teacher in his or her single classroom seems bound to give way to more flexible arrangements.

It seems reasonable first to continue to separate out the kindergarten and pre-kindergarten for special consideration. The kindergarten has regularly been so separated physically and has frequently had its special play space as well. There are well justified determinations, for many children at this stage of socialization are not ready to protect their "turf" or to engage in larger group activities. This would be all the more true for the "pre-K" children. What is proposed therefore is a grouping of pre-kindergarten and kindergarten space somewhat separate from the rest of the Park.

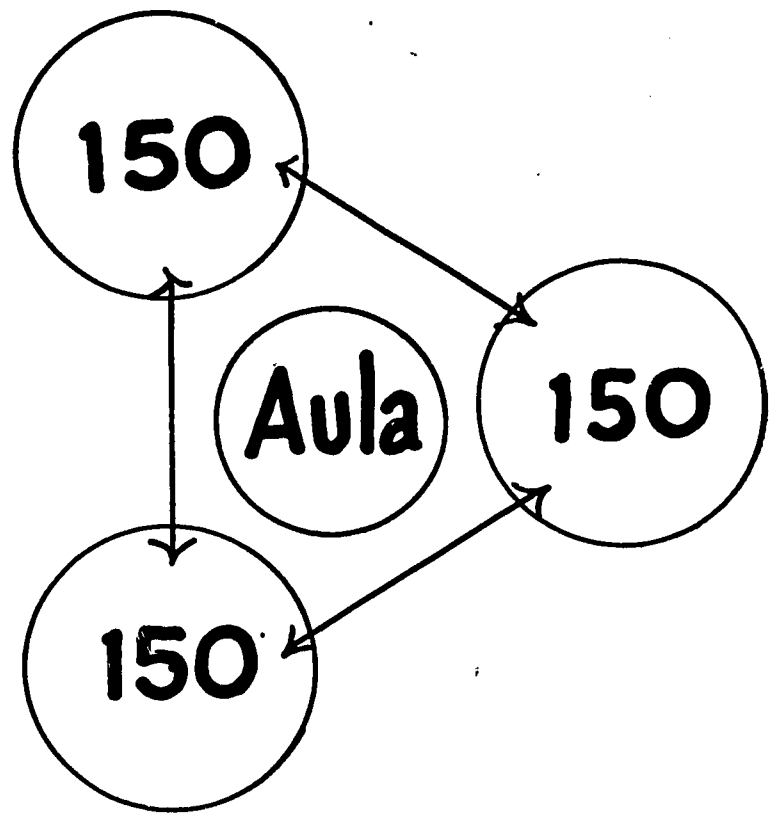
If we assume that there are to be 480 kindergarten children we will need 10 kindergarten classrooms. With these we can cluster the proposed 13 classrooms for the pre-kindergarten children. These spaces should include conference areas for parents and generous storage areas—but the exact specifications must come later. Except for jurisdictional problems, these pre-kindergarten and kindergarten rooms might very appropriately be dispersed among the housing units themselves, for this creates a sort of transitional space, relates to the home and encourages the participation of the parents.

For the primary school, grades 1-4, we might then think of groupings of 150 pupils and five teachers as constituting in the primary school a basic unit or organizational building block, since experience with collaborative teaching suggests groupings of no fewer than three nor more than six.

This unit of 150 also seems reasonable in terms of the social roles of the primary school child and his expanding span of social interactions. It is a small enough grouping for him to know everyone somewhat and a reasonably larger number very well. (It might be better to consider this group as made up of 120 pupils and four teachers, with the thought that if at some future date, the recommended pupil-teacher ratio of 25-to-1 is implemented, an additional teacher could be added to the unit and still keep the total number of teachers to five.

Since most of the primary school activities will be conducted within what might be called general space we need very little beyond the requirement of clustering classrooms so as to achieve the variety called for in team teaching. Such special space as is needed might be in the form of an aula and consist of an indoor play-area, which could also serve as a small auditorium and as an eating space. This aula could serve three of the basic units and together these three units could form a "school" of 450 pupils and 15 teachers (Figure I).

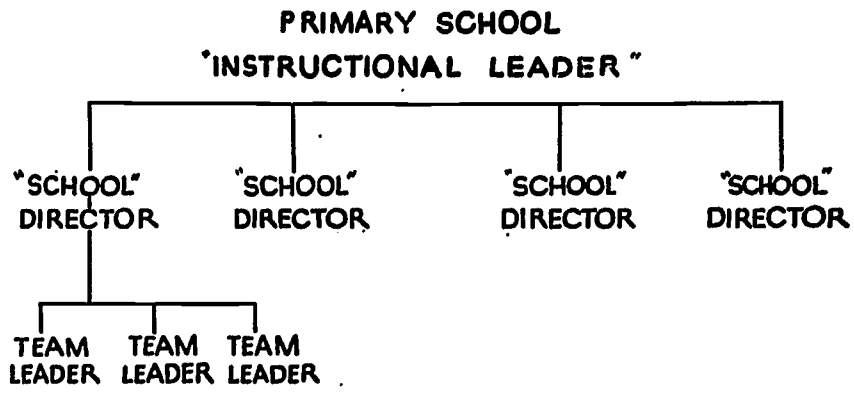
FIGURE I



This larger organizational unit would, for administrative and supervisory purposes, be relatively complete. It would have a hierarchy of staff roles, culminating in that of an "instructional leader" who would be responsible for the full range of activities and would also be at a node of the communications-linkage system of the entire park complex (Figure II).

FIGURE II

STAFF ORGANIZATION

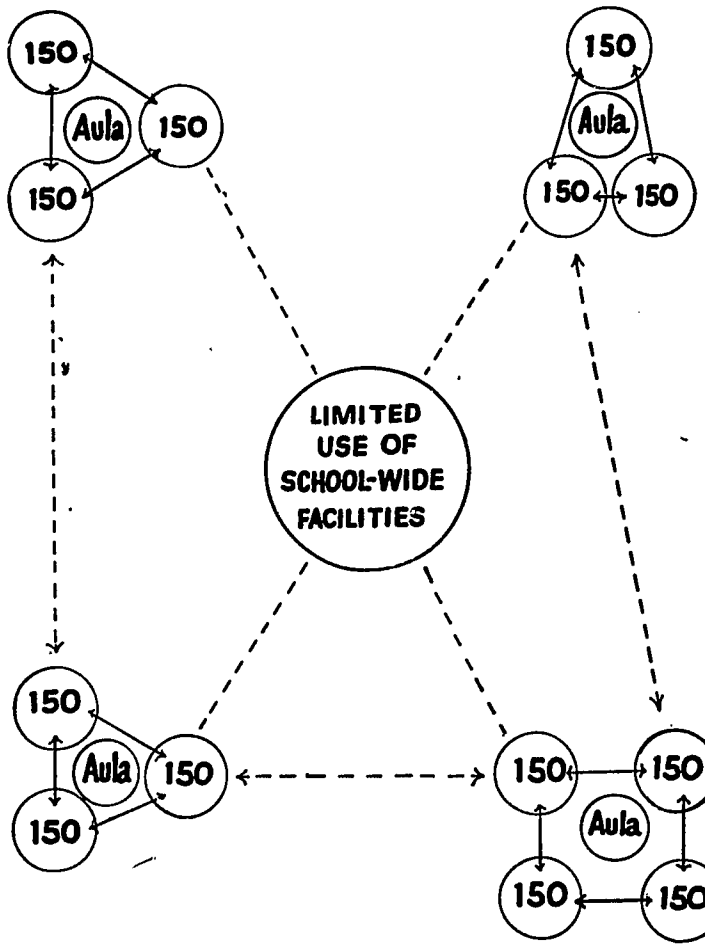


We would then have the following:

a) 150 x 3 = 450 (a "school")
450 x 3 = 1,350
600 x 1 = 600 (or 2 at 300)
Total 1,950

Schematically the primary units might be represented thus:

FIGURE III



Or if 120 is chosen as the basic unit then

b) 120 x 4 = 480
480 x 4 = 1,920

This latter grouping would be expressed schematically in essentially the same fashior but each "school" would have four units of 120 pupils each.

The Middle School

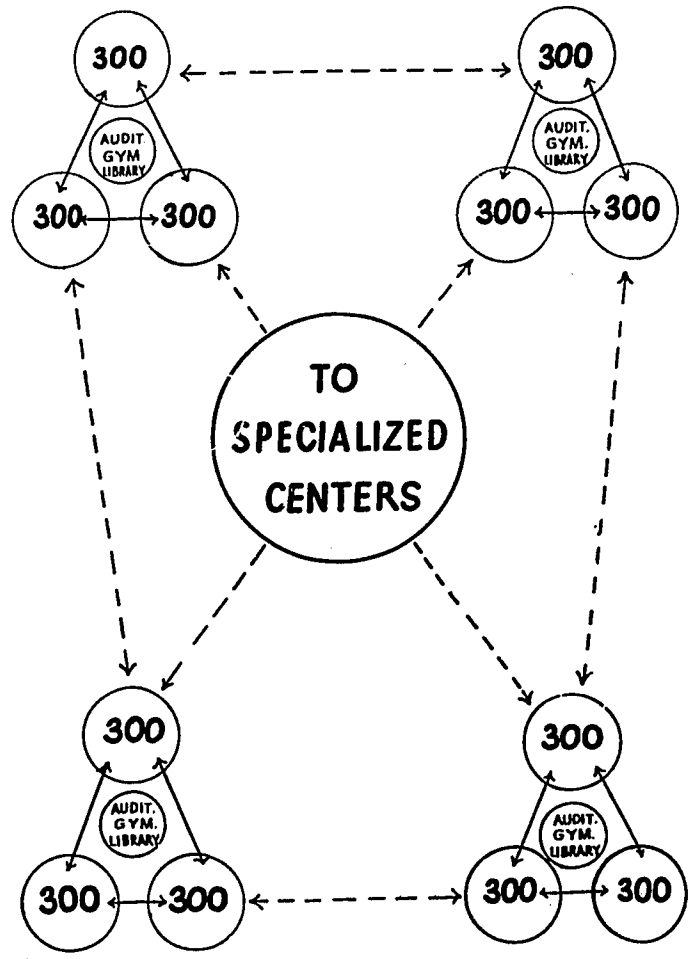
Using the same approach for the middle school we can expand the basic unit in terms both of a wider span of social interaction among older pupils with increasingly structured activities and roles. The need for some specialized teaching personnel, equipment and spaces also argues for a larger grouping of pupils and staff.

Here a unit of 300 would permit a staff to plan and work together and to incorporate specialization of teaching roles by subject matter at the higher grade levels. Each such unit could also contain some specialized equipment or spaces such as science and language labs, shop, home economics, library and eating facilities, etc. There would be guidance and supervisory staff and a unit "head" to coordinate the program.

If these 300-pupil units were then clustered by groups of three we would have four such groupings in the Park.

300 x 3 = 900 (a "school")
900 x 4 = 3,600
Schematically this is shown in Figure IV.

FIGURE IV



Alternatively we could have units of 400, place them together in 2's or 3's and have the following:

a) 400 x 2 = 800
800 x 3 = 2,400
(400 x 3) x 1 = 1,200
3,600

b) 400 x 3 = 1,200
1,200 x 3 = 3,600

If alternate "a" works out in terms of quantitative analysis of space and personnel, it is a preferred pattern in terms of constraints on size of the schools.

The High School

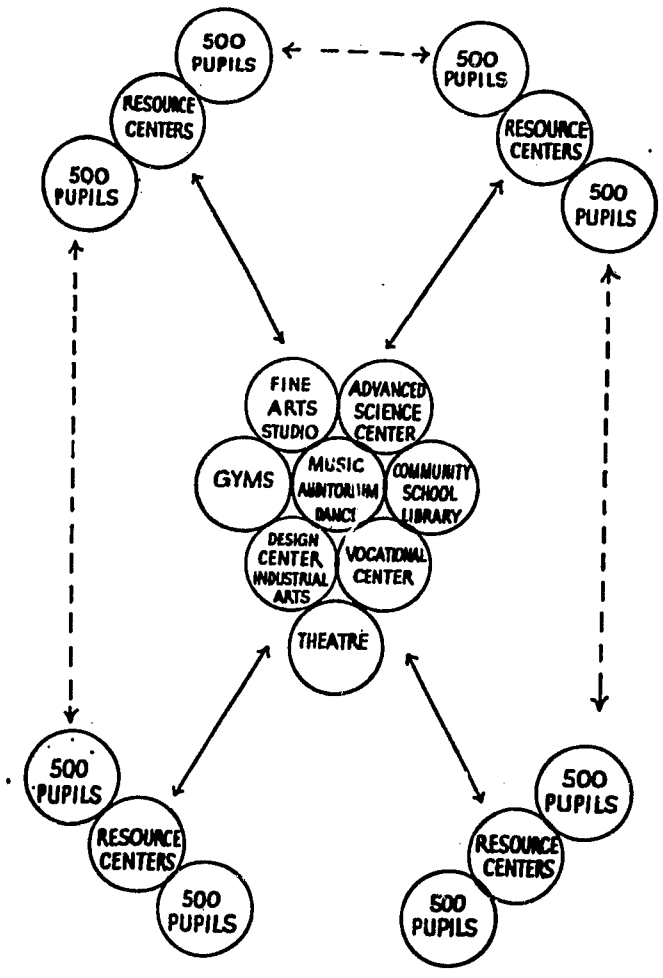
For the senior high school, we should again expand the basic unit to encompass a still larger range of specialization of staff, equipment and space, while at the same time keeping the size of the unit small enough to permit most of the staff of a unit to know each pupil or at least a very large majority of them, and to continue the feeling on the part of the pupil that some few know him well. We could have 400-pupil units (since this is thought to be a still manageable "span of knowing" by principals who have given some thought to the question and since it is currently in use in some house plan high schools with apparent satisfaction—again based more on expert opinion than on very careful analysis).

We would thus have:

400 × 3 = 1,200
1,200 × 3 = 3,600
400 × 2 = 800
4,400

If we wish to fit precisely to 4,000 we can move this last unit to one of the 1,200 clusters, making two @ 1,200 and one @ 1,600.

FIGURE V



Another pattern would be to use 500 as the basic unit and then either group two of these together for a "school," making four such 1,000-pupil schools, or grouping four together and producing two senior high school units.

The two alternatives at 500 would provide, on the one hand, four equal and competing (in the positive sense) schools, but would have more specialized staff, equipment and space outside the unit, while on the other, the two large schools could have more of the program self-contained.

There are advantages in each. In the former, the total school size of 1,000 makes it least like the traditional high school in image and organization, and can therefore be useful in developing new and perhaps more effective supervisory and administrative services and patterns. It might give the student more of an interest in and feeling for his "house" and the total park (i.e. in identifying with either 500 or 4,000). The smaller unit would also more readily justify special central facilities to avoid duplication.

It is at this point that several concerns converge: the need to concentrate specialized staff and equipment at the upper grade levels, the requirements for separation of spaces for community use of a variety of these same spaces, and the latitude and freedom of movement which should be made available to the older pupils. For a large part of the student body the aim should be to expand the amount of self-directed activity, independent study and responsible student roles. The school plant should respond to the students' increasing maturity.

If there is to be this centralization of specialized spaces, the smaller high school organizational model would seem to be preferred. It would serve as the home base for two groups of 500 pupils, have sub-library, eating and office spaces. Guidance counselors and instructional "heads" would be located here, but except for general classrooms for English, history and perhaps mathematics, instruction would for the most part be concentrated in the specialized areas.

The relationship of the units, (paralleling the patterns of the middle school) diagramatically is shown in Figure V.

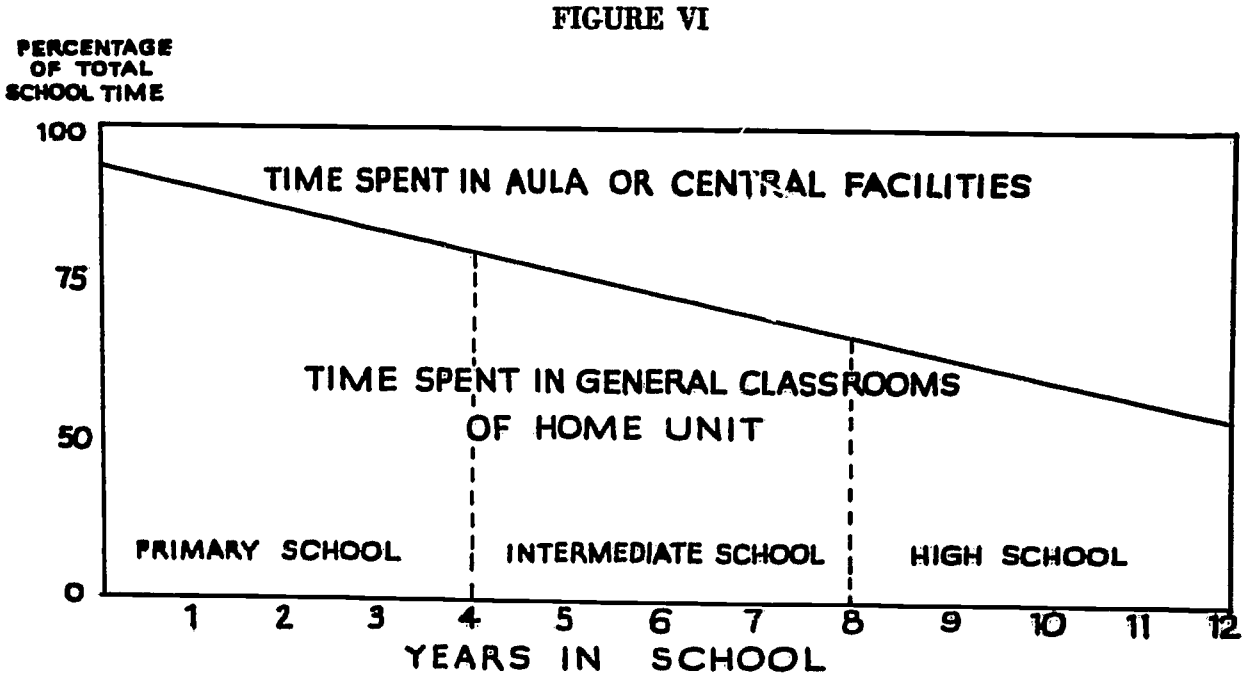
The total plan of organization would provide a regular progression of pupil movement with the grade level attained, or better, with the intellectual attainment and social maturity of the student.

In planning space for the school units and in determining the relationships between school units and central facilities this progression would represent a distribution which may be diagrammed as in Figure VI.

The Park would then consist of four elementary schools, each composed of three 150-pupil units, four intermediate schools each containing three 300-pupil groups, and four high schools each with two 500-pupil elements. Travel would for the most part be internal within the unit and school. The amount of exterior movement would increase with grade level and become for many maximum in the senior year. But even here block scheduling would make it possible to keep this traffic within bounds, thus avoiding the necessity of having student traffic "control" the basic design solution—although it would of course be a consideration in any plan.

An organizational approach such as proposed can serve as a conceptual model for the process of planning the utilization and design of the total site. It may also provide a framework for innovation and improvement in the instructional program and process, thus adding to the stature of the entire Park effort.

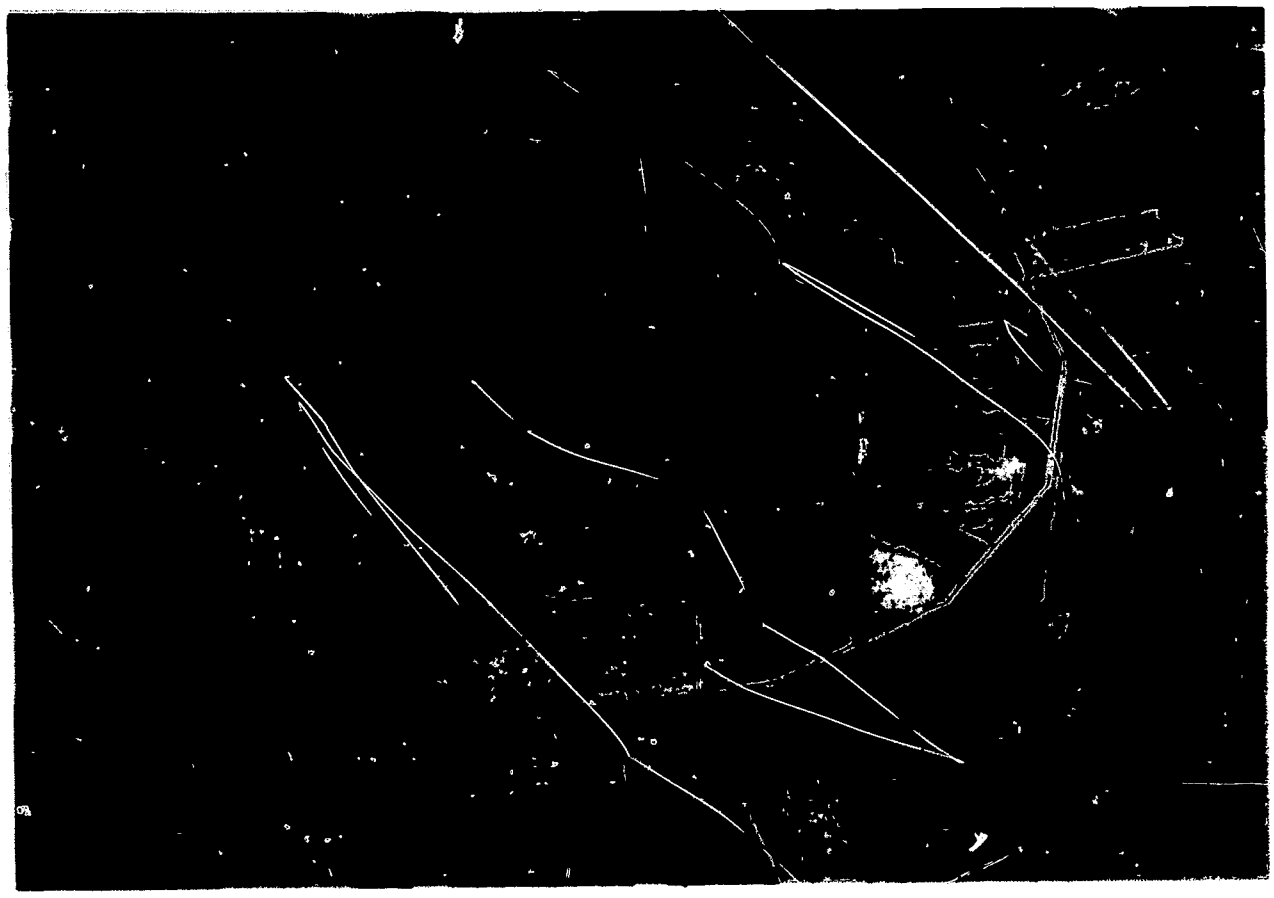
FIGURE VI



APPENDIX II

PLANNING CLASSROOMS AND AUXILIARY SPACES

By CYRIL G. SARGENT



One of the purposes of grouping of pupils by units of 150, 300 or 500 is to make possible a certain personal knowledge about each student which, hopefully, can help motivate and better guide his intellectual efforts. At the same time, it can make available a wide range of opportunities for engaging in extracurricular activities and leadership roles. It also seeks to bring services to the pupil rather than having him go in search of them.

The unit consists of the pupils, a core group of teachers, supervisors, guidance personnel and library staff assistants. Together they make up the "constant" members of the unit. The classrooms, offices and supplementary spaces make up the physical "house." The pupils leave this home base for "specialized" instruction—i.e. instruction which requires more highly specialized personnel than the core staff, more elaborate space and equipment, or for which there is not a large enough enrollment in the home unit to justify offering the work.

Just who these teachers are, and what the spaces should be, depends on how extensive the decentralization of personnel and space is to be. It also depends on the grade level and size of the unit grouping.

For illustrative purposes assume a unit at the senior high school level. This group is heterogeneously selected and stays together throughout the four high school years. They go their several academic and vocational program ways, but they have some common program elements, extra-curricular and social activities, and they organize internally for a variety of intramural purposes—sports, drama, music, student council, etc. Instruction in English, mathematics, social studies and languages is generally given in the center, while vocational work, science, art, music and advanced work in most fields is offered in those areas of the complex designed especially for these functions.

A second feature of this decentralization plan is to break up some of the large central facilities of the traditional school and make these available to the students and faculty of the units. The most important feature of the unit plan is the resultant *resource center*, commons area or sub-library, as it is variously called. Whatever its name, its purpose is to provide carrel space and listening booths for individual study, and make available reference books and study space. Sometimes offices for administrative or guidance personnel, or for teachers, are added to this and it is also made to serve as an after-school meeting place.

The space for such a resource center comes from a reduction of the central library area, elimination of study halls and from a decentralization of the cafeteria. Some designs are such that these center areas also serve as "walk-thru" space and thus make use of what otherwise might be only corridors. (This latter use is of course subject to safety-code restrictions.)

The key question in developing resource areas without significantly increasing the total square foot requirements for the school as a whole is that of determining where this space can be "taken from."

Library and cafeteria are the main sources. The usual school library seats anywhere from 10%-15% of the student body. With the house plan, this percentage is readily reduced to 2%-5%. The cafeteria requirements are met in the house by using the resource area and opening up two or more classrooms on to the central area. Food is shipped in from a central kitchen. All trays and eating utensils are made of disposable materials which are removed at the end of the lunch period. This method of feeding has the added advantage of breaking up the mass feeding process with its attendant problems of din, digestion and discipline.

How this can work may be illustrated by taking a unit of 500 pupils. If we assume that, on the average, 4/7 of the students' instructional time will be "in house" and we can use an 85%

utilization rate with a class size of 32, then 11 (10.5) classrooms will be required for the house unit. During the eating time, 167 pupils will be fed in each of the three sessions. Of these, 95 would otherwise be in "in house" classrooms. Since they are eating this will release three classrooms. If we use these classrooms for eating then we are left with 71 pupils to be seated in the resource center itself. Diagramatically, the house unit might consist of 11 classrooms, six of which might be clustered around the resource center, with three opening up directly on to the center for the lunch periods (Figure I).

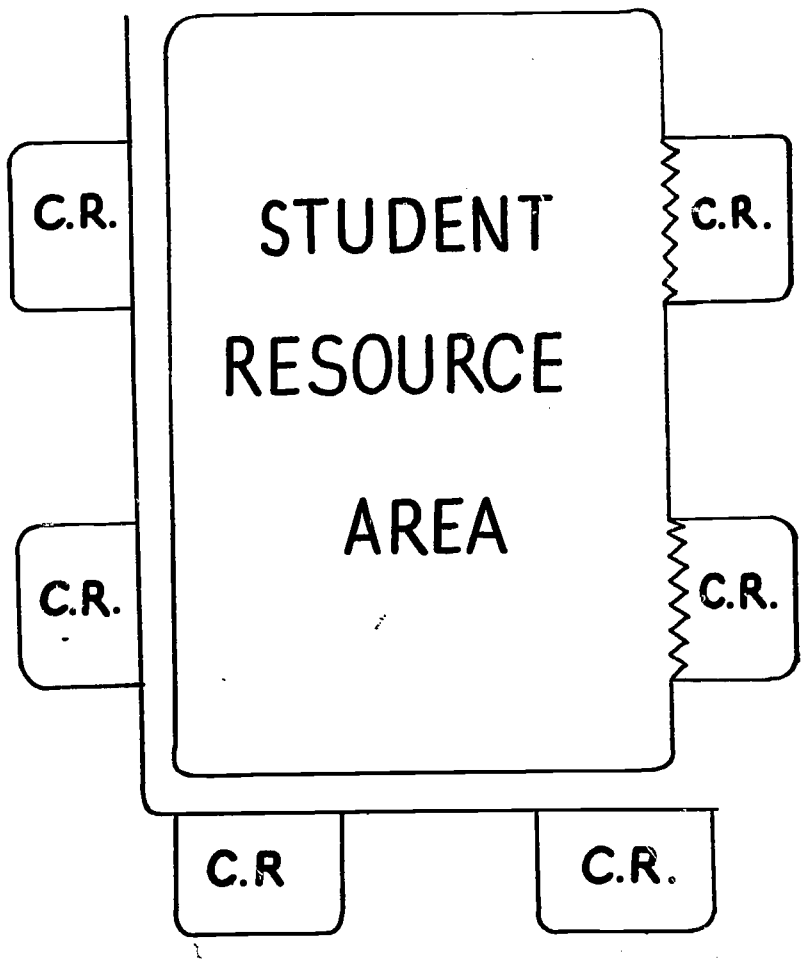
Pursuing this particular pattern further we would need to provide in addition to the pupils' resource center a faculty office center, conference areas and instructional media sub-center. (The main IMC would be centrally located.) For illustrative purposes, we might then need space for offices for 16 teachers, guidance personnel, administrative and clerical staff. There would be referance materials and work space for small teacher-planning conferences. The teachers would use this area for their lunchroom.

It might be centrally located as in Figure I, but would not need to have adjacent classrooms open up onto it. It might be completely surrounded by corridor space. Architecturally, we would then have a two-story house unit. On the first floor there would be five or six classrooms with the student resource center. Directly above would be six or five classrooms with the staff resource center.

What seems evident, and this is borne out by experience, is that the double-load corridor-type of school plan cannot satisfy these requirements at all effectively. New shapes and forms are required. Imagination in design is essential.

Figure I is an example of a possible classroom clustering with a center resource area. While it does not precisely fit the program outlined in this memorandum, it is illustrative of the type of design solution consistent with the sub-unit approach.

FIGURE I



APPENDIX III

THE COMMUNITY SCHOOL AND THE PARK

By CYRIL G. SARGENT

The traditional public school has sparse links with its community. Yet there are examples of schools which reach out into the community and develop effective roles and relationships. It is rather obvious to suggest that a good school is difficult to achieve without a good community. The Education Park would seem to provide an opportunity to test on a more significant scale the possibility of expanding this relationship and of formulating a wide range of effective activities which can both nurture the community, and by which the school and its efforts can themselves be nurtured.

The mere aggregation of 50,000 to 55,000 people may make up Co-op City, but it takes a common purpose and substantial cooperative efforts to make a community. Without some community of purpose, the project may be merely an aggregate and a collision of people and buildings. In contrast, the culture of a genuine community can transmit a wealth of civilization, enjoyment, even health, to each of its participating members.

The term community of course is not limited to the geographical boundaries of the development, the borough or even the city, yet the development is the point of daily face-to-face interaction. It can therefore be the focus of a set of satisfying and creative relationships with fellow members of the community. And the schools may well serve as the "seed" crystals around which these neighborhood or community relationships develop.

What a community program is and what its implications are for the planning and designing of the school park is complicated by the fact that the term is often used to refer to any of three somewhat different programs. For the Park it could mean a high development of all three.

Without elaborations here the three types of programs might be summarized as follows:

1. *A highly developed use of community resources for carrying forward the basic educational program.*

The variety of purposes and relationships may be involved in such a development include: drawing on trained personnel from industry, business, research and other fields for part-time teaching; combined work-study programs in business, industrial, governmental, health or civic programs for secondary school pupils; use of parks, marshland or river for "nature study" even by pupils in the elementary grades, and in later years for study of biology and public health; making the community and its social and political life a prime source of study in civics, economics and other social studies; joint programs of cultural enrichment, involving museums, libraries, historical societies and the community's resources in painting, sculpture, music, drama and literature. This development both implies a relationship with the immediate geographical vicinity and with the city and region. It suggests the development of facilities particularly in the arts and sciences on the school site itself.

2. *A substantial use of the Park as a neighborhood and community center.*

A program of this sort implies that the people of the Co-op development would make use of the school facilities to carry on activities in which they are interested, largely under leaderships of their own choosing. This is different from the conduct of some

more limited types of programs conducted by the school department, although these can be a subordinate aspect of this type of community school program.

The program may include:

Athletic and physical fitness activities.

Recreational programs of all kinds and for all ages—from hobby clubs to dancing, and from "little theatres" to painting, sculpture and "the arts" in general.

Meetings and suppers of the "neighborhood" associations, youth groups, mothers clubs, senior citizens, and meetings of the Co-op organization itself.

Programs for neighborhood and civic improvement.

Programs of adult education of some of the more familiar kinds as determined by the interest of the local population: vocal and professional improvement, foreign language study, science, arts and crafts, special courses and programs conducted for memberships of business and trade associations.

After-hours or "extended school day" programs for the school pupils themselves. (The "lighted school house" program in Chicago and the "community school" program in Flint, Mich., and New Haven, Conn. are illustrative of the development of programs of this type.)

3. *The use of the schools as a major community service agency.* This aspect of the community school program as distinguished from the use of school buildings as centers of neighborhood interests and programs, refers to the conduct of *planned city-wide efforts and programs.* These may be in such fields as health, preventive medicine, mental health, safety, law enforcement, social service and economic development. These programs are in general dictated by the public need. They often require direction and service by the trained personnel in specialized agencies. But the fact that they depend, for their effectiveness, on widespread information and cooperation, requires adequate community organization and facilities.

In relating these three types of programs to the Education Park it seems clear that one can foresee a full twelve months operation of the schools' facilities, and that the school day might well run from 8:00 a.m. to 10:30 p.m. The regular single session staff of teachers and administrators might give way to two or more such staffs, who may in fact overlap in their time on the site and therefore in their need for office space and planning areas.

One can picture the school as an active and exciting place at all times, and in the afternoon and evening programs the Jane Jacobs image of an "interweaving of human patterns" perhaps sets the requirements for some of the architectural needs which will have to be met. The library, gymnasium, swimming pool, theatre, art studios, shops, meeting rooms, music halls, all are in use. People are moving freely about among these areas which are connected perhaps by an immense pedestrian plaza, brightly lighted and safe. They have arrived by pathways from their houses, or by auto, driving in under the plaza and parking underground in spaces used by the day school staff.

The additional space requirements for this community school program are modest. Most of the requirements are met by the regular school facilities. But the library will be larger and serve as the public library of the area. It will also include offices and conference rooms, and perhaps some special meeting rooms with small kitchens available so that small group suppers or repasts can be prepared. And of course some groups (retired or housewives) will want to be able to meet during the regular school day.

Gyms, pools, theatres, music auditorium, art studio, shops and other areas will need substantially increased—and separate—storage areas for what will amount to a two-platoon use of these facilities.

It is here perhaps that the economy of scale enters into the Park complex, providing both variety and quantity to make a community school program effective, unfettered by limitations of space.

The community school emphasis would seem to suggest a design approach that would set physically apart those facilities more frequently and naturally used by the adults and youth during afternoons and evenings. Not only does this permit of zoning of the units for control purposes (and to reduce heating costs), but it creates a campus-like atmosphere which can be useful in the regular day school. The campus provides a kind of "change of pace" condition which many independent schools find very conducive to a release of tensions and an easing of discipline (although this is probably somewhat in the line of a self-fulfilling prophecy).

This approach to community school needs has implications for the organization and physical layout of the regular school facilities and suggests the advisability of considering a separation of some of the specialized areas from the general classroom spaces, particularly on the senior high school level, but possibility also somewhat for the intermediate school.

Up to this point there has been no attempt to specify numbers of spaces, areas required and needed equipment. These quantified data can be specified and will follow after the general conceptual approach is decided upon and some more specific assumptions made as to program needs of the regular day school students.

(Just as a note in passing although not necessarily a part of the community school emphasis, consideration should be given to exploring the use of the Park for civil defense shelter purposes. Federal funds may make it possible to provide some substantial areas which may permit of other than emergency shelter use.)

APPENDIX IV

THE ARTS — FINE AND APPLIED

By CYRIL G. SARGENT

There are a number of issues to be resolved in planning for the Arts. These center around centralization *vs.* decentralization, the relationship between the fine and applied art fields, community use of facilities and, of course, probable future trends in student enrollment among the different fields of activity.

From the point of view of physical planning, the issue of centralization of art facilities *vs.* their decentralization is rather key. It is one on which professional opinion, particularly at the college and community college level, is divided. Those favoring centralization argue that by centralizing art facilities, one gives expression to the essential unity of all art forms and brings into close physical proximity those whose work in each of the special fields should be related. They argue further that centralization makes possible the design and construction of strong physical elements which of themselves can be both an important art form and serve as a representation of the unity which they feel is so essential.

They further point out that where there is to be any extensive use of these facilities by the community for concerts, dramas, the dance and for exhibitions, there is a need to group these areas together for convenience, control and economy of maintenance—particularly of heating. One further point is sometimes made to the effect that centralization makes it possible to achieve an economy through the multiple use of auditoriums, theatres and concert halls.

The position of the "decentralists" takes the form of objecting to centralization as setting apart and isolating activities which should be an integral part of the everyday experience of all

pupils. By separating the art facilities they feel that those who both teach and study or specialize in these fields will be isolated, viewed as "soulful actors and sandaled painters who talk to each other but not to the mere mortals of other departments." Thus, they believe that it is urgent for those majoring in math, science and the vocational fields to be given a casual, undirected contact on a day-to-day basis with art activities.

As to the community use of facilities, they take the position that while one or two performance halls may well be centralized, the day-by-day work of students is irrelevant to the adults of the community and, therefore, need not be in a centralized complex but rather dispersed throughout the school complex.

The economy argument and the low utilization problem they answer by pointing out that in a large campus or school complex the utilization of each of the major components can be sharply increased. Moreover, they remind those favoring centralization for economy that the multiple-use hall has rarely, if ever, been successfully developed and that this represents a totally unsatisfactory compromise with the standards of quality which each of the art forms has a right to demand of the space in which it is to be presented. So there is no easy answer.

Very probably, both positions are valid within limits and in the case of a complex of 10,000 students with a wide age span the solution probably lies in going both ways but with different emphasis at different grade levels. In the earlier grades, the art program is not an entity as such but an element in the total general program of each pupil. Thus, there is no differentiated art space. At the middle school level there can be some specialized space—for both fine and applied arts and at this level it might be very well possible to explore a blending of these two usually separated fields. These spaces would still, in general, meet the criterion of decentralization; and such performance spaces as might be needed could also be decentralized and of multiple use.

At the senior high school level, the arguments for centralization can be pressed both in terms of specialization of pupil interest and program requirements, and in terms of quality of performance spaces. Community use of these facilities would also argue for centralization, for these more elaborate spaces with sophisticated equipment are the ones most suitable for adult community use.

The Specialized Spaces

Because of the size of the Education Park, it becomes feasible to provide several spaces for the performing arts which will be of high quality and which, because they are specially designed, will avoid the dilemma of the usual high school auditorium with its attendant problems of scheduling conflicts, particularly when two different types of performing groups compete for the same space, both during the regular school day program as well as during after-school adult use.

There appears to be a general agreement among experts that multiple-use space for the performing arts represents a compromise for each field. It is not, therefore, a satisfactory solution for any. Acoustics and stage requirements for a musical performance (instrumental) suggest a long, rectangular, box-type structure similar to Boston's Symphony Hall. The theatre requires that the audience be near the stage, that all sight lines be excellent and that the acoustical properties be appropriate for picking up the human voice from a wide range of stage positions.

While the concert hall may, therefore, justifiably accommodate a relatively large audience, the preferred size of a theatre appears to be 500 or less. There are further issues to be resolved in connection with the theatre. Opinion currently seems to be rather sharply divided between the traditional Proscenium arch-type of stage arrangement with its realistic stage setting as against the open stage extending at least half of its depth directly into the audience area and relying on the simplest of stage properties to suggest the setting.

In addition to the theatre and music hall spaces for the performing arts, there are quite different requirements for the visual arts—painting, design and sculpture. These require studio type facilities with either separate spaces for each specialized activity or a large loft-type arrangement which can be broken up into smaller "centers of interest" to accommodate a variety of special activities, and which can be varied as to relative sizes in accordance with student enrollments.

Recommendations

Much of the point of view which seems appropriate for the Park developed during our discussions with Mr. Dober. Briefly, it seemed to be agreed that the issue of centralization *vs.* decentralization could be resolved by going both ways. No special art spaces in the primary school; some few design oriented spaces in the intermediate school, with multiple-use small auditorium facilities; and at the high school level, centralized and specialized areas for each of the major art fields would seem to represent a reasonable progression.

APPENDIX V

INSTRUCTIONAL MATERIALS CENTER

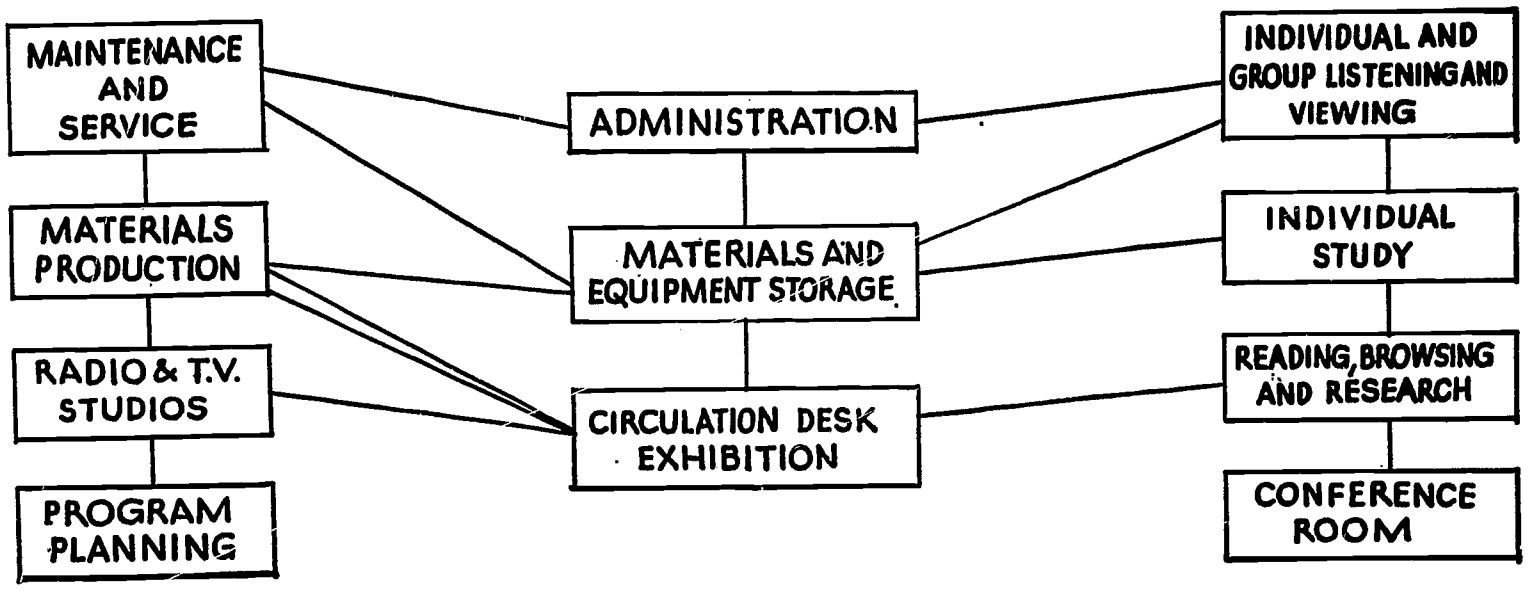
By LOUIS A. ROSASCO

The marriage of book companies and electrical and appliance companies has resulted in an increase of educational hardware. What was once the province of traditional text book publishers now has been invaded by the makers of the new media. This new abundance of materials and supplies for school use has created the need for management and storage. Schools must provide for intelligent selection, purchase, distribution, training in use of media, maintenance and storage. The answer to these problems is more and more the instructional materials center.

The instructional materials center in an educational park should be planned to encourage and facilitate reasonable learning activities related to materials and media. These learning activities may suggest separate but coordinated areas of learning for students and for professional personnel.

An instructional materials center should be examined from several points of view. In terms of the functions of a center first—ordering, cataloging, producing, inventory, storing, maintaining, creating, experimenting, previewing, evaluating, testing, distributing, broadcasting, programming, guiding, teaching, writing; in terms of the materials that describe a center—books, periodicals, pictures, models, mobiles, programmed materials, slides, film, microfilm, tapes, overlays, records, maps, charts, graphs, screens, radios, TV receivers, TV projectors, recorders, teaching machines.

The center should be arranged so as to isolate noise-producing areas from classroom and reading areas. Space for storage should be flexible and adequate for future needs. One plan for space relationships is given on the next page.



If the instructional materials center incorporates the usual library functions, reading and study areas should be provided for group use of library and reference material. Other areas which are more closely a part of the center are briefly described.

Individual study spaces should be equipped with outlets for using listening devices, teaching machines and individual teaching units should have desk area and book storage; in some cases should have individual reading chairs, and should be well-ventilated, with noise resistant floors and walls, and proper lighting.

Individual and group listening stations should be soundproofed, well ventilated; open enough for proper supervision, and should be equipped with outlets, shelves and storage areas for machines, tape recorder, record player and earphones.

Small group conference areas should be well lighted, ventilated and soundproofed; should have space for conference table and chairs; should be fitted with all devices of a listening station, and should be large enough to be subdivided into two smaller areas.

Film preview space should be arranged for small group use—tables for notes, etc., and should be soundproofed and well ventilated.

Microfilm reader space should have microfilm readers and furniture, and should be soundproofed and ventilated.

Circulation areas should be the hub of the instructional materials center; should have space for card catalog, inventory and circulation files for all media, and should have proper space and equipment to store materials prior to transit and after receipt, carts for equipment movement, transparency and slide drawers, picture and poster slots, record cubicles, tape shelves, model shelves, film racks, film strip wall files, storage units for larger equipment like TV, etc.

Materials and equipment storage area should provide for storage (adjustable) for such equipment as projectors, recorders, equipment carts, racks for maps and graphs, space for models, exhibits, globes and all other media.

Materials production area should provide for the reproduction of printed materials and construction of all types of teaching materials; should include facilities for producing for a TV studio; should provide a dark room, dry mounting press, duplication copy equipment, transparency material, small tools, sinks, multilith and mimeograph facilities, and should provide space for film and tape work areas, etc.

Office area should provide space for a general supervisor, material and production specialists, and for general curriculum specialists (K-12).

Maintenance and service area should house facilities for work benches, parts storage, storage for equipment to be repaired, tools, etc.

Faculty professional library should provide space for storage and display of materials, and areas for reading and browsing.

TV areas should have facilities for film broadcast, with a TV studio control room, and TV broadcast teaching studio.

Audio-learning laboratory room should be equipped with a language laboratory and should be flexible so as to provide an opportunity to experiment with plans geared to develop the function of the learning laboratory beyond the usual language classes.

* * *

This paper is designed to provide general directions for an instructional materials center. The educational park concept makes it possible to concentrate all the facilities described in a tower of learning which is accessible to all units. It is understood that each school sub-unit will need to provide some space for storage and utilization of materials.

APPENDIX VI

HEALTH EDUCATION

By LOUIS A. ROSASCO

Certain basic concepts about programs of health education have been developed in recent publications of research on the needs of children in this field.

In the interest of providing criteria for facilities, I repeat material developed while creating a curriculum guide for Health Education.*

In the kindergarten and primary grades (K-3) best results may be attained by giving emphasis to health *practices* during the early years of school life. Health attitudes will develop as by-products. Much of the knowledge that the young child acquires may be incidental to the practices and will not be extensive. Health knowledge at this stage is not the *primary factor*.

In the intermediate grades (4, 5 and 6) particularly with 10-and-11-year-olds, the order of emphasis in terms of readiness is *attitudes*, practices and knowledge. Children at these ages are highly impressionable and attitudes are readily acquired.

It is important that desirable health attitudes be acquired and that children not be denied the opportunity to develop health attitudes. Practices already formed should be further established

* *Curriculum Guide for Health & Safety*, E. Farley, L. Rosasco, J. George.

and reinforced. Knowledge to sustain the attitudes and support the practice will be necessary. Specific areas of study may be organized around the needs and problems of pupils.

In the junior high school (7, 8 and 9) the relative emphasis is upon *attitudes*, knowledge and practices. By this time health practices should be well established. The idealism and altruism of this age lend themselves to the acceptance of recognized ideals of health and the development of additional attitudes toward health.

In the senior high school (10, 11 and 12) the health practices and attitudes which have been formed previously should be reinforced as rapidly as possible by accurate scientific *knowledge*. At this stage, to know not only the what, but also the how and why, is important. Conviction that his health attitudes, ideals and practices are sound scientifically will cement the health education a student has acquired, and assure him of adequate preparation to make the necessary health decisions.

We believe that in the elementary school, the major responsibility for learning in all areas of the curriculum rests with the classroom teacher. But there is a host of resource people to call upon—the health teacher, school nurse-teacher, science supervisor, physical education teacher, school psychologist or guidance counselor, custodian—all of whom may make special contributions to the education program in health and safety. Perhaps every teacher is a teacher of health, but experience has taught us that unless each elementary teacher uses a planned, sequential health instruction guide, this area of the curriculum tends to be neglected, even forgotten. The incidental learning, the "teachable moments," must continue to be utilized, but they are not enough. The areas of study which emphasize the development of health practices, skills and attitudes should be part of the planned regular instruction program within each classroom.

In the junior high school, although some areas of the curriculum may contribute particularly to the knowledge pupils may acquire in health and safety, such offerings are not enough. Every boy and girl should be given the opportunity to explore, experiment, question and, finally, formulate for himself lasting attitudes in health and safety education.

In the junior high school, we believe that a concentrated course in health should be required for *all* pupils. Ideally, this course should be given to boys and girls together, five days a week during one of the three years. It should be taught by a qualified health teacher. Practice indicates that alternate plans may be considered, i.e. two days a week for the first semester and three days a week for the second semester alternating with science or physical education over a period of two years; or a block of ten weeks daily at least twice during the three-year period. It is important to note that we believe a classroom should be provided for health education classes, not the gymnasium or the auditorium.

The chief administrative officer must take the responsibility for planning a sequential program in health education as in all other areas of the curriculum. It also is his responsibility to see that qualified teachers are recruited to ensure the kind of learning which is called for in this type of planning.

In the senior high school, we believe that a separate course in health taught coeducationally meeting five days a week preferably for a full year, but at least for a minimum of one semester, should be required for every boy and girl. This course should be taught by a qualified and fully certified health teacher, and offered preferably during either the eleventh or twelfth year.

Again, in order to ensure that a well-planned, sequential health curriculum is developed, we believe that the chief administrative officer and the high school principal must take the responsibility for planning a program with the health education teachers and the teachers in related areas of the curriculum. Again, as in the junior high school, it also is the responsibility of the chief administrative officer to see that qualified and certified health teachers are recruited to ensure the kind of learning which is called for in such planning. It is essential that the knowledge and information included in the sciences, social studies, home-making and industrial arts supplement the health course, not duplicate it. Results can be assured only when a very real effort is made to coordinate this area of the curriculum.

Acceptance of these principles will mean the assignment of special health teaching rooms at the junior high and high school levels.