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

ED 018 937 EF 000 553

STATE OF NEW YORK STANDARD PLAN TYPE A-1, ONE-STORY 14-21 CLASSROOM ELEMENTARY SCHOOL.

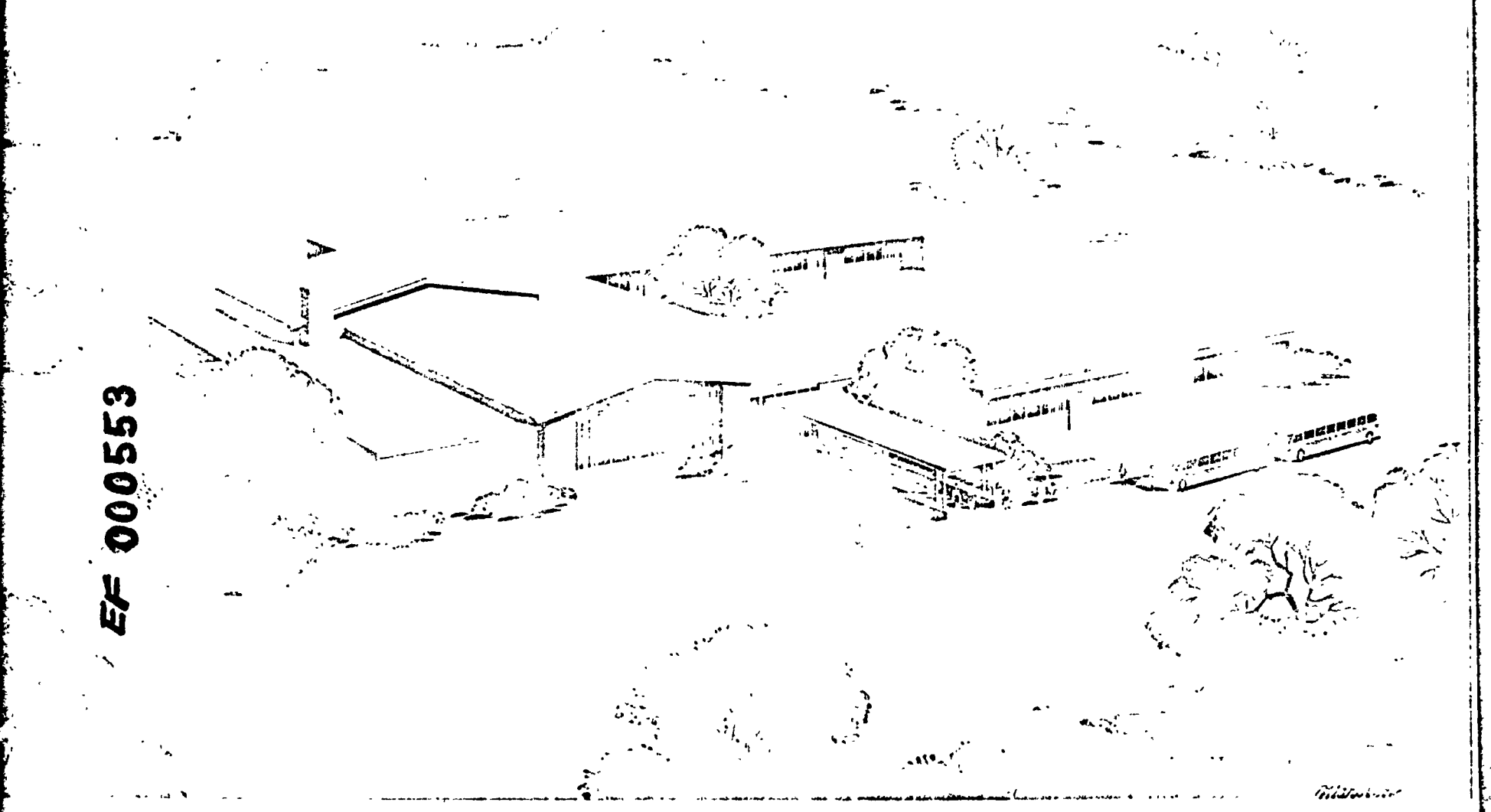
KING AND KING, SYRACUSE, N.Y.

NEW YORK STATE EDUCATION DEPT., ALBANY
EDRS PRICE MF-$0.25 HC-$1.12 26P.

DESCRIPTORS- *ELEMENTARY SCHOOLS, *SCHOOL DESIGN, *SCHOOL LOCATION, SCHOOL CONSTRUCTION, SCHOOL EXPANSION, SCHOOL SPACE,

THE PROGRAM FOR AN ELEMENTARY SCHOOL FACILITY REQUIRED 14 CLASSROOMS WITH THE POTENTIAL FOR ACCOMMODATING AN INCREASE OF SEVEN CLASSROOMS. THE EXPANSION POTENTIAL ALSO INVOLVED ADDITION OF A CONSIDERABLE NUMBER OF NON-TEACHING AREAS. THE DESIGN FEATURED A CENTRAL CORE CONTAINING ADMINISTRATION, PLAYROOM, CAFETERIA, AND KITCHEN FACILITIES WITH TWO ADJACENT CLASSROOM WINGS. ADDITION OF A THIRD WING AND EXPANSION OF THE CORE COMPRISES THE EXPANSION PHASE. THE PLAN--(1) PROVIDES FOR GOOD SEPARATION OF AGE GROUPS, (2) ALLOWS FOR CONFORMITY TO MANY SITE CONDITIONS, (3) PROVIDES FOR EASY FACILITY SUPERVISION, AND (4) PERMITS NEW CONSTRUCTION TO OCCUR WITH MINIMAL ACTIVITY DISRUPTION. EMPHASIZED AS PROJECT CONSIDERATIONS ARE--(1) PROVISION FOR FALLOUT PROTECTION, (2) BUILDING MATERIALS AND CONSTRUCTION, (3) STRUCTURAL SYSTEMS, (4) MECHANICAL SYSTEMS, AND (5) ADAPTIVE BUILDING DATA. A FLOOR PLAN AND PERSPECTIVE ARE INCLUDED. (MH)

STATE OF NEW YORK
STANDARD SCHOOL PLAN
TYPE A-I



EXPANDABLE ELEMENTARY SCHOOL 14 21 CLASSROOMS

STATE OF NEW YORK

STANDARD SCHOOL PLAN

TYPE A-1, ONE-STORY

14-21 CLASSROOM ELEMENTARY SCHOOL

-REPORT-

NELSON A. ROCKEFELLER, GOVERNOR

JAMES E. ALLEN, JR., COMMISSIONER OF EDUCATION

DEPARTMENT OF PUBLIC WORKS

J. BURCH McMORRAN, SUPERINTENDENT
CHARLES S. KAWECKI, ACTING STATE ARCHITECT

KING & KING, ~~ASSOCIATE ARCHITECTS~~

N.Y.S. STANDARD SCHOOL
TYPE A-1
REPORT

EDUCATIONAL FACILITIES AS PROVIDED IN PLAN TYPE A-1

These correspond satisfactorily to the recommendations of the State Education Department and as modified in conference with other educational and architectural advisors.

TEACHING SPACES

No.	Title or Use	Comments
11	Classrooms	
2	Kindergartens	
1	Classroom	Future Kindergarten
1	Library	Future Classroom
1	Playroom	Storage Adjacent
1	Cafeteria-Assembly	Platform Stage

ADMINISTRATIVE, PERSONNEL AND COMMUNITY SPACES

No.	Title or Use	Comments
1	Administration	Suite
1	Health	Suite
1	Special Teachers	
1	Remedial Reading	Future Teachers Room
1	Teachers Room	
1	Kitchen	Related Areas

FOR FUTURE EXTENSION

6	Classrooms
1	Library
1	Special Classroom
1	Remedial Room
1	Conference Room
1	Addition to Playroom Double Size
1	Gymnasium Storage
1	Music Practice

DUAL USE SHELTER AREA

2	Toilet Rooms
1	Generator Room
1	Recreation Space
1	Meeting Room
1	Conference Room
2	School Club Rooms
1	Food Storage Space
1	Community Activities Space

NOTE: The areas of all spaces noted above can be found in the floor plans.

N.Y.S. STANDARD SCHOOL
TYPE A-1
REPORT

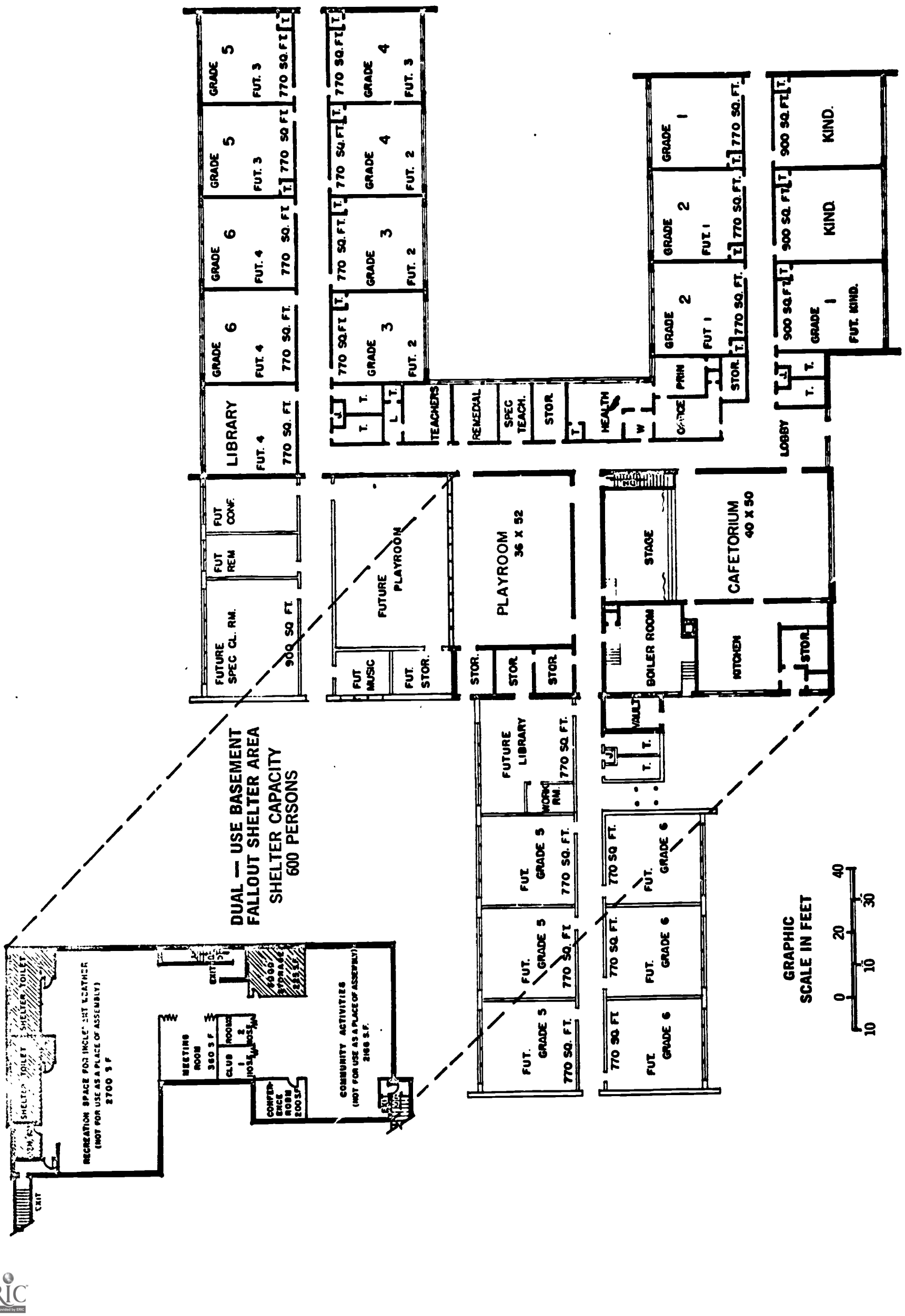
PREFACE

The design of a modern educational facility to suit varying needs is a complex problem involving concepts of educational techniques and philosophies as well as those of architectural aesthetics, structural design and function. The possible solutions are numerous and can take many directions.

The following report is intended to provide the interested school district with a summary of the development history of the project, and to indicate a basis for the major architectural decisions.

Of primary concern in the design was the provision for flexibility in the educational use of the building, ease of expansion and economical, sound construction.

REPORT: N.Y.S. STANDARD SCHOOL TYPE A-1



N.Y.S. STANDARD SCHOOL
TYPE A-1
REPORT

I N D E X

- REPORT -

STANDARD SCHOOL PLAN TYPE A-1

14 EXPANDABLE TO 21 CLASSROOM

ELEMENTARY SCHOOL

1. EDUCATIONAL

A. Program

A review of the program established for the A-1 Standard School Plan will show that the schedule of rooms for the initial 14 room stage provided the minimum space required for a good elementary school of this size. When the school was expanded to 21 rooms considerable alteration and expansion of non-teaching areas was required as well as the addition of classrooms, since the space requirements for play room, administration, health, etc. vary greatly between a 14 room and 21 room school, extreme flexibility was indicated. For example, exceptional childrens room, conference room and male teachers room was not included under the 14 room program, but were included when the school was expanded. Also, the need for a larger library was apparent.

B. Educational Assumptions

The following assumptions were made prior to making plan studies for the project.

(1) Since full day kindergarten was obviously contemplated by the program, three rooms of 1,000 sq. ft. should be provided although one would be used as a first grade during the 14 room stage.

(2) Teaching would be largely on an in-room basis since very little space was provided except a small room for special teachers.

(3) Public use of the playroom, auditorium and kitchen was assumed and provision for easy segregation of these areas should be provided.

(4) The small remedial room will be used as a multi-purpose room for corrective work.

(5) Special Teachers room may be used for some teaching purposes, for very small groups, but mainly for office and files or teaching materials.

(6) The Remedial Room and Special Teachers Room should be located with the Administration for future re-use of the areas as well as some dual purpose use during the first stage.

C. Design Approach

(1) With the above assumptions in mind, it was concluded to design the school with two short wings off of a center core which should contain Administration, Playroom, Cafetorium and Kitchen and making provision for the future classrooms in a third wing to be added to this core. In this way it would be possible to provide the very desirable separation of classes by age groups and at the same time allow for easy administration of the school.

(2) The Library is to be located near the upper grades in the 14 classroom stage with consideration being given to relocating this room nearer the center of the school and increasing the size to suit the larger enrollment.

(3) It was decided to locate the Kindergarten and lower grades near the entrance side of the building and near the Administration for ease of supervision of the younger children during bus loading and unloading operations. It was also desirable to locate these lower grades close to the Cafeteria and Kitchen in the event that feeding of the younger children was to be done in the rooms. If not, close proximity to the cafeteria would be advantageous.

(4) It has been the purpose of this project to develop a standard school plan economically useful to a wide variety of school districts. Therefore, the design is based on provision for low initial cost compatible with sound construction.

2. REVIEW FOR PLANNING

A. General

During the planning stage of this project numerous schemes were studied. After consideration of a number of these sketch plans, three were selected for final review. These studies were made with the educational assumptions made earlier in this report in mind and certain structural limitations inherent in the concept of a Standard School Plan, for example: -

1. The assumption must be made that the site would be level, however, the plan should be flexible enough to allow some variation in topography.

2. Since climate and snow conditions vary considerably in different parts of the state, the plan must meet the most severe conditions.

3. Economy of space and overall cost must be kept constantly in mind.

B. Preliminary Plans

In the preliminary stage the advisability of designing the building with windowless classrooms, open wing or corridorless rooms was abandoned for the reason that the plan must meet the standard teaching methods in common use in most school districts and at the same time be flexible enough to permit more sophisticated educational philosophies to suit the needs of the individual school district. The plans selected for review can be described briefly as follows.

1. Rectangular Court Plan

This plan placed the classrooms around a central court with the common facilities such as playroom, cafetorium, administration, etc. located in a separate wing. While this plan was very compact under the 14 room program, when the additional classrooms were added the common facilities became somewhat remote. Also, it was felt that the interior court might be objectionable in areas of heavy snowfall without elaborate means for snow removal. It would also be difficult to adapt this plan to an uneven site.

2. Parallel Wings

A plan was developed using two parallel wings joined by a connecting passage. One wing contained grades 2 through 6, library, etc. with the provision that the future classrooms would be added to this wing. The parallel wing contained on one side of the connecting passage, the playroom,

cafetorium, and administration, on the opposite side were placed the 1st grade and kindergarten. This plan functioned quite well except that the upper grades were too far removed from the common use areas, also the kitchen service was not well located since it cut across circulation from playroom to playfields.

3. Straight Wings-Center Core

Another plan considered featured a center core with playroom cafetorium, kitchen and boiler room. Off one side of this core extended a wing containing administration, health and 1st grade and kindergarten. The opposite wing contained grades 1 through 6 and library. While this plan provided most of the features desired, it became somewhat extended and might present problems in site adaptation.

3. DEVELOPMENT OF PLAN

From a study of the sketch plans described above, an attempt was made to develop a new plan which would incorporate as many of the desirable features of each scheme as possible. These features can be summarized as follows:

A. Compactness - a desirable feature because of possible site restrictions.

B. Adaptability to some extent to a sloping site.

C. Common facilities located in a central core.

D. Separation of grade levels K-1, 2nd through 4th, 5th and 6th.

E. Kitchen service should be located so as not to cross any important circulation to or from the building.

F. Upper grades should be located not too far from the playroom; this should be true in the first stage as well as when classrooms are added.

G. Kindergarten and first grade should be located within easy access to kitchen in the event inroom feeding of these lower grades was desired.

4. RECOMMENDED DESIGN

A. Description of Plan

The plan which is recommended after a thorough study of the problem is a U shaped plan in the 14 classroom stage with two parallel wings off a central core which contains playroom, cafetorium, administration. The two wings vary somewhat in length, the shorter element contains kindergarten, first and second grades under the 14 classroom plan, the longer wing, grades 3 through 6. When the school is expanded to 21 classrooms, another wing is to be added on the opposite side of the center core and will house grades 5 and 6 and relocated library. At the time of the expansion the other rooms in the building will be reassigned. The salient features of the design can be summarized as follows:

1. Provides good separation of classes by age groups.

2. Will allow for adjustments in the plan to meet grade conditions without major alterations. For example, grade differentials could be taken up in connecting corridors between wings by the use of steps or ramps.

3. The Administration, Health, Teachers Rooms, etc. are located near the center of the plan and relatively close to all teaching areas, offering ease of supervision.

4. Additional classrooms can be added with no interruption to the operation of the school program.

5. Expansion of the playroom can be accomplished without disturbing the use of any part of the building except the playroom, during removal of the temporary side wall.

6. Location of kitchen service and boiler room allows for easy access under any site conditions or location of principal streets.

7. Appearance of the building is pleasing either with or without the possible future addition and the plan functions well under both conditions.

B. General Discussion

It was the purpose of the Consulting Architect to develop a simple, uncomplicated plan that would meet average conditions of site and needs of a typical school district. We believe that the plan selected fulfills these aims. Several points with respect to the building should be pointed out:

1. The use of built-in cabinet work was kept to a minimum for reasons of economy. If the need for additional storage is felt necessary, there are several manufacturers of portable or special purpose cabinets which will meet the requirements at a lower cost than custom-built millwork.

2. It should be noted that it is possible to separate Cafetorium and Playroom from the rest of the school by the installation of folding gates across the corridors, at the same time providing access to the public toilets and exits. This may be provided if public or after hour use of the school is contemplated.

3. Access to the stage is provided from the corridor between the Playroom and Cafetorium which will allow groups of children to reach the stage without passing through the auditorium. This feature will be appreciated when staging small plays or other productions where an audience is present.

4. The arrangement of storage areas is not arbitrary and exact partition locations may be changed without affecting the plan, or other uses made of the space. Partition between storage and special teachers rooms may be omitted, thereby providing a larger room for special uses. Also, the exact location of partitions in the storage areas at the end of the Playroom may be varied.

5. As stated previously, the additional classroom wing can be added to the building with no inconvenience to the school operations. As for changes in partitions in the administration wing, the future expansion of these areas has been anticipated as far as possible by the provision of openings and placement of partitions. If further alterations are required, they can be easily made due to the light demountable nature of the partition constructure. Likewise, any future revision to classroom layout can be as easily accomplished.

C. Physically Handicapped

The building being one-story in height is well suited for physically handicapped children. Further provisions have been made for these children by the installation of one wheelchair toilet stall and one low lavatory in the toilet rooms for both boys and girls. Also, a conveniently located grab bar is installed in each toilet stall to assist these children. A drinking fountain is provided in the corridor, placed 30" above the floor for the use of the handicapped. Entrance and classroom doors are sufficiently wide to permit operation of a wheelchair.

D. Modular Planning

Modular planning is required by the program for reasons of economy and standardization. This method of planning is basically the use of a module of 4" or a multiple thereof for laying out the building. This module is also used in the development of all details and interior dimensions. The advantages of modular drafting are not only the fact that this standardized method assists the draftsman in the development of the plan, but also will be helpful to the contractor and material suppliers in the execution of the work in the field, thereby promoting efficiency and economy.

E. Provisions for Fallout Protection

(1) The dual use fallout shelter included in this school was developed by the D.P.W. in cooperation with the Education Department and can be utilized in a variety of ways to augment the school program and the affairs of the community. Suggested functions which the shelter space might serve are: Meetings of scout groups on all age levels, meetings of other community organizations and school purposes such as student government quarters, publications rooms, recreation, areas for a variety of remedial purposes, administrative offices, large group instruction and audio-visual activities.

(2) The plans for the shelter are architecturally and mechanically complete with the exception of the structural design for the sub-grade work. This work is to be completed by the adapting architect to meet whatever the existing soil conditions might be.

(3) The size of shelter space, the capacity of the mechanical systems, and the provisions for food and water storage are based upon the expanded capacity of the school with a proper allowance for teachers and staff. Any special conditions which will affect the capacity of the school will require changes in these factors of the fallout shelter design.

(4) The location of the shelter under the building was made to obtain the best protection at the lowest possible cost. A change in the location of the shelter will necessitate additional shielding design. Shielding has been obtained by both separating with distance and with mass, the planes on which radioactive particles will rest in relation to the shelter area. It is to be noted that any dimensional or material changes in the area above the fallout shelter may affect the shelter design. For this reason, the minimum mass of the interior partitions, floor construction and total overhead construction upon which the shelter calculations have

been based are indicated on the drawings. If materials of lesser mass than the tabulated values are used, redesign of shelter will be required. It also has been assumed in the calculations that finish grade is never below the bottom of the first floor slab around the shelter area. It is, therefore, necessary to maintain this grade in order to avoid redesign of the shelter.

5. The shelter plan indicates emergency water supply in a group of tanks within adjacent crawl space. Wherever an adequate supply of well water can be obtained, it is suggested that the adapting architect substitute it as the fallout shelter water supply. The plans show self-contained toilet facilities in the form of sanitary tanks fitted with toilet seats. Wherever a septic tank and leaching field are available and the supply from the well is adequate, it is suggested the adapting architect substitute a system using periodic flushing of waste. Generator capacity should be checked,however, to be sure that an adequate power supply is made available during the emergency period for these possible substitutions.

6. The shelter area is designed for a minimum protection factor of 100 by use of "Design and Review of Structures for Protection from Fallout Gamma Radiation," an official Office of Civil Defense, Department of Defense publication. In this respect, it meets requirements of the New York State Civil Defense Commission. Any changes to the shelter as specified and shown on the drawings should be discussed with and approved by the New York State Civil Defense Commission.

5. CONSTRUCTION AND BUILDING MATERIAL

A. General Discussion

1. Materials and methods of construction must be of a type commonly used throughout the State and not requiring special processes or equipment.

2. It was felt that the structural design should be based on two different snow loading conditions for reasons of economy. Therefore, it was decided to tabulate the structural sizes for 40 lb. and 60 lb. dead loads.

3. Consideration was given to both reinforced concrete and structural steel. Cost analysis of both systems indicated that for a light one-story building structural steel would prove to be more economical for columns and roof framing. This was due to a large extent to the limited re-use of forms.

4. The use of a structural frame eliminated the use of bearing walls or partitions, thus providing more rapid construction and complete flexibility of interior arrangement either initially or in the future.

5. All materials are durable and relatively easy to maintain.

6. Since most materials are fire resistive, an excellent fire insurance rate can be obtained, the exact rate must be obtained locally. With the numerous exits, properly located together with the fact that the building is fire resistive and one-story, the maximum safety factor is provided.

7. Exterior Wall - Walls are constructed with exterior face brick which is bonded by means of brick headers to 4" thick concrete block backing. Interior surfaces of exterior walls are generally furred with metal furring and lath and plaster. Insulation is installed between the metal furring members. This type of construction offers the following advantages.

a. Allows for the building to be "closed-in" as soon as possible thereby allowing the builder to continue work inside during inclement weather.

b. The insulation and dead air space reduces heat loss through the walls to a minimum and prevents moisture penetration through the wall.

c. Type of Windows - Exterior windows are a good grade of steel windows with putty glazing for economy. Detailing of windows is arranged so that aluminum windows could be specified with a minimum of changes.

8. Finished Floors

a. Corridor floors are vinyl asbestos tile.

b. Classroom floors are asphalt tile.

9. Ceilings

Generally the underside of precast roof deck is exposed, providing the finished ceiling in classrooms, playroom, cafetorium, etc. The corridors and certain other rooms have suspended ceilings with fireproof mineral acoustic tile. The precast roof plank selected is composed of wood fiber with a Portland cement binder; this material provides good acoustical properties and is an economical method of construction. Other types of material may be used, providing there is not an increase in dead weight. Lighting fixtures are placed, insofar as possible, on the bottom of steel beams in order to minimize the amount of conduit exposed on the ceiling. Where it is necessary to expose conduit, it has been run in an orderly manner so as not to be objectionable.

10. Interior Partitions - Generally interior partitions are of the so-called "dry wall" type, constructed with nailable steel studs and gypsum board surface both sides. These provide an economical partition, with good sound transmission reduction properties and at the same time light in weight and rapidly constructed and easily movable.

11. Divider Walls - The dividing walls between classrooms and corridors is formed by the wardrobe and built-in classroom cabinet work. This cabinet work is covered on the the corridor side with a durable vinyl fabric. This feature also provides flexibility in plan and is a measure of economy.

12. Exterior Playroom Wall - It should be noted that the exterior wall of the playroom is provided with a "panel wall" type of construction which will allow future expansion of this room by simply unbolting this assembly and relocating in its new location.

13. Future Additions

(a) Other provisions that have been made for the future addition include arrangements in the structural steel and in the top of foundation wall for easy expansion; these features are covered in more detail under the structural section of this report.

(b) Boilers selected have sufficient capacity to serve the seven additional classrooms plus the other enlargements of the building.

(c) Capacity at main electrical distribution panel has been sized to handle the additions.

(d) No provisions have been made in the plumbing layout to accommodate the future addition, since sanitary drainage has been taken from the building at various points, a new line would be run from the new addition at the toilet room location.

6. STRUCTURAL

A. Floor Construction

Concrete floor slabs - The welded wire mesh reinforcement of the two-way flat slabs was adopted by this office after careful investigation and evaluation.

1. After consulting with various steel companies, we decided not to specify mesh "styles". By specifying areas required only for a given slab strip, competition is assured. (One company prefers to maintain wire size and vary spacing. Another prefers to maintain spacing, but vary wire size.)

2. Studies indicate a cost saving for reinforcing the slabs with mesh as opposed to deformed reinforcing bars (in place). Should the adapting architect feel that reinforcing bars would be better for construction in his locale, transition to reinforcing bars is accomplished simply by multiplying the mesh area given by 1.20.

B. Piers

Indicated minimum pier sizes as required on the drawings are a result of shear investigation at the pier caps. Since piers below first floor are to be designed by the adapting architect, some unknowns are to be encountered, such as the height of the crawl space and, therefore, the height of the piers. (Fallout shelter areas)

C. Roof Framing

The roof framing system has been refined over a period of years to the type shown. Aside from its structural aspects, it relates carefully to the architectural interior design. One of the more important economies of the system is its speed and ease of erection.

D. Live Loads

1. Size of roof beams required for 40# and 60# live loads are tabulated on the structural plans.

2. Column loads are tabulated on the structural plans for both 40# and 60# live loads.

E. Future Addition

The adapting architect is to take note of the details which are designed for the future addition to the school. It is the intent of the drawings to facilitate the easy removal of existing facia in those areas to be added to by

designing bolted connections not only for removal of temporary facia, eaves, etc. but to use the same holes for future structural steel. The channel is used from column D-9 to column F-9 expressly to allow the placement of the new rigid bent between column lines E & F without interference of existing steel. Again, the bolted connections to this channel allow for the easy removal of eave material and the connection of future steel. The footing walls are designed with the same approach in mind. The new structural slab or slab on grade will allow for bearing the new slab on the existing foundation wall, after removal of the wall above. All footings and foundations in the affected areas should be designed for projected future additional loads. The anchor bolts and bearing surfaces for the future rigid bent in the gymnasium area should be installed at this time and projected for future use.

7. MECHANICAL INSTALLATION

A. Plumbing

1. The plumbing system for this building consists of hot and cold water supply systems to the various plumbing fixtures shown on the plans, sanitary drainage from these fixtures exiting from the building foundations at various points, and storm water lines carrying drainage from the roof exiting from the building at various points.

2. The building lines and equipment are sized to permit a low pressure of 36 psi entering the building (30 psi if no meter is used), with a demand of 118 gpm for the present building, and 150 gpm when future addition is included. Total daily water usage is estimated at 3,400 gpd for present building, and 5,200 gallons per day when future addition is included. When plot plan is available, pipe line from main to building shall be sized to provide this flow and pressure, or if water line is not available, well and pump should have this capacity.

3. Sanitary sewage lines are sized for 1/8" per foot grade. For economy in areas where clay, bituminus or asbestos pipe is permissible, the cast iron interior pipe is run out of building in a number of places. These should be tied together on the plot plan to a single line entering the street sewer, if there is one. If there is no sewer line and a sewage disposal system must be provided, each project constructed from these plans must be individually designed and presented to the local State Health Department Sanitary Engineer for approval.

4. Storm water lines are sized to carry rain water from the roof at a maximum hourly rate of 4". If a storm water sewer is available, the amount of flow can be calculated at 5,300 gph based on the 4" hourly rainfall. If no storm water sewers are available and connecting storm water to the sanitary sewer is not permitted, these storm water lines should be run to a natural stream, if available on or adjacent to the school site, or to dry wells. Storm water laterals within the building have been sized for a 1/4" per foot grade.

5. Toilet fixtures in this building have been specified siphon jet for economy of water, thorough cleaning action and quietness of fixture.

B. Description of the Heating System

1. The heating and ventilating system for type A-1 N.Y.S. Standard School has been designed as a forced hot water unit ventilator system.

2. Two scotch marine type steel boilers are used for heat generation. These were chosen for their low head room requirements, their overall high efficiency and their low first cost.

3. Low pressure atomizing oil burners were specified for combustion. Since this design must be satisfactory for any location in New York State, the design must provide for an absence of piped gas in the vicinity. The low pressure atomizing burner combines low maintenance requirements of the horizontal rotary burner with a greater flexibility for varying outputs with high efficiency, and the ability to burn up #5 oil without gas ignition. If this school is built where gas is available and the district wants to use gas, burners having an input of 4,000,000 btu should be specified.

4. Two circulating pumps are provided to distribute the hot water to the heating units throughout the building. With the contemplated addition in place, one of these two pumps working alone will be able to maintain the building above 40° at minus 20°. They are intended for continuous duty during the heating season.

5. The water circulated to the heating units is modulated in temperature according to the outdoor temperature, in order to provide better temperature control and eliminate over-ride in mild temperature. Since boiler water is used to heat domestic hot water, this is accomplished with a three-way mixing valve rather than varying the boiler water temperature.

6. This building is being designed for construction with first floor slab on grade. Therefore, the hot water piping is placed over the corridor ceiling and along the outside classroom wall in order to be accessible for any future maintenance. Copper pipe and solder fittings have been specified because copper has superior corrosion properties to steel pipe, with little or no sacrifice in price for the sizes required.

7. All heating units are tabulated on the plans for the four temperature zones encountered in New York State (-20°, -10°, -5°, and 0°). Supervising architect should designate in his instructions to bidders which temperature zone is to be used.

8. Classroom unit ventilators are of face and bypass type, with hot water constantly flowing through the coil to minimize freeze-up dangers. 1250 CFM machines have been used in all classrooms, with the dampers set to provide the amount of outside air required by the State Education Department of Buildings and Grounds when the room temperature is within the normal thermostat setting range. However, when the room

remains much hotter than the thermostat setting after the coil face and bypass damper is fully closed, the outdoor air damper will open to provide the full 1250 cfm outdoor air for cooling. This provides extra cooling capacity for the classroom at very little extra cost over a smaller CFM machine.

9. Playroom ventilation is provided with a fan and coil unit drawing 100% outdoor air. A separate pump circulates hot water through this coil whenever the fan is running and the outdoor damper is open. A three-way mixing valve controlled by the playroom thermostat controls the temperature of the water in the coil in accordance with the needs of the playroom.

10. Temperature control in this building is pneumatic to provide a simple, rugged, maintenance-free modulating control.

C. Description of Electrical System

1. The electrical system for Type A-1, N.Y.S. Standard School has been designed for three phase, 4 wire, 120/208 volt, 60 cycle power. The total connected lighting load is 210 kva, the total connected motor load is 25 kva, with the largest motor being 3 HP, 3 phase, and the total heating element (ranges, etc.) load is 126 kva.

2. This Standard School has a transformer vault as part of the building. This design calls for installation of transformers and high voltage gear by the Utility, but since there is a wide variation between the various utilities serving the State, and even considerable variation among different offices of the same utility, the Supervising Architect should check the utility office having jurisdiction over the building site, and issue an addenda to conform with their specific requirements.

3. When a plot plan has been prepared, the pole from which the utility wishes to provide service should be determined, and any requirements of the utility for conduit material, installation details, pull box locations and construction and type and size of high voltage conductors. Determination should also be made as to which items are to be furnished and installed by the contractor, which items are to be furnished by the contractor and installed by the utility, which items are to be furnished by the utility and installed by the contractor, and which items furnished and/or installed by the utility are to be paid for by the owner (or made part of electric contract). A clear delineation of these items on the plot plan or instructions to bidders by the supervising architect will reduce the chance of the contractor's bid including the cost of his doing work which is already being performed by the utility.

4. While plot plan is being prepared, it will be most efficient if the school authorities can determine their outside phone needs and discuss these needs with a telephone company representative and their supervising architect to determine what size and material underground conduit will be necessary, what box and electrical facilities should be available where the service enters the building, and the size and location of conduit runs from this location to the various phone locations within the building.

5. Lighting within this building generally is fluorescent, as this can handle the generally higher level of lighting in today's classrooms with less power consumption and lower luminary brightness. Average classroom illumination will be 55 initial footcandles and 40 maintained footcandles.

6. All motor operated heating and ventilating equipment is controlled by a time switch which will automatically turn equipment on at a pre-set time in the morning, and turn equipment off at a pre-set time in the evening. Various blocks of rooms may be either turned on or off independent of the time switch to take care of special events.

7. The clock system (Article 312 of the specifications) includes common talk-selective ring telephones. If these are not desired, the instructions to bidders should clearly state that they are to be deleted.

D. Kitchen Equipment

1. Kitchen equipment is included as part of the contract and is designed as an all electric kitchen, since gas may not be available in all locations.

2. All equipment is of stainless steel for durability and ease of cleaning. The serving line is designed for movable food service equipment, in order to facilitate in-room feeding or the use of the equipment with a central kitchen system of food service. These mobile items are not included in the kitchen equipment contract, but all utility connections are provided under the mechanical contracts. The movable items were not included for the reason that the school district may desire a fixed in-line serving counter rather than the mobile system.

3. Provision is made in the kitchen plan for storage and employees toilet and lockers. These facilities are located directly off of the kitchen service vestibule.

4. No utility carts or work tables are included under this contract but may be purchased under separate contracts.

5. The kitchen has been designed with sufficient capacity to serve the 21 classroom program, therefore, no additional space requirements are anticipated.

8. APPLICATION

A. Adapting Architect

In the use of these Standard School Plans it will be necessary to employ the services of an architect to adapt the plans to local conditions, also to complete the portions of the working drawing which it was impossible to complete without a definite site location. The services of the adapting architect include the specific duties listed below:

1. Assistance in site selection.
2. Investigation of sub-surface soil conditions.
3. Percolation test (if sanitary sewer is not available).
4. Design of foundations.
5. Connection of utilities and design of sewage disposal system, if required.
6. Site improvement work - roads, walks, grading, planting, etc.
7. Changes and amendment due to local building code requirements.
8. Addendum to Standard Specifications (See Suggestions to Adapting Architect).
9. Assist in receiving bids from contractors.
10. Supply technical data necessary for the school board lawyer to prepare contracts.
11. Supervise construction of the work.
12. Certify payments to contractors and keep all records required in connection with the execution of work.

B. Miscellaneous

1. It should be noted that the upper portion of the window wall in the playroom is intended to be re-used when the room is extended. This window will be above the lower classroom wing and provide light to the enlarged area.

2. Provision may be made to install either shades or drapes in the cafetorium by providing blocking or other means

of attachment to suit the type of equipment desired. It is intended that stage drapes will be installed by the use of a suspended track across the opening for a sliding curtain and a valance to fill the opening above.

3. Facilities have been provided for handicapped children within the building. The adapting architect should note that it will be necessary under the site improvement work to bring the finished sidewalk flush with the entrance platform to allow a wheelchair access to the building. This probably should be done at the main entrance unless conditions dictate otherwise.

4. Modification of the Section on Excavation may be necessary in the light of site conditions encountered, such as rock, ground, water, etc.

5. It may be desirable to obtain alternate bids on certain materials as those suggested or listed below, but others may be desirable.

a. Alternate window manufacturers.
b. There are several manufacturers of roof deck similar to that specified and a saving in cost might be reflected by taking alternate bids.
c. Alternate bids for face brick might be considered if a more or less expensive brick was desired.
d. Substitution of terrazzo in corridors may be made in place of vinyl asbestos. This change would require a revision to the concrete floor slab in the area where terrazzo is used.
e. Alternate bids should be taken on unit heaters, boilers.

* * * *