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ABSTRACT

In recent times, adequate space for education has become critical and fewer dollars are available for new school construction. Recently built facilities are sometimes overcrowded and often lack the flexibility to respond to new concepts of educational programing. As a result, planners are turning to other means for solving critical space needs without compromising educational, protection, safety, and health standards. This publication was developed to provide a guide for educators and planners who are seeking to put to use one innovation in educational facilities -- "found" space. The planner cannot easily mold existing space to fit his needs; rather, he must work within the parameters of space originally designed to meet entirely different requirements. To assist the planner, this publication examines the planning principles he can use to achieve this objective and, through a series of questions, assists him in an evaluation of potential space for conversion. Outstanding examples of successful conversions are described. (Photographs may reproduce poorly.) (Author/MLF)

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Defense Civil Preparedness Agency,
Department of Defense

TR-78 May, 1973

United States Office of Education,
Department of Health, Education and Welfare

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Columbus, Ohio
May, 1973

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PREFACE

Under traditional planning patterns, a school system or institution requiring facilities will attempt to construct school buildings designed to respond to its educational requirements, including programming, physical characteristics, and future needs. After determining requirements, it seeks to build a structure suited to all these demands, placing emphasis on the design of an educational environment provocative to the teaching/learning situation that also protects all its occupants.

Such ideal circumstances, however, are not always possible. In recent times, adequate space for education has become critical—fewer dollars are available for new-school construction. Recently built facilities are sometimes overcrowded and often lack the flexibility to respond to new concepts of educational programming. Bond issues find difficulty in winning the approval of taxpayers. Districts can also be faced with shifting, changing populations that make future projections uncertain. Consequently, they are trying to remain loose and flexible to prevent overbuilding. As a result, planners are turning to other means for solving critical space needs without compromising educational, protection, safety, and health standards.

This publication was developed to provide a guide for educators and planners who are seeking to put to use one of the innovations in educational facilities: "found" space. Recycling noneducational space for schools is not a new concept; neither is it an easy one to take advantage of. The planner cannot easily mold existing space to fit his needs; rather, he must work within parameters of space originally designed to meet entirely different requirements. The objective remains the same: an environment for learning that is protected from hazards and is safe and healthful. To assist the planner, this publication examines the planning principles he can use to achieve this objective and, through a series of questions, assists him in evaluation of potential space for conversion. Outstanding examples of successful conversions are also shown.

We hope that, by providing a guide of this nature, we can help planners to recognize potential obstacles and to explore ideas that will produce otherwise unrealized assets.

WHAT IS "FOUND" SPACE?

Construction of new spaces for learning takes a great deal of money. In the past few years, dollars for new school buildings have not been readily available. The need for more teaching space, however, has increased.

Future needs are somewhat unpredictable. Population centers in urban and suburban areas are shifting. This places an additional challenge on the educational leadership of the community to continue to meet students' and citizens' needs without the burden of building expensive schools that might be underused within a few years.

One of the major untapped resources available to the community seeking educational space lies within the walls of many existing buildings that have uses other than as schools. Many times, it simply requires seeing educationally useful space where none apparently exists.

In the natural cycle of change within a community, many structures no longer useful for public, commercial, industrial, or other functions frequently can provide much-needed spaces for education if given a new life through remodeling and conversion. The spaces exist, and we have only to find or identify them.

Warehouses, stores, churches, factories, offices, and other similar buildings or spaces can have new careers as educational facilities. More and more communities are looking into the possibilities of putting them back to work as schools.

The use of "found" space within a district or community is often necessary because no suitable older or obsolete educational facilities exist that can be modernized. Sometimes, the program requirements for the additional space are too different for application to an older, more traditional school structure, or perhaps the financial limitations are too severe to consider constructing a new building.

For whatever reason, such potential spaces for educational use do exist in noneducational structures, and the possibility of recycling is very real. In New York City, for example, a synagogue and grocery store were converted into a preschool; in Denver, Colorado, an abandoned brewery was turned into a student center and will become part of a new college campus; in Baltimore, Maryland, an unused railway station became an a[illegible] school; in Oak Harbor, Washington, an old Navy barracks became a K-6 elementary school; in Boise, Idaho, a single-use fallout shelter was c[illegible]ted into a Teaching and Instructional-Materials Center; [illegible]d in Boston, Massachusetts, a bathhouse bec[illegible] a high school.

With care, planning, and imagination, such spaces can meet the challenge of finding new space for education.

Generally, almost all "found" space, if it is to be useful educationally, must eventually be changed to satisfy requirements similar to those for any space originally designed for education. For clarification, we should define "modernization" and "conversion", two terms closely associated with the rehabilitation of both obsolete school buildings and noneducation buildings or spaces.

MODERNIZATION is generally accepted today to mean the renovating, remodeling, and rehabilitating of an existing but educationally obsolete school facility and making it into a safe, well-equipped space better suited both environmentally and educationally to contemporary teaching/learning concepts.

CONVERSION, as used in this publication, will mean the complete change and adaptation of noneducational buildings or spaces into educational facilities. Such spaces also will require renovating, remodeling, and rehabilitating in various degrees, but they may also require the addition of many features not needed by the original function for which they were designed.

Some other terms, used frequently in this book, are:

PROTECTION: Shelter from environmental hazards, externally induced, such as tornado, hurricane, flood, fallout, noise, civil disturbance, etc.

SAFETY: Mitigation against accidents accomplished with properly designed stairs, safety treads and nosings, elevator restraints, hand rails, nonslip surfaces, sprinkler systems, standpipes, hoses, enclosed stairs, fire breaks, fire doors, noncombustible materials, fire alarms.

HEALTH: Easily cleaned, nonporous surfaces; ventilation; elimination of noxious gas emitters; dirtfree; proper illumination; etc.

Adapting "found" space to educational use is not always easy. As it stands, the structure may not satisfy even the basic criteria for an educational facility. An abandoned factory building may not be able to meet today's code requirements for occupancy as a factory let alone the standards for a school of 500 preteen children.* Perhaps the contemplated space is poorly located for the population it will serve or so designed that the proposed educational program cannot be accomplished. This consideration is extremely important and cannot be overemphasized.

The protection, safety, and health of the students and staff of the converted school are also paramount considerations for planners. Many hazards may exist that cannot be easily eliminated through modification. When all the changes necessary to make the space useful have been uncovered, their cost may even make the conversion prohibitively expensive.

Planners, thinking of putting "found" space to use, should also be cognizant of the psychological implications of the school within the community. As past experience has proven, in times of emergency, people tend to expect school facilities to offer havens or shelters. It becomes the responsibility of the educational leadership to equip the school to be prepared to serve in that capacity. Such phenomena as floods, earthquakes, tornadoes, civil disturbances, fallout radiation, and even severe weather, create conditions which the local citizens are usually unequipped to handle without assistance.

How does this relate to noneducational space under consideration for conversion? In the eyes of the local citizen, the converted space is no longer the unused warehouse, factory, church, or supermarket it once was. It is now a school and, in becoming a school, it tends to assume all the psychological (if not practical) characteristics of any other school. Therefore, planners considering conversion of noneducational spaces need to give serious thought to the protection capabilities they offer. Better still, during conversion, what protective capabilities could be added to the space? Not only is this a responsible demand for protection during normal occupancy as a school but for its added function as a shelter and relief center.

As the many examples in this publication illustrate, the nature of available "found" space and the desired use to which it may be put vary greatly. Only the educational facility planner, the architect, and the school board know what needs to be accomplished, what they have to work with, and the extent of the resources needed.

In the sections of this publication that follow, we will present factors to help you determine if the "found" space can feasibly become an educational facility. Generally, the individuals responsible for planning and decision making will need to follow a sequence of fact-finding steps. We will discuss those factors that will help determine objectives, determine the functional characteristics needed, discover what there is to work with, and determine what needs to be done.

So much depends on the individual situation; we have attempted to provide a "checklist" of questions to evaluate it. Some will not apply; some may be answered simply; others will require extensive investigation or a value judgment. For the most part, the majority of questions will help to plan what is required to make "found" space work as an educational facility, discover if the deficiencies are correctible, and determine whether or not the project is financially feasible.

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*To cite one example, compare the following height and area restrictions between occupancy of an industrial plant with Type IV non-combustible construction vs. the occupancy of a school with the same Type IV construction.

	Allowable Height (stories)	Allowable Floor Area(area per floor in square feet)		
		one story	two stories	over two stories
Industrial	Four	21,000	15,000	10,000
School	Two	12,000 [1]	12,000	Not permitted

1 To increase the allowable area (one story only), it may be doubled if building is surrounded on all sides by permanent open space of at least 60 feet and no less than two exits are provided from each classroom, one of which must open directly to exterior of building.

e information was extracted from the Model Code of the Building Code Congress.

WHAT DO YOU WANT THE SPACE TO ACCOMPLISH?

As pointed out in the first section, space already exists: all you have to do is find it. But simply having space (or potential space) is not necessarily the whole solution to the problem. A fundamental question that all planners should answer before devoting a lot of time, expense, and energy to inspections, evaluations, and analyses is: "What do we intend to accomplish with this space that we are unable to accomplish in either the educational facilities we have or could obtain?"

This question is related to the fundamental requirements of the district or institution. If the education officials have discovered that a critical shortage of educational space exists, a special program requires separate or different space, and they have been unsuccessful in developing other alternatives to its resolution, then looking for the answer in the conversion of some type of noneducational space within the district or area might be a viable alternative.

Remember some of the examples we cited in the first section? There are many kinds of "found" spaces that have been used for educational purposes:

FACILITIES FOR EARLY CHILDHOOD EDUCATION FROM . . . a supermarket, an apartment building, a souvenir shop, a refrigerator warehouse;

FACILITIES FOR ELEMENTARY SCHOOLS FROM . . . farms, a catering house, old residences, barns, a mattress factory, a sardine factory;

FACILITIES FOR SECONDARY SCHOOLS FROM . . . a warehouse, a lamp factory, lofts, a display room, a girdle factory, an office building, a supermarket, a candy factory, a hotel;

FACILITIES FOR SPECIAL-EDUCATION SCHOOLS FROM . . . railroad depots, a warehouse, a YWCA basement, a bakery, a refrigerator assembly plant, a milking-machine factory, a post office, a ranch.

From an educational point of view, it is not so important to know what kind of space you have to work with or what to do physically with the space. The really critical question becomes: what must be done to make it function as good educational space?

Basically, the characteristics of good educational space are: adequacy, suitability, safety, healthfulness, flexibility, accessibility, efficiency, economy, expansibility, and pleasantness. By reviewing and defining these functional characteristics, we can determine how the "found" space measures up.

ADEQUACY—This refers to the relationship between the overall size of the space and its surroundings to the number of students and the desired program. It includes the internal and external features that require evaluation on simply a square- or cubic-footage-available basis rather than fitness.

MAJOR QUESTION	POINTED QUESTIONS TO ASK	THINGS TO TAKE INTO ACCOUNT
Is the site large enough?	Will the program need outdoor learning and recreation spaces?	Determine space for play grounds, equipment, parking, access. Looks are deceptive so make a scaled plan and block out needs on paper. Try to make certain areas do double-duty.
Is the space large enough?	Will it accommodate all the occupants who will be there at one time?	Calculate what it would be like if everybody came to school as scheduled, and on a rainy day.
	Are the interior spaces too small?	An office building full of doctors' and dentists' offices is virtually a space full of cubby holes; would your program be better suited to a bowling alley or something between those two?
	Can you remove walls and open up spaces?	From your structural inspection, mark a floor plan for walls that can easily be taken out . . . and those that can't.
	Do you have space for all special needs?	Consider what you'll want in the way of space for special instruction such as art shop, science, music, serving food.
		Don't forget space for support activities like custodial equipment, teacher work space, administration offices.
	Do you have adequate space for storage?	Plan ahead for AV equipment, teaching aids, hats and coats, supplies, extra furniture, books, tools, raw materials, etc.

SUITABILITY—This characteristic indicates the ability to satisfactorily house the particular educational program intended. It also requires an evaluation of the available equipment and site.

MAJOR QUESTION	POINTED QUESTIONS TO ASK	THINGS TO TAKE INTO ACCOUNT
Is the overall condition of the site suitable?	Do play areas need resurfacing?	Rough gravel is not a satisfactory play surface. Black topping or sodding, however, requires certain subsurface conditions. Check this out.
	Could it be roofed over?	A sheltered or covered play space can add a great deal of usefulness to outdoor areas, particularly during inclement weather.
	Does it need extensive landscaping?	Check on street or nearby noise sources. Natural vegetation makes good screening.
Will zoning codes permit use as school?	Will the building, used as a school, now have a different set of regulations?	Verify local zoning codes for new occupancy.
Will the space work for or against the program?	Will teaching spaces enhance the way you want to teach?	Review for removal of nonloadbearing walls.
	Can water and waste lines be added?	
	Can space handle needed equipment?	
	Can you isolate conflicting activities?	
	Is scale of space "right" for user?	
	Will it be too noisy?	Sound deadening surfaces can work wonders with adjacent spaces.
Can it handle the furnishings and equipment?	Are there openings large enough for equipment to be brought in or out?	Low ceilings can inhibit use of some types of equipment.
	Can proposed teaching spaces handle AV?	
	Can you provide for a fully equipped kitchen?	
	Do you have sufficient wall surfaces for work and display areas?	
Can you move people?	Can people go from one place to another without disruption or inconvenience to others?	Consider moving teachers instead of moving students, for example.
Can you provide for community use in non-school times?	Can the public come in and stay if necessary without interference with teaching areas?	
	Can they find their way around easily?	Be sure areas and spaces are well marked or coded for easy identification.

SAFETY—This is the ability of the converted space to safegard its occupants from various normal hazards such as traffic, fire and accidents, as well as be structurally safe for occupancy.

MAJOR QUESTION	POINTED QUESTIONS TO ASK	THINGS TO TAKE INTO ACCOUNT
Is the building structurally sound?	Has the building been inspected for sound walls, roof, floors? Will removing any walls weaken the structure? Can the roof withstand heavy snow loads or winds?	Be sure someone has checked out all local building codes, fire and safety codes.
Are there interior hazards?	Slippery floors? Obstructions? Other hazards?	Stairs or steps in unprotected doorways can be icy in winter. Low service or utility lines can get in the way of equipment moving from space to space.
What fire hazards exist and what protection is provided?	What fire protection and prevention devices such as sprinklers, stand pipes, hoses, exist? Do they work? Are they sufficient for intended use? Will all furnishings meet safety standards?	Collected waste materials need a fire resistive storage area between collections.
Does the facility meet code standards?	Have inspectors evaluated the space against present local health and safety codes for inadequacies and any violations?	Stairs should probably not have more than 16 risers and two stairs should not meet on a common landing.
Can people get out?	Are there sufficient well-located exits to empty the building in 3 minutes? If over 1 floor, what fire escape provisions exist?	Exit doors must swing out, not in. Enclosed stair doors must be self-closing.

HEALTHFULNESS—This is the degree to which the users of the space will be free from dirt, excessive noise, noxious odors, and other unsanitary conditions. Occupants need to have good lighting, adequate heat and ventilation, pure water and sanitary facilities. In general, the environment should be designed to protect and promote the good health of its occupants.

MAJOR QUESTION	POINTED QUESTIONS TO ASK	THINGS TO TAKE INTO ACCOUNT
Is the overall environment suitable? Will it promote good health?	Can space be kept clean? Is there provision for daily trash collection and pick-up?	Rural disposal system may be inadequate. Check needs against present capacity.
Is the surrounding environment suitable?	Does the neighborhood have adequate lighting? Do nearby industrial plants or other uses give off noxious odors, smoke, and noise? Will traffic present problems? Can all hazards be corrected, removed, or minimized conveniently and economically?	Good lighting is a real necessity particularly for facilities encouraging use in the evenings. City officials should be prompted to install any necessary traffic lights or other control measures before school opens.
Is it a comfortable place to be?	Can it be made into a place that welcomes people of all ages?	

FLEXIBILITY—Refers to the ability to respond to change, as incorporated in the construction of the building and the development of the site, to meet new demands as the curriculum or program objectives change.

MAJOR QUESTION	POINTED QUESTIONS TO ASK	THINGS TO TAKE INTO ACCOUNT
Can space be converted easily?	How often might space changes be desirable? Daily? Each semester? Every year? Does the program allow for vacant space?	Floating space barriers, like book cases on wheels, can give immediate control of space. Demountable partitions can move on weekends.
Can it be used other ways?	Can space serve more than one purpose?	Libraries and lunchrooms can also be classrooms if handled well.
Are mechanical, electrical, and plumbing services capable of change?	Can lighting fixtures and HVAC be arranged to permit size of room to change?	Plan lots of access points into electrical and mechanical services so they can fit into new patterns without drastic remodeling.
Could you accommodate a new or different program if necessary?	What are some other potential applications that might happen in the space? Would shelving and fixtures be able to move? Could space suit another user if you wanted to get rid of it later?	Space might be used for district warehousing, a central kitchen, or an AV equipment service center if instructional use ceases. All things eventually change. The need for the converted space may evaporate in several years, or a completely different space may be needed.

ACCESSIBILITY—Refers to how close the facility is to the student it serves, the nature of any approach roads and streets, as well as some features affecting access to the building or space.

MAJOR QUESTION	POINTED QUESTIONS TO ASK	THINGS TO TAKE INTO ACCOUNT
Is the location suitable?	Can people get there? Is there nearby public transportation? Can you get cars or buses near for easy drop-off? Could an emergency vehicle get in to remove a sick or injured student or staff member? Can deliveries be made conveniently? Can trash be removed? If space is not on ground floor, what kind of access does it have?	Find out if bus lines could be extended, added or modified if not adequate. Determine if new surfaces will be needed for roadways, walks, etc., especially if more separation of pedestrian and vehicle traffic is needed.
Can students and staff get to things they need?	Can you get things out of storage without major disruption?	
Are provisions made for the handicapped?	Do you need ramps and special equipment for wheelchairs? Pilot dogs? Could physically handicapped get around safely and easily?	Determine if toilets, etc. can be used by handicapped.
Is it accessible to the public?	How about the very young, very old?	

EFFICIENCY—The securing of maximum effect with a minimum of effort. An efficient building or space makes possible maximum movement with minimum trouble, provides convenient service facilities, isolates areas of noise, and is located for maximum utilization of site.

MAJOR QUESTION	POINTED QUESTIONS TO ASK	THINGS TO TAKE INTO ACCOUNT
Is the building well located on site?	Is the building too close to the street for ease of student access? Do you have access to needed parts of site?	Students pile up at entrances and exits. Set back from street or road allows for some congestion and provides traffic safety.
Will space be easy to maintain?	Are surfaces simple to clean?	Try using various easy-to-clean surfaces without getting cold and sterile. Modern carpeting is easier to care for than tiled floors in hallways, study areas. Think about food spills and chemicals and dripping solder in other spaces.
Are all the equipment and services in good condition?	Do you have access to maintenance equipment?	
Is there good movement of people?	Does space lend itself to variable or modular scheduling?	If space is minimal for needs, don't make everyone move at once. Arrange scheduling for nonpandimonium movement of people.

ECONOMY—Proper operation at minimum cost. An economical facility utilizes its resources efficiently and conserves heat, electrical energy and water.

MAJOR QUESTION	POINTED QUESTIONS TO ASK	THINGS TO TAKE INTO ACCOUNT
Can you maintain it without great expense?	Are surfaces of walls and floors easy to maintain? How about window replacements? Is the space well insulated? Has it been vandalproofed? Is it easy to service and repair? Are on-site utilities adequate?	Will the costs of service far outweigh effectiveness of another building?
Will it retain value for future?	Can it be sold if no longer needed? Will the investment pay off for the district both educationally and financially? Will conversion increase the value of property to the extent of the investment?	Don't plan yourself into a "white elephant" that may stand vacant. Resale of property could return a major portion of your investment.
Is there more space than you need?	Can you put it to use productively? Can you rent it out?	Will a tenant interfere with the school function?

EXPANSIBILITY—The potential for growth of the building and/or site to meet educational needs. Building expansibility usually depends on basic construction and limitations of heating and ventilating.

MAJOR QUESTION	POINTED QUESTIONS TO ASK	THINGS TO TAKE INTO ACCOUNT
Can the space grow?	Would growth patterns disrupt or destroy effective space relationships? Would present services be overtaxed? Would structure still be safe?	Remember that space requirements may change as programs change. Is this "found" space to be permanent or temporary? Do enrollment projections indicate growth or decline? If building is not "self-contained", does it need to be near other supporting facilities?
Is more site available?	Is site blocked by surroundings?	
Is more space available?	Are there floors suitable for occupancy above or below? Can you purchase or lease more of the building or land? Can roof be used for recreation or other functions?	

PLEASANTNESS—How the space looks and whether it will be attractive when finished. Care should be given to landscaping, color harmony, appropriateness of furnishing and use of decoration.

MAJOR QUESTION	POINTED QUESTIONS TO ASK	THINGS TO TAKE INTO ACCOUNT
Is the overall space a nice place to be?	Have you planned to use interesting colors, graphics and decor to make spaces interesting and enjoyable to be in?	
How does the exterior look?	Does it say, "Come in and enjoy me"? Does it suit the neighborhood? Do you want it to reflect a "school" or something "nonschool"? Have you eliminated signs of deterioration? Would it help a deteriorating neighborhood to become a "good" neighborhood again?	

PROTECTION—The important subject of "Environmental-Hazards Protection" is treated separately and in greater detail in Section 5.

3. WHAT KIND OF SPACE HAVE YOU FOUND?

Obviously, before any commitment to utilize a specific potential space is made, and before you can determine, with some degree of accuracy, what the costs of using that structure or space might be, it will be necessary to have a detailed inspection and analysis made of the physical property. A complete survey of the space and of applicable building and zoning codes should provide the additional information needed to make a final decision.

Unanticipated delays, unplanned-for expenses, and many other unforeseen developments, could turn a "found" space conversion project into a nightmare of problems. A detailed, comprehensive inventory of the potential space, its present condition, needed repairs, code deficiencies and restrictions, likely problems, limits of usage, and recommendations—made or conducted by the team of competent professionals—might well turn out to be the most economical investment of the project.

An experienced architect should be retained to conduct the survey and analysis. This same architect may or may not be retained for remodeling the building later. The architect will be able to coordinate the investigation work of other professionals either from his own staff or on a consultant basis.

Before the survey begins, spell out in detail what your space needs are and, to the extent possible, exactly how you intend to use the space.

If available, obtain a complete set of plans of the building along with a brief history, describing its present (or former) use and a list of any additions, changes or renovations to date. For planning, a simplified set of schematic drawings should be made that include dimensions of useful areas.

The survey and report should cover seven basic areas to provide data for evaluation:

CODE CONSIDERATIONS

—Does zoning permit school in this area?
—What are occupancy requirements for a school?
—Does building have too many stories to be used as a school with its present type of construction?
—Is area too great for use as a school with this type of construction?
—Is the type of construction permitted for school use?
—Are exits adequate for school use?

THE BASIC STRUCTURE

—What is the overall condition of the building?
—Are all load-bearing walls sound?
—Is the foundation shifting, settling or cracking? Can it take more load?
—Is roofing bonded? How long does bond have to run?
—Are the floors level, sound, free of decay, capable of repairs, refinishing, or as a base for such treatments as carpeting or tile?
—Inspect windows for needed repairs, fit of frames, and window operation.
—Are exterior walls in need of any repair or are there signs that suggest weakness?
—Describe condition of interior walls, including surface finishes they have and state of repair.
—Are ceilings sound and secure and suitable for needed alterations?
—Obtain a history of repairs made to building. Do they indicate problem areas?

MECHANICAL SERVICES

—Describe type and make of heating system serving the space.
—What is its age and condition?
—Does it heat space adequately?
—If gas is used, is there oil standby?
—What provisions are made for fuel storage, if needed?
—How is space ventilated?
—Describe cooling system provided, if any.
—What is the system's age, condition and adequacy?
—Inspect condition of heating/cooling risers, runouts, and returns.

—Can ducts or pipes be modified without complete overhaul?
—If radiators are used, what is present condition? Steam or hot water?
—Inspect status and condition of temperature controls.
—Is heating equipment protected with modern safety devices?
—Inspect and describe condition of waste systems, including traps, sumps.
—Include water pressure, condition of hot and cold water lines, taps, valves, and fixtures.
—Inspect pumps, boilers, and other machinery.

ELECTRICAL SERVICES

—Describe main service, type, and capacity.
—Approximate age and condition of present service.
—Is it sufficient for intended use?
—Can additional service be added without difficulty?
—Describe type and condition of wiring, conduits.
—Describe panel boards and their locations.
—Describe lighting fixtures, electrical outlets, and switches.
—Survey and test alarm systems and internal communications systems, if any.
—Indicate availability of power for lighting, plug-ins, special equipment.

HEALTH AND SAFETY REQUIREMENTS

—List stairways, and note present condition.
—Will they require enclosures and handrails? Do they meet code requirements for tread and riser dimensions?
—Describe fire safety equipment. Will it meet codes for school occupancy? ~~Does it~~ work?
—Check fire escapes and exits. Describe condition, location and possible deficiencies.
—Does construction and interior material meet standards of fire resistive construction? Is structure of fireproof construction if more than two stories?
—Check on number and condition of extinguishers, hoses.
—Examine building for unused duct risers or storage areas, particularly around stairwells.
—Are corridor widths sufficient for anticipated occupancy?
—Investigate and report on condition of drainage, both surface and waste water.
—Describe condition of all sanitary facilities.

SITE CONDITIONS

—Report general features of site.
—Describe conditions of walkways, yard surfaces.
—Examine subsoil condition for potential addition of equipment.
—Are platforms in safe condition?
—Examine any retaining walls for structural soundness.
—Is exterior lighting adequate for anticipated use?
—Describe condition of any fencing or other barriers.
—Inspect drains, gutters, and leaders for condition and needed repairs.
—Evaluate ease of maintenance.

ENVIRONMENTAL HAZARDS PROTECTION (See Section 5)

—Resistance to hurricane, high winds.
—Tornado shelter capability.
—Radiation protection capability—where, how many shelter spaces, protection factor?
—Resistance to civil disturbance—are there too many windows in vulnerable places?
—Blast resistance.

ALTERNATE USE EVALUATION

This last report should be a professional evaluation—based on much of the information in the preceding reports—of limitations on the use of the space. Planners should determine the basic educational use applications and a set of space criteria. Then list all of the areas, wings, floors, and other types of interior spaces that exist in the structure and make an evaluation of how suitable each would be for that basic use.

For example, the following is a sample chart that might be used as a basis for making up one of your own:

MODEL FOR ALTERNATE USE EVALUATION FORM - Summarizes status of six criteria in each area or space to evaluate how well each fulfills requirements for different uses.

list the anticipa... to which the spa...

list all of the general and special areas of present building or space .....

POTENTIAL FOR USE AS	INSTRUCTIONAL SPACE						LABORATORY SPACE						ADMINISTRATIVE SPACE						LARGE GROUP INSTRUCTION						LIBRAR... SPACE			
Existing Area or Space / CRITERIA	Exits	Structure	HVAC	Lighting	Services	Finishing	Exits	Structure	HVAC	Lighting	Services	Finishing	Exits	Structure	HVAC	Lighting	Services	Finishing	Exits	Structure	HVAC	Lighting	Services	Finishing	Exits	Structure	HVAC	Lighting
COURTYARD																												
NORTH OFFICES	X	●	●	X	X	X	X	●	●	–	–	X	●	●	●	X	●	●	●	●	X	X	●	X	●	●	X	–
WEST OFFICES																												
CENTER HALL																												
LOBBY																												
WORKROOM 1																												
WORKROOM 2																												
STORAGE AREA A																												
STORAGE AREA B																												
ASSEMBLY AREA																												
CAFETERIA																												

Mark spaces as follows:

- ● Adequate for this intended use
- X Use possible with changes/repairs/modifications
- – Not recommended for this use

·USE EVALUATION FORM - Summarizes status of six
ıce to evaluate how well each fulfills requirements for

list the anticipated use to which the spaces might be put.

POTENTIAL FOR USE AS	INSTRUCTIONAL SPACE						LABORATORY SPACE						ADMINISTRATIVE SPACE						LARGE GROUP INSTRUCTION						LIBRARY SPACE						STORAGE SPACE					
CRITERIA	Exits	Structure	HVAC	Lighting	Services	Finishing	Exits	Structure	HVAC	Lighting	Services	Finishing	Exits	Structure	HVAC	Lighting	Services	Finishing	Exits	Structure	HVAC	Lighting	Services	Finishing	Exits	Structure	HVAC	Lighting	Services	Finishing	Exits	Structure	HVAC	Lighting	Services	Finishing
RD																																				
OFFICES	X	●	●	X	X	X	X	●	●	–	–	X	●	●	●	X	●	●	●	●	X	X	●	X	●	●	X	–	–	X	–	–	–	–	–	–
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k spaces as follows:

- ● Adequate for this intended use
- X Use possible with changes/repairs/modifications
- – Not recommended for this use

4. WHAT WILL IT COST TO BE MADE USEFUL?

By now you should have obtained a great deal of information about the space you are planning to convert—what it needs in the way of repair just to be able to use it, what kind of additions, remodeling, architectural treatment, and furnishings and equipment will be needed. Let's assume it appears to be practical for the intended use, and it can be made to house the desired educational program without inflicting too many concessions on the objectives. Now comes the hard decision: Can you afford it?

Money for educational facilities and programs is almost always in short supply. If an excellent building is presently available, perhaps analysis will reveal that half the cost of constructing a new school could be saved by refurbishing an existing space. In the EFL publication, *Places and Things for Experimental Schools**, the editors reveal how the School District of Philadelphia worked out a numerical guide for estimating the cost advantage of found space when they converted a former government testing laboratory to the Olney High School Annex. They found using the laboratory saved them 45% over the cost of a new structure.

In the first section of this publication we said that using found space was a realistic alternative if no other alternative was better. Perhaps the original reason for seeking found space was the need to find a way of housing a special kind of educational program that worked best in definitely noneducational space. Perhaps more appropriate space for your educational program could not be built. But for most, the basic reason for considering found space is it will save more money (or time) than any other alternative available. For most situations, one of the most important questions to be answered will still be "how much will it cost?"

*Places and Things for Experimental Schools, New York: Educational Facilities Laboratories, Inc. and Experimental Schools, USOE; 1972, p. 14-15.

—to correct any basic deficiencies in the structure?
—to make any basic repairs?
—to make services adequate for intended use?
—to remodel the various general and special spaces to meet the requirements of the program?
—to install and purchase necessary equipment?
—to add furnishings and decor?
—to equip administrative, custodial and medical support areas?
—to build any necessary additions?
—to add health and safety devices or measures?

—of necessary landscaping and outdoor equipment.
—of needed environmental-hazards protection.
—operation and maintenance required because of special problems.
—fees for various professional services for the project.

How does this compare with another space, another alternative? Perhaps this particular space will be just too costly for the end result. Where can you compromise spending without compromising objectives? Have you considered phasing the conversion, doing a section or a floor at a time? Or perhaps doing the outside and site work later? And don't forget that remodeling an older building can unearth some surprises not always pleasant. Old plans may be out of date or inaccurate. Always include contingency dollars for the unexpected (5-10% of the budget).

If you were modernizing an out of date educational facility instead of converting noneducational space, one guideline might be the 50-percent rule: If the cost of modernization exceeds 50 percent of the cost of replacement, then modernizing the facility is questionable. Administrators looking at "found" space, however, find themselves in a more complex situation. Often, there is no possibility of new construction offering a viable alternative. Sometimes, a special need, a severe budget, or an unusual program application is the motivation. Occasionally, the district may only intend to utilize the space for less than 5 years, while a new facility is being planned and constructed.

So the probability is that what you spend will be determined by what you want to do with the space, how long it needs to serve, and whether you plan to keep it in the capital assets of the district or institution. Other factors, too, may dictate ways to reduce the costs or what you can do with the space. An outright purchase of the building may be the initial intention, but sometimes buildings can be purchased for only a token of their market value. Perhaps a lease arrangement could be made, particularly if a short use is anticipated, or a lease with an option to purchase. Pursue other ownership arrangements, too. What about private ownership or cooperative ownership with the parents involved? Could a separate corporation be set up with a lease-back arrangement?

When considering utilizing "found" space, keep in mind the place of the structure in the community. Historical preservation of a neighborhood or community landmark may well be one of the unanticipated benefits that can swing money and citizen opinion in your favor. Remodeling an ugly, but otherwise sound, structure may have the same effect from the other direction.

Mostly, however, putting "found" space to work is simply cheaper than constructing new space. A good structure of adequate size may often require nothing more than simple interior changes and furnishings. It can save time, too, since remodeling can be done during any season of the year. There is no large amount of exterior work subject to weather delays.

5. WHAT KINDS OF ENVIRONMENTAL HAZARD PROTECT[ION] ARE NEEDED?

AT KINDS OF IRONMENTAL ZARD PROTECTION RE NEEDED?

In these times, merely making a building safe and healthful for its occupants, based on local codes and standards, is not enough. Many codes and regulations fall short of adequate, reasonable protection and fail to take into account the possibility of infrequent but never-the-less real, severe hazards.

As discussed in the first section of this publication, the school plays a very important role in the community, particularly during times of emergencies and disasters. Even "found" space, when converted, loses its former identity and becomes a school. And along with its new function comes the responsibility of being prepared to serve the community when these emergencies occur.

When discussing environmental hazard protection, we are referring specifically to those factors such as hurricanes, tornadoes, floods, earthquakes, noise and air pollution, vandalism, civil disturbances, and fallout radiation. General safety and health factors for normal occupancy have already been discussed in the preceding sections. This section will attempt to outline provisions that need to be considered in abnormal emergency circumstances.

Unlike an existing educational facility that would probably possess some protective capabilities, such as adequate sanitation, medical provisions, food service, and shelter space, a noneducational "found" space may have few, if any, of these capabilites. The original function may never have placed a priority on situations that would demand such capabilities, or it may have been built prior to a time when such hazards were considered.

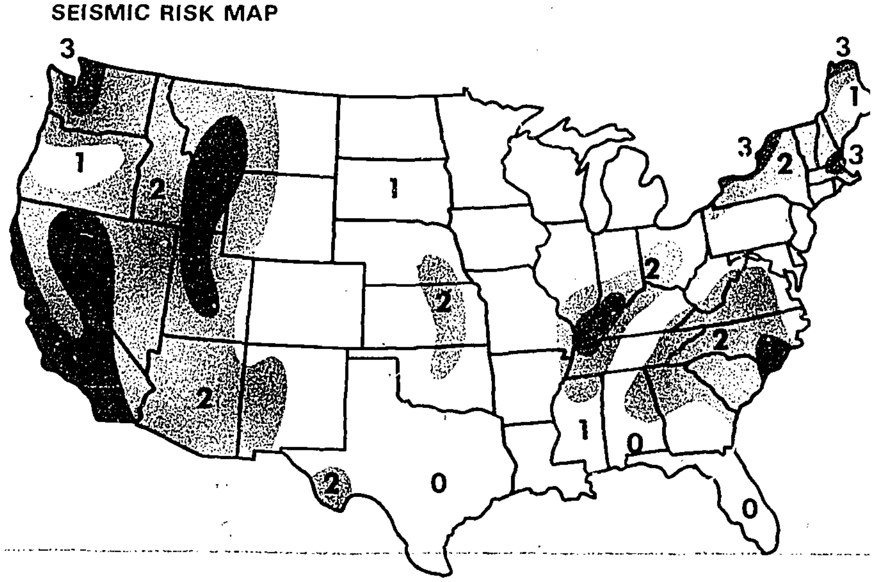
Whatever the case, responsible administrators should realize that the newly created educational space can play an important role in future emergencies and should be ready to fulfill such demands when needed.

NATURAL ENVIRONMENTAL HAZARDS

Natural environmental hazards, of one kind or another, are likely to occur in almost any area of the United States. They can range from extreme cold and snow conditions in the northern half of the country to floods along the coastline of Louisiana. More than likely, a severe weather hazard will create an emergency simply because the average citizen is unable to cope with the damage, the inability to get food and supplies, and the loss of electricity and heating fuel. Public buildings, and schools in particular, can offer invaluable aid in the way of food, shelter, medical care, and relocation, but only if they are prepared and able to do the job.

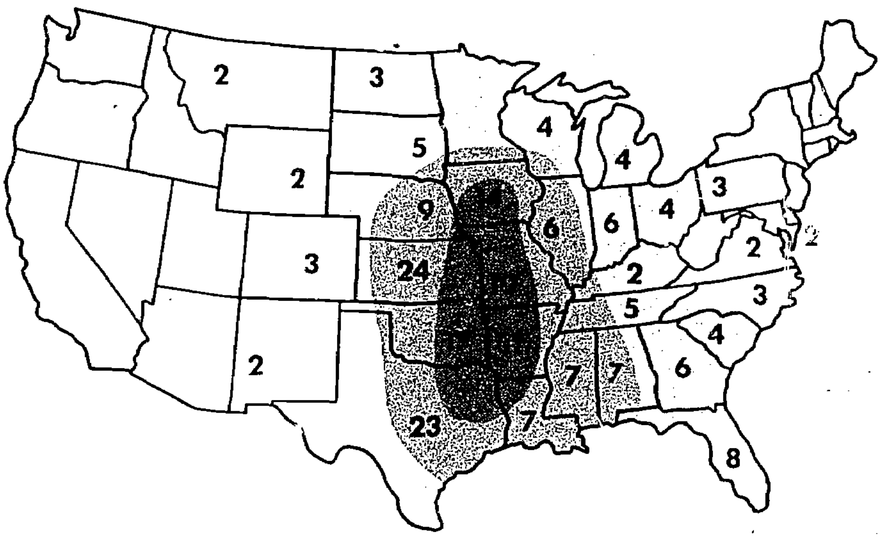
While many areas of the United States are not subject to severe natural hazards, there is probably no area completely safe or immune. Illustrated below are seismic-, tornado-, and hurricane-potential maps for the coterminous United States, courtesy of the Defense Civil Preparedness Agency of the Department of Defense.

SEISMIC RISK MAP



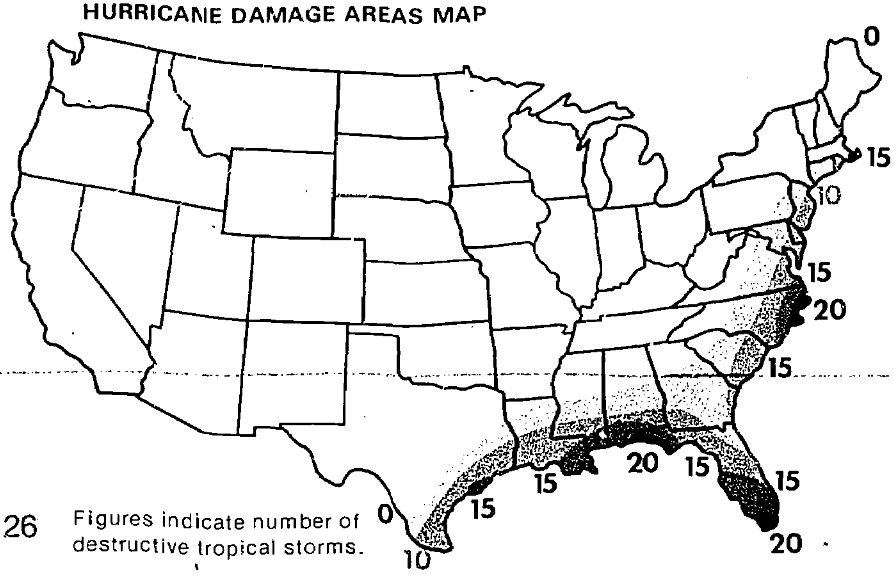
Zone 0 - No damage expectancy
Zone 1 - Minor damage expectancy
Zone 2 - Moderate damage expectancy
Zone 3 - Major destruction expectancy

TORNADO FREQUENCY MAP



Shaded regions indicate areas most susceptible to tornado damage. Greater frequency indicated by darker tones. Numbers indicate average annual tornado frequency for that area.

HURRICANE DAMAGE AREAS MAP



Figures indicate number of destructive tropical storms.

EARTHQUAKES—In high-probability areas, building regulations and codes already exist that require buildings to be designed to withstand seismic forces. Requirements cover dead loads, live loads, wind loads, parapets, wall fastenings, foundation ties, and moment-resisting steel frames. Regulations are designed to prevent the complete collapse of a structure as well as minimize injury to people inside and outside the building. Unfortunately, it is impossible to predict with accuracy the type and magnitude of the forces to which a given building may be subjected.

Basically, the planner must ascertain how well constructed the structure is and how well it can be expected to resist the effects of a more-than-moderate earthquake. Is it possible to ascertain the probable degree of safety and what would be the probable extent of damage in a more-than-moderate earthquake? Answers to these questions can lead to determining if the safety of its occupants require additional strengthening of the basic structure or, in the event of an emergency, which areas of the structure should be vacated immediately.

TORNADOES—The destructive forces of this type of storm can vary from those completely leveling the building to those losing a few shingles from the roof. Most of the damage to buildings in or near the tornado "touch down" is caused to roofs and windows.

Safety precautions under such conditions* include moving people inside shelters, preferably underground or into a steel-framed or reinforced-concrete building of substantial construction. Since about 80 percent of the injuries to people during a tornado come from flying glass and debris, occupants should remain away from windows and avoid seeking shelter in auditoriums, gymnasiums, or other structures with huge, clearspan roofs.

*See Tornado, National Oceanic and Atmospheric Administration, United States Department of Commerce; Washington, D.C., October, 1970.

Many commercial and industrial structures, even in tornado hazard areas, were built with large windows. Planners, considering conversion of such spaces, should place a high priority on removal of large windows and replacement with solid walls. At least cutting down on the size of windows and using plastic panels or tempered glass will cut down considerably on the potential hazard.

If the school board wishes to economize and does not want to spend money to make the entire structure tornado-proof, it can authorize tornado protection in only one section. This section, however, must be large enough to house the school population for a short time during a tornado alert.

HURRICANES—While generally confined to the eastern third of the United States, the hurricane is an intense storm capable of causing widespread damage from high-velocity winds and accompanying flooding of low-lying areas.

Wind damage generally starts when velocities reach 100 m.p.h. and higher. Building codes, in most coastal areas in the east, take these forces into account. When converting an older structure, however, it should be checked thoroughly and frequently to be sure it continues to maintain structural soundness.

Of equal importance, particularly in lower coastal areas, is the hazard of flooding. With the strong possibility that the schoolhouse will become a disaster center, precautions must be taken to design features to prevent high water from endangering the building or its occupants. Provisions should also be made to incorporate safe storage facilities for emergency food, water, and medical supplies.

SEVERE WEATHER—Almost every winter, there are news stories of some community or area that finds itself in the middle of an emergency due to heavy snowstorms or severe temperatures. And usually the community puts to use facilities such as schools to serve as emergency housing for stranded motorists, as places to stay for residents without heat and/or electricity, or perhaps as centers for emergency aid and supplies.

If you are in an area where such weather conditions are possible, consult with local authorities on probable needs and consider how well the converted structure or space can be made to serve. The preparation time in these situations is usually very short, and within a few hours the school could suddenly be required to provide shelter for a number of people who need food, sanitary facilities, places to sleep, protection against the elements, and possibly medical assistance.

MANMADE ENVIRONMENTAL HAZARDS

NOISE POLLUTION—High noise levels, fast becoming a major concern of urban-area environmentalists, are endangering citizens just as much as foul, noxious air and bad water.

Environmentalists point out that the noise levels over most of the country have doubled in the past 15 years and may double again within the next 15. Noise, or unwanted sound, can actually do physical damage to people, particularly under prolonged exposure.

Attention to sound barriers within a space can do a great deal to reduce the noise levels. When selecting decor and furnishings, planners should place a high value on the use of sound-absorbing materials such as acoustical tile, carpeting, and soft fabrics. Care should be taken, however, not to place soft materials where they will be subjected to hard use.

Insulation against structure-borne sound may be a difficult problem in "found" space. If project budgets are limited, a hefty expenditure on structure-borne sound reduction may be out of the question. Planners, attempting to convert solidly constructed public buildings such as post offices, railway stations, and the like, will probably find space that has good insulating qualities against unwanted sounds. Noise-transmission problems are best solved by using materials with increased mass which also add the benefits of increased protection against fire and fallout radiation.

Unwanted sounds from outside sources can also be diminished by careful landscaping of the site with thick bushes and hedges that will screen traffic, playground, and industrial noise. Planners should carefully consider orientation of building openings to noise sources.

VANDALISM—The fact that school buildings are vulnerable targets for vandalism can be easily demonstrated by noting that over 200 million dollars are spent annually simply replacing broken glass. Four out of five school administrators listed vandalism in general as a top-priority problem, and 70 percent of the damage was broken windows.

Design criteria for new schools in many districts impose glass-area restrictions in vulnerable places as one approach to the problem. In addition, limited glass area also reduces operating costs of heating, air conditioning, and maintenance.

For planners of "found" space conversions, reduction of glass areas when remodeling can not only reduce operation and maintenance for more economy of upkeep, but it can add additional hazard-protection characteristics recommended in other areas. Consider the effects of glass breakage described in sections dealing with natural environmental hazards such as tornadoes and hurricanes. The increase in mass will reduce noise transmission and increase fallout radiation protectiveness.

Modern lighting techniques and equipment have proven to be highly satisfactory in providing good educational environmental characteristics, and artificial light can be controlled much more easily than highly variable natural light. A recent study* of a windowless underground school demonstrated that the Hawthorne effect was virtually nonexistent.

Prevention of vandalism is difficult. Among educators, there are several schools of thought on how to cope with the problem. Damage to the building; breaking and entering; damage to equipment, files and records; and other acts, from writing obscenities on the walls to setting fires, lead some to advocate the "fortress" theory: make access to the facility so difficult it will discourage attempts at vandalism. Everything from electronic security systems to barbed wire fences have been used in attempts to make schools secure. Others have tried the "open" theory: involve the community, and make the citizens and students identify strongly with the school. Then keep it open from early morning to late at night so that people are around most of the time.

How can you solve this problem? Neither of the above solutions has worked to everyone's satisfaction. How one approach or the other will work for you depends on many unknowns. However, we can list some ideas that may be helpful in most situations and can easily be part of the conversion planning.

Consider lighting. Dark areas, such as courtyards, parking lots, corridors, doorways, between-building passageways, and building recesses can offer easy places to hide and cover for illicit activities. Good, well-planned lighting is inexpensive protection. If the facilities will be used after dark, it is particularly important psychologically to have plenty of exterior and interior lighting. It not only adds the element of safety but is inviting and attractive to those who legitimately want to use the building after dark.

Administrative areas, where expensive equipment and confidential records are found, should be planned so that they would be reasonably difficult to enter in off-duty hours. One of the best preventions is to make such equipment and records as inconspicuous as possible.

Again, simply having people around most of the time is a positive deterrent. The dark, vacant school can often represent a challenge to vandals.

Vandal-set fires, like accidental fires, do the least damage if quickly extinguished. If a fire is put out before it spreads, the damage can often be negligible. If recommendations for life safety make the installation of

*Abo Revisited, Final Report of the Abo Elementary School and Fallout Shelter Evaluation; Washington, D.C., Defense Civil Preparedness Agency, June 1972.

good fire prevention devices—sprinkler systems and smoke detection equipment—valid, they will serve to protect the vacant buildings as well as the occupied ones.

RADIOACTIVE FALLOUT—Perhaps the most abnormal of all manmade environmental hazards that could be experienced would be "fallout"—the radioactive dust and debris resulting from nuclear detonation. In the event of nuclear attack, the particulate matter could be carried great distances and settle on horizontal surfaces such as roofs and the ground well beyond any areas directly affected by the nuclear explosions themselves.

Any building will probably offer some natural protection. Further shielding capabilities that may be added during renovation or remodeling will add greatly to the protection of occupants. Particularly when converting a space to an educational facility, the added features for its new use may be perfectly justified in also bringing the space up to Federal standards outlined for nuclear fallout protection, with little or no additional cost.

The Defense Civil Preparedness Agency, in several documents included in the bibliography, lists standards for shelters and shelter supplies that should be carefully reviewed by the school planner and project architect. Often, "found" space can meet these standards or exceed them. When it cannot, protection should be added in designing the remodeling.

Briefly, the minimum DCPA standards for public shelters require:

1. A protection factor (PF) of 40. Simply stated, this is the relationship of the radiation someone would receive in the shelter vs. the amount he would receive if unprotected. A shelter with PF 40 represents one offering 1/40th (or 2-1/2 percent) of the radiation exposure that an open, unprotected space would offer.
2. Approximately 10 square feet of usable space per person.
3. Approximately 65 cubic feet of space per person.
4. Ventilation capable of supplying a minimum of 3 cubic feet of fresh air per minute per occupant.*
5. Structure and fire resistance in accordance with local codes.
6. Nearby utility lines such as gas, oil, etc. valved or otherwise controlled to protect occupants.
7. No less than two widely separated entrances and exits.
8. Capability to function without electrical service.
9. Features designed to function for useful life of the facility.

Under almost any of the hazard conditions or emergencies covered in this section, we have not discussed the types of supplies that might be on hand should an emergency require the school to house groups of people for any length of time. Undoubtedly, civilian and military relief units will be able to supply such needs in short order, and having food serving capabilities will aid in distribution. In a nuclear emergency, or when severe weather conditions prevent emergency relief from reaching the school for some time, emergency supplies may well make the difference for survival.

Planners should consider the following as guidelines for the minimum shelter supplies and capabilities to plan for:

1. A minimum of 3-1/2 gallons of potable water for each occupant.
2. A minimum of 10,000 calories of food per shelter occupant.
3. There should be a minimum of 1 toilet per 50 occupants.
4. Medical and normal first-aid supplies.
5. Radiation detection instruments. These are available at no cost to school science departments for instructional purposes, and for shelter area use during emergencies.

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*The shelter should have a ventilation rate sufficient to maintain a daily average effective temperature (ET) of not more than 82 degrees F. for at least 90 percent of the days of the year.

WHAT HAVE OTHERS DONE WITH "FOUND" SPACE?

To illustrate some of the many possibilities for converting "found" space into educational facilitie[s] following pages contain descriptions of some exis[t] projects. These few examples indicate the wide var[iety of] possibilities open to districts and institutions look[ing for] ways to utilize noneducational space.

Following these examples is a resource list of man[y] known "found" space projects. If you are intereste[d in] obtaining more information about any of them, sim[ply] contact the institution directly.

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To illustrate some of the many possibilities for converting "found" space into educational facilities, the following pages contain descriptions of some existing projects. These few examples indicate the wide variety of possibilities open to districts and institutions looking for ways to utilize noneducational space.

Following these examples is a resource list of many other known "found" space projects. If you are interested in obtaining more information about any of them, simply contact the institution directly.

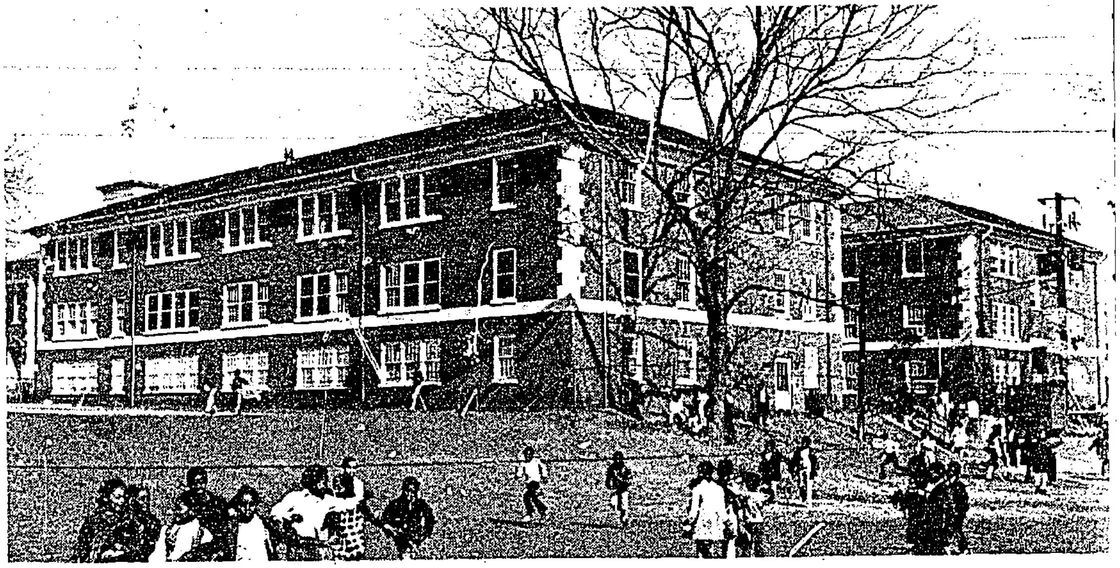
A FORMER CHURCH BECOMES AN ELEMENTARY SCHOOL

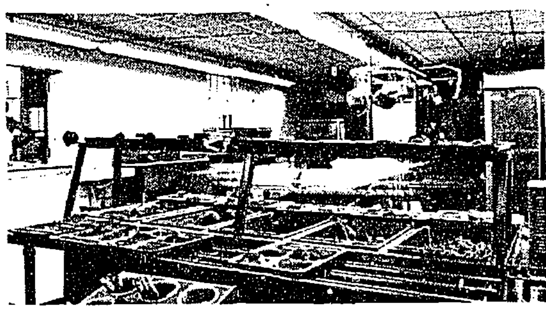
Fountain Elementary School
2071 Boulevard Drive, S.E.
Atlanta, Georgia 30317
Ruth Pace, Principal

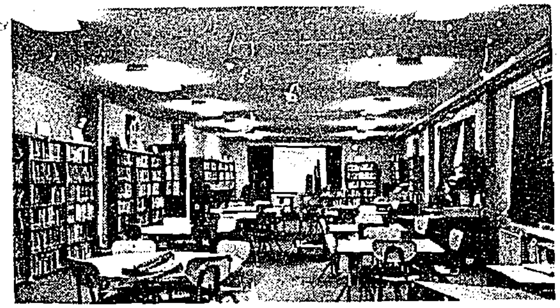
During the mid '60's, this neighborhood changed racially and the schools had many more black children than the facilities could hold. In addition to placing supplementary on-site classrooms in service, in mid-1967 the Atlanta Public Schools bought the Kirkwood Baptist Church (built in 1953) for $381,000. Each Sunday School assembly area seating 30, with adjoining classrooms each seating a dozen people, were turned into public school classrooms with adjoining space for small team efforts, for real individual study and learning spots, for conference space for teachers, parents and students, for storage, and myriad educational advantages.

The Church kitchen needed the most upgrading. Existing wooden base cabinets were replaced with stainless steel plus all the other needs of a complete school kitchen. A full library was provided when the school opened and was remodeled recently. A few small parcels of land were added and less than $100,000 was spent to make this Church useful as a school. Very little else, except painting, was done to the building to meet today's educational requirements. No revisions were necessary to meet any code compliance except for the kitchen.

The architects for the Church were Thomas A. Bradbury & Associates; 60 Fifth Street, N.W., Atlanta, Georgia 30308. The planners for the revisions to the kitchen, child care, library, etc., were the Atlanta Public Schools, Office of School Plant Planning and Construction.







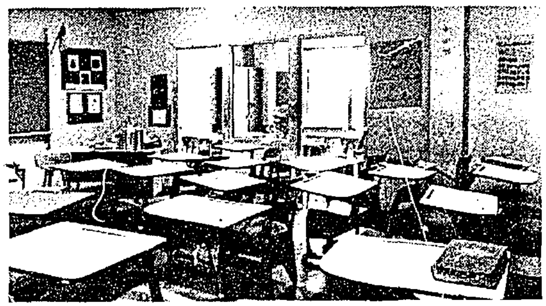


Photo credit: John LaRowe, Atlanta Public Schools

A FORMER BREWERY BECOMES A STUDENT CENTER

Auraria Higher Education Center
Colorado Commission on Higher Education
250 West 14th Avenue
Denver, Colorado 80204
Lawrence Hamilton, Director

The Tivoli Brewery is located on the site near downtown Denver as a shared facility campus for the University of Colorado at Denver, Metropolitan State University, and the Community College of Denver. Constructed in 1859, it was the first major building on the original Auraria site. Question: Can Tivoli continue to have a life as the area changes to an urban, higher education complex? Under a grant from EFL the possibility of converting it into a student center was explored.

1. The original design was of Bavarian-German type architecture, the only one of its kind in the United States.
2. The site plan retains the historic buildings and replaces the other less useful structures with a mall and a park-like approach.
3. On the left is a simplified plan of the 169 acre site near downtown Denver. Auraria is the original name of the area, a town that pre-dated Denver. It is located near the shared facilities of the three institutions.
4. The re-use of the lovely and historic Rathskeller is obvious. As much of the original character as possible will be retained.
5. With a minimum of change the Turnhalle will become a center for student productions and student-oriented special events.
6. To be able to utilize many of the existing pieces of equipment, such as the copper brew kettles as conversation pits, the huge water tanks as toilets, and janitor closets and the grain storage bin as seminar and film viewing rooms, adds another exciting, utilitarian dimension.
7. The retention of as much of the original character as possible is part of the proposed plan.
8. The Tivoli Brewery Tower Building and the Turnhalle can be restored and activated as a highly utilitarian student service facility for a total project cost of less than $35 per sq. ft.

Architects for the project are: More/Combs/Burch; 3911 East Exposition Avenue, Denver, Colorado 80209.

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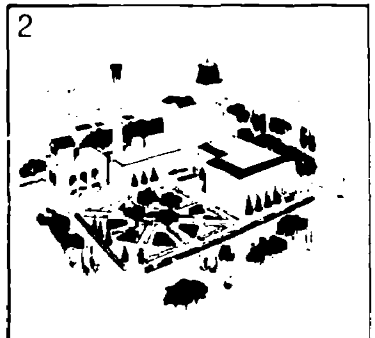

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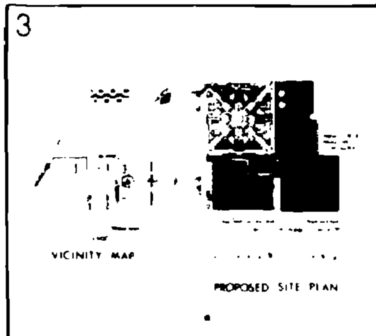

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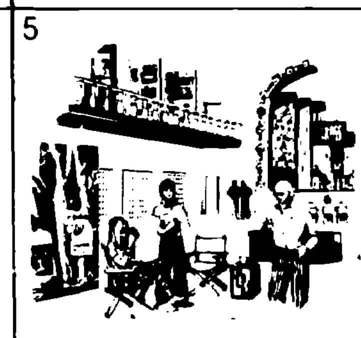

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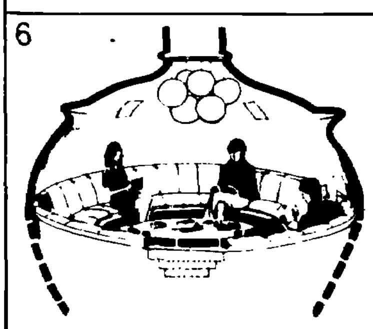

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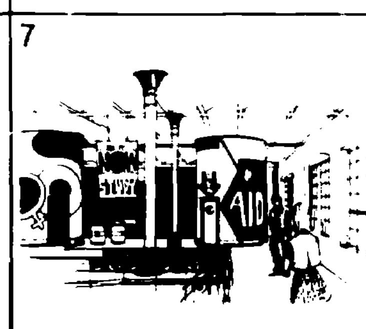

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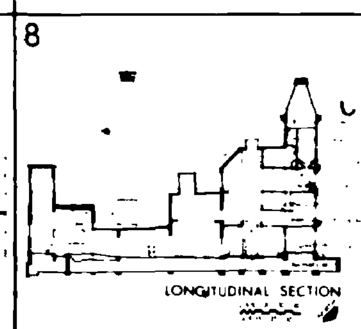
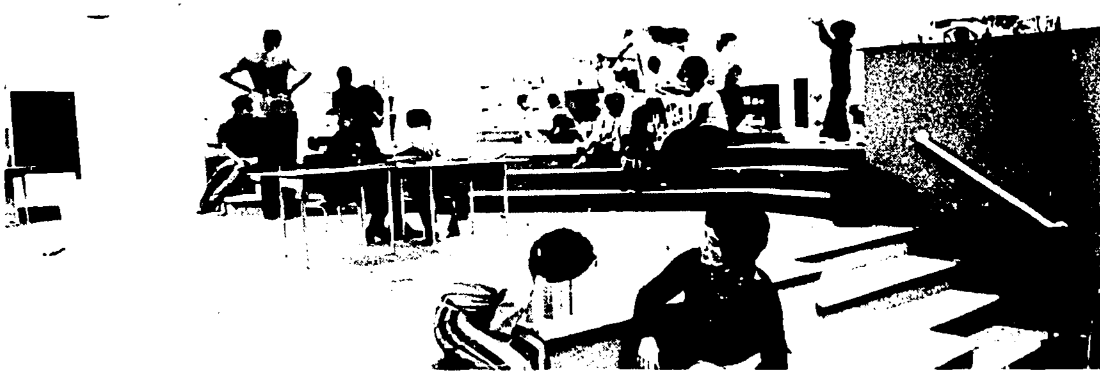


Photo courtesy Auraria Higher Education Center
Drawings courtesy More Combs & Burch

A FORMER SYNAGOGUE BECOMES A PRESCHOOL

Block School for Pre-School Children
1062 Winthrop Street
Brooklyn, New York 11212
Carol Harris, Director



The innovational program of the Block School for Pre-school Children is designed for youngsters between the ages of two years and eight months, and four years and eight months. The program was established in the fall of 1970 to serve a nine-square-block section of School District 18 in Brooklyn. At present, 75 children attend in the new quarters.

The Block School is a major innovation in preschool education, physically as well as pedagogically. Its activities are conducted in the open space environment of a large, specially equipped room. New ideas and techniques in early childhood education have been explored through the medium of a planned but flexible curriculum.

The Block School's building is a former synagogue that has been redesigned to accommodate very young children. The children spend their entire school day from 8:30 a.m. to 1:00 p.m. in one large open area. The various centers for activities, which range from very tranquil to exuberant, are chiefly identified by different levels of the floor and bright colors. The floor plan reflects the innovative nature of the facility. The re-design of the building was made possible by a grant from Educational Facilities Laboratories, Inc.

Interior structure and materials consist of carpeted wood platforms, low plasterboard partitions and simple furniture made of reinforced cardboard. The conversion project cost was $75,000 complete, $12.50 per sq. ft. The architects were Hammel Green & Abrahamson, Inc.; 2675 University Avenue, St. Paul, Minnesota 55114.

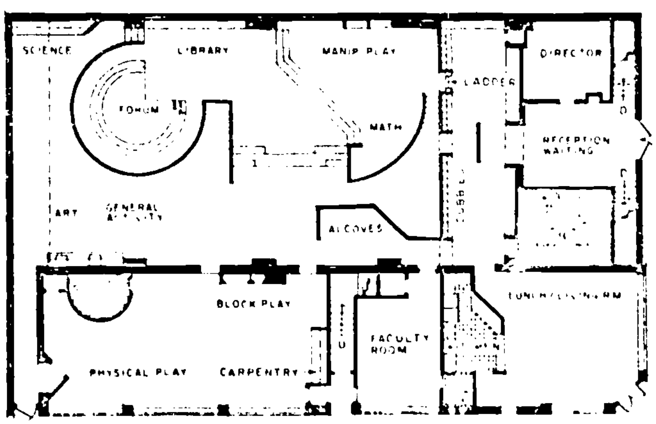


Photo credit: George S. Zimbel, Educational Facilities Laboratories, Inc.

A FORMER COMPUTER FACTORY BECOMES A K-12 OPEN SCHOOL

St. Paul Open School
1885 University Avenue
St. Paul, Minnesota 55107
Wayne Jennings, Director

The school is a four-floor 52,000 sq. ft. building with a 60 ft. front yard running the length of the structure, and a back parking lot large enough for 130 cars. The building had once been a computer plant and therefore had wiring sufficient for any school needs. In addition, it was air conditioned, an unexpected bonus.

The location proved better than expected in terms of the metropolitan area. Centrally located, it is equally close to downtown St. Paul and Minneapolis. The school took a one-year lease for $60,000 with an option to renew for two more years. Parents, staff, students and volunteers took out the low office-type partitions; scrubbed, plastered, and painted, and scrounged old furniture wherever it was available. School district maintenance men installed a fire alarm system and upgraded acoustical wall and ceiling materials.

The St. Paul Open School is not truly open, at least not in the "one big room" sense. In developing resource areas for the school, a number of walls were retained, nooks and crannies created.

It is a relatively inexpensive educational program using a small number of professional teachers. It is inter-aged, nongraded, student centered, using the community as well as itself as a learning center and it gives students tremendous responsibility. As a structure, the building reflects and supports the program.

Photo credit: Bob Perron, Educational Facilities Laboratories, Inc.

A FORMER RAILWAY STATION BECOMES AN ART SCHOOL

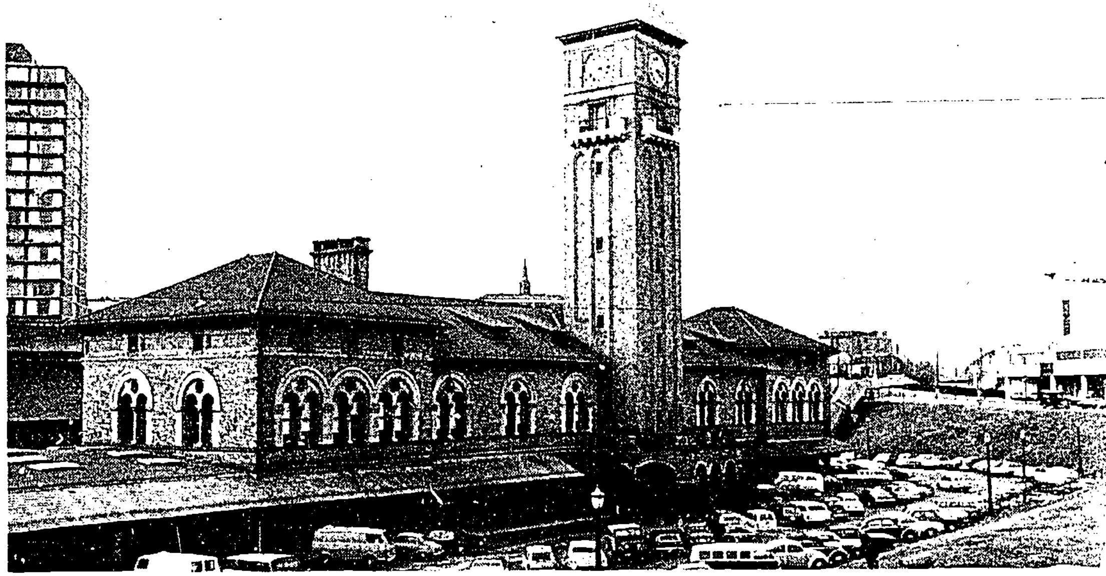
The Maryland Institute
College of Art
1300 Mount Royal Avenue
Baltimore, Maryland 21217
Eugene W. Leake, President

In 1958, the Maryland Institute College of Art was seeking badly needed expansion space and the B & O Railroad was in the process of abandoning its Mount Royal Station. Designed in 1894, the structure was a city landmark with massive granite and limestone walls and a familiar clocktower rising above a sunken park.

The building and its 3½ acre site were purchased for $250,000, and $600,000 was raised to convert the structure. Building space was increased from 22,500 to 47,000 sq. ft.

The exterior changes were minor, basically enclosing open-roofed areas. The high-ceilinged interior permitted creation of a second floor over much of the former waiting room. New auditorium and gallery spaces were designed, as was a new second floor library, lounge and studio space.

Architects for the Mount Royal conversion were Cochran, Stephenson & Donkervoet, Inc.; 925 N. Charles Street, Baltimore, Maryland 21201.



B

C

D

Photo credit: (A) John Dorman (B) Ken Huston
(C) George Cserna (D) Joan Clark Netherwood

A FORMER FACTORY BUILDING BECOMES A UNIQUE VO-TECH SCHOOL

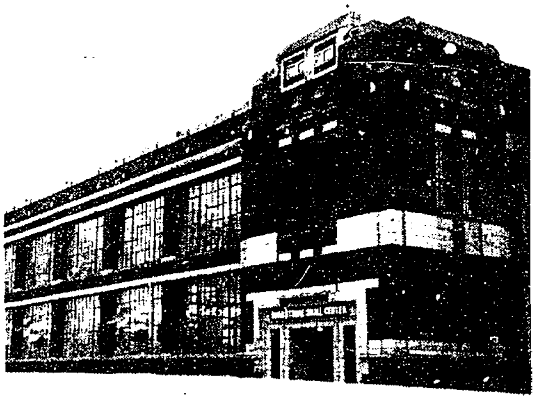
Industrial Skills Center
2815 West 19th Street
Chicago, Illinois 60623
Phillip Viso, Principal

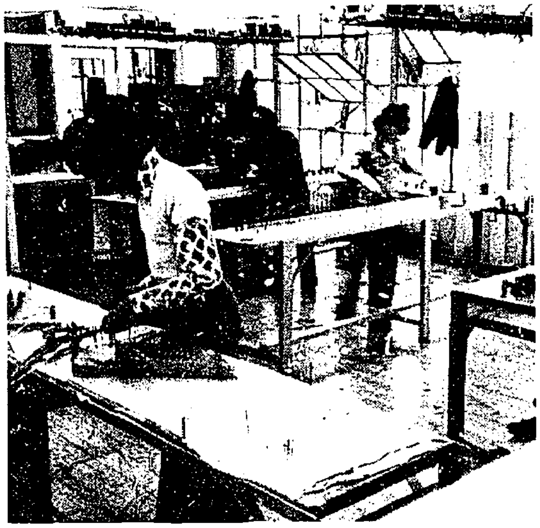
One of Chicago's most successful schools is located in a former milking-machine factory. The school—the Industrial Skills Center—provided an alternative education for 320 students aged 16 to 20 years.

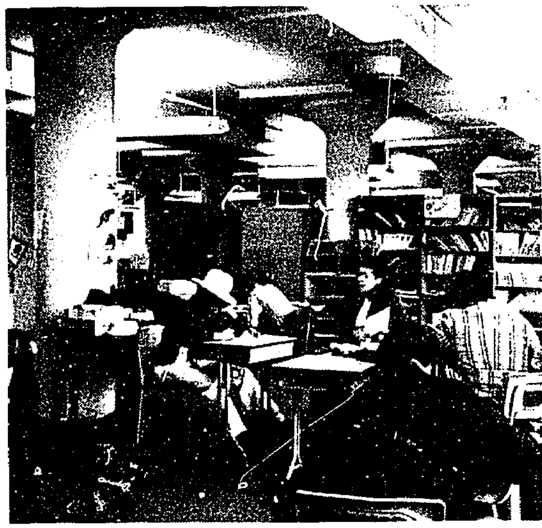
The ISC building is divided roughly into three parts. The upper floor houses a learning center, a carpeted, open plan area in which students spend about half of their time. Students work in the centers on independent programs. The ground floor contains two shops, one set up by Western Electric, the other by Motorola. In both cases, the work is of commercial quality. The students are paid and their products are sold on the market. The third part of the building on the ground floor and lower level offers 15,000 sq. ft. to other industries that would like to set up training shops within the Industrial Skills Center.

Before being acquired by the Board of Education, the ISC building was unoccupied for two years. The Board of Education purchased it for $120,000 and invested another $100,000 in plumbing, heating, lighting, painting, carpeting and general cleanup. An additional $3,000—most of it in wiring—was needed to make the Western Electric shop operable, and $6,000 went into the Motorola operation. The companies brought their own equipment for the shops, with Western Electric spending some $50,000 and Motorola as much as $70,000.

The school has a remarkably high attendance record (92.8%) and a low tardiness level (3%), both attesting to the fact that it is meeting the needs of its students. Perhaps the best measure of the school's success is that the walls are absolutely free of graffiti and every one of its thousands of windowpanes is intact.



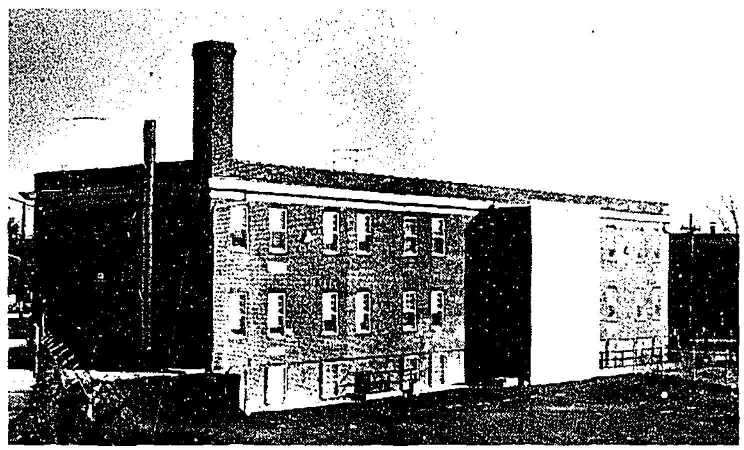




Photos courtesy of Industrial Skills Center

A FORMER OFFICE BUILDING BECOMES AN ELEMENTARY SCHOOL ANNEX

Harrington School Annex
53rd Street and Thomas Avenue
Harold W. Freeman, Director
School Planning Department
Philadelphia Board of Education
Parkway at 21st Street
Philadelphia, Pennsylvania 19103

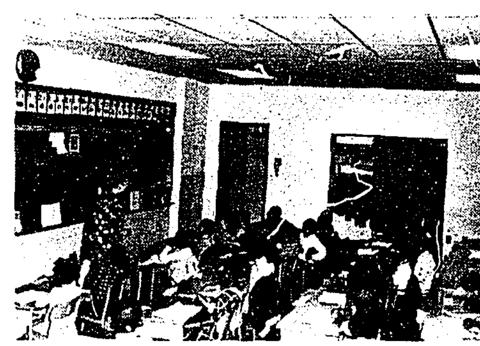


A population shift created a desperate need for basic classroom space in this community. The old (early 1900's) office building for a former coal company, just across the street from the main Harrington School building, seemed ideal for this purpose.

Many of the existing partitions had to be removed to create the spaces of classroom size. A large space on the basement level made it simple to convert to a recreation room. Local code requirements directed the addition of a fire tower. The site provided space for outdoor recreation in the rear and limited off-street parking in the front.

To prevent such hazards as vandalism, heavy-gauge wire screening was installed over the windows and security lights were installed at parapet level.

The conversion project was handled by the Philadelphia School District's Department of Architecture and Engineering, Edward W. Diessier, AIA, Director.



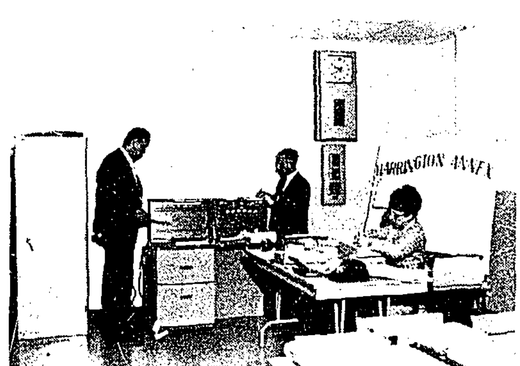


Photo credit: Division of Instructional Materials
Philadelphia Board of Education

A FORMER CHURCH BECOMES A CONTINUING EDUCATION CENTER

The Off Campus School [Secondary]
Bellevue Public Schools
310 102 nd. N.E.
Bellevue, Washington 98004
C. Keith Birkenfeld,
Public Information Director

The purchase of a former community church at a bargain price gave the Bellevue School District an opportunity to convert noneducational or "found" space into much needed larger facilities for its Off Campus School. The school district has operated the Off Campus School since January, 1970, with the goal of providing a continuing educational opportunity for students who had discontinued their education in a Bellevue secondary school prior to graduation. In addition, the school offers a supplementary learning disabilities program for students attending other schools in the district. The Off Campus School works with a maximum of 150 students, with much of its instruction on a one-to-one basis.

On the 2½ acre site of the Lake Hills Community Church was a 15,000 sq. ft. church building and a five-bedroom parsonage. The site contained large playground and parking areas. The church building contained a chapel and a recreation/meeting room, each of which would seat 500, but the district's main interest was in the two-story, eight-classroom educational wing. Also included were a kitchen, storage areas, bathroom facilities, and two separate furnace systems.

The School Board's decision to purchase the property followed a careful investigation of repair costs, code requirements for school use, legal and title implications, availability of public transportation, and anticipated operating costs.

Very little work was required to adapt the church building to the needs of the school program. To date, approximately $16,000 has been spent for this purpose. Of that amount, $5,000 was spent for replacement of 162 windows. Another large portion was allocated to asphalt paving of a driveway and parking space for 16 to 18 cars. Partitions were installed in the main floor auditorium, lighting was provided for classroom areas, and water and gas outlets were added in the science area.




Photos courtesy of Bellevue Public Schools

A FORMER SUPERMARKET BECOMES A PRESCHOOL

Community Learning Center
2503 Good Hope Road, S.E.
Washington, D. C. 20020
Helen Lewis, Director

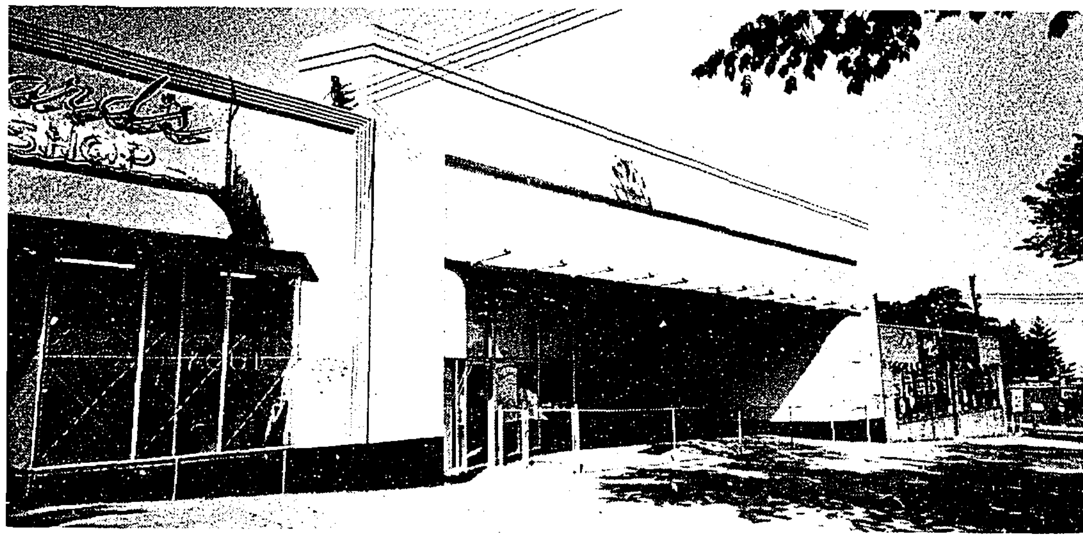
Th's preschool learning environment was housed in a former Children's Toy Store, between a sandwich shop and a Goodwill clothing store. The building was situated in a run-down neighborhood, and there was ten thousand square feet of raw space for development.

At one end of the building, on the second floor, was a space which overlooked the main floor and created an ideal observation area. Back space on both floors were the offices, kitchen and baths. The learning area was spread throughout what was originally the main shop floor. The original space had twenty-foot high ceilings, large glassed front entrance and facade, and the interior was equipped with strip fluorescent lighting. Physically, the space was a rectangular box, unimaginative and depressing.

The space was designed to house up to 100 children for as much as 13 hours a day. The floor area was not divided into individual classrooms, rather, it was decided to use it as a whole and create learning spaces within the total environment. Five bays were built by the use of one, two and three-foot platforms, grouped together to visually and physically create privacy. These bays were interconnected to other areas each of which had their own identity but at the same time were a part of the whole. The total space was linked by three main towers interconnected by catwalks. In this way, the large rectangle was eliminated. In it's place is a variety of bays - some large, and open; others small and intimate; spaces for group activity, and others for individual work; high places and low ones; crawl away areas and lofts to get into and look down from; bridges, tunnels and towers.

The interior learning environment became a "city" - designed and created for children, and built on the scale of the child.

Environment designed by Curtis-Smith Associates, Inc., 5 Broadway, Route 1, Saugus, Massachusetts 01906.



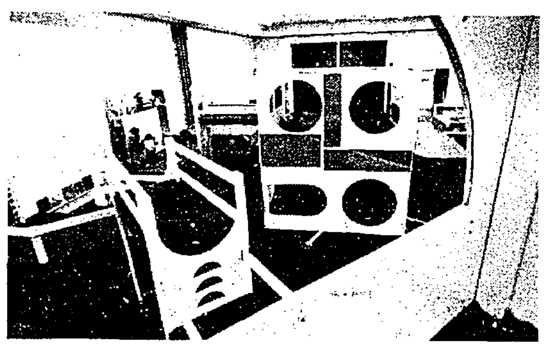


Photo credit: George S. Zimbal, Educational Facilities Laboratories, Inc.

OTHER RESOURCES

ELEMENTARY SCHOOLS

Farm
Catlin Gabel School
8825 Southwest Barnes Road
Portland, Oregon 97225
Manvel Schauffler, Headmaster

Catering House
Burnside Manor Elementary School
85 West Burnside Avenue
Bronx, New York 10453
Della Lee, Principal

Old Mansion and Barn
The Key School (K-12)
534 Hillsmere Drive
Annapolis, Maryland 21403
David S. Badger, Headmaster

Old House
Shady Lane School
6319 Walnut Street
Pittsburgh, Pennsylvania 15206
Lynn Raphael, Director

Mattress Factory
Public School 211
560 East 179th Street
Bronx, New York 10457
Carmen Rivera, Principal

Sardine Factory
Our School
Robbinston, Maine 04671
Susan Tureen

Synagogue
The Rowen School Annex
6817 North 16th Street, Philadelphia
Harold Freeman, Director of School Planning
Parkway at 21st Street
Philadelphia, Pennsylvania 19103

Old Church
Conwell Middle School Annex
3076 Emerald Street
Philadelphia, Pennsylvania 19134
Mildred Wilson, Principal

EARLY LEARNING CENTERS

Supermarket
Hilltop Center
344 Blue Hill Avenue
Roxbury, Massachusetts 02121
Olga Scott, Social Supervisor

Apartment Building
Acorn Montessori School
330 East 26th Street
New York, New York 10010
Doris Schwartz, Director

Souvenir Shop
Sea Pines Montessori School
Hilton Head Island, South Carolina 29928
Sally Cook, Director

Refrigerator Warehouse
KLH Child Development Center
38 Landsdowne Street
Cambridge, Massachusetts 02139
Julia Haddad, Director

Residence
Hoke Smith
Title IV-A Child Development
535 Hill Street, S.E.
Atlanta, Georgia 30312
Ocie Irons, Principal

Kindergarten at Connally Elementary School
1626 Westhaven Drive, S.W.
Atlanta, Georgia 30311
Robert H. Wilson, Principal

SECONDARY EDUCATION

Franciscan Seminary (Springdale campus)
Hotel (Victoria Hall dormitory)
Private Junior College (Administration Building)
Portland Residential Manpower Center
(Job Core Centers)
Portland Public Schools
1022 Southwest Salmon
Portland, Oregon 97205
Richard D. Boss, Director

Lamp Factory
Woodland Job C[illegible]
4966 Woodland Avenue
Cleveland, Ohio 44104
Albert Cunningham, Director

Light Manufacturing Plant
Grady Production Lab
Grady High School
929 Charles Allen Drive
Atlanta, Georgia 30308
Harold Miller, Principal

Factory Loft
Philadelphia Advancement School
5th and Luzerne Street
Philadelphia, Pennsylvania 19140
Tom Minter, Director

Bathhouse
South Boston High School
L Street Annex
1663 Day Boulevard
South Boston, Massachusetts 02127
Leo McCormack, Principal

Green Stamp Display Room
Vocational Village
Portland Public Schools
725 S.E. Powell Boulevard
Portland, Oregon 97302
Ronald L. Thurston, Director

Girdle Factory
Pennridge Central Junior High School Annex
Pennridge School District
Perkasie, Pennsylvania 18944
Arthur W. Crouthamel, Principal

Office Building
Brooklyn Friends School
112 Schermerhorn Street
Brooklyn, New York 11201
Stuart P. Smith, Principal

Supermarket
Harlem Preparatory High School
2535 Eighth Avenue
New York, New York 10030
Edward F. Carpenter, Headmaster

Candy Factory
George Washington Vocational High School
3301 West Franklin Boulevard
Chicago, Illinois 60624
Raphael Sullivan, Principal

Warehouse
Neal Simeon Vocational High School
8235 South Vincennes Avenue
Chicago, Illinois 60620
Howard J. Sloan, Principal

SPECIAL SCHOOLS

Chrysler Motors Training Center
Instructional Services Center
2930 Forest Hills Drive
Atlanta, Georgia 30315
E. Curtis Henson, Assistant Superintendent

United Van Lines Office & Warehouse
Addition to above
Instructional Services Center

Supermarket
Bartram High School Commercial Annex-
Commerce Magnet
6404 Elmwood Avenue
Philadelphia, Pennsylvania 19142
Louis D'Antonio, Principal

Warehouse
Bay High School (free school)
(independent economic base)
805 Gilman Street
Berkeley, California 94707
Joan Levinson, Director

Old Warehouse
Far West Laboratory for Educational Research
and Development
1 Garden Circle
Hotel Claremont
Berkeley, California 94705
George Rusteika, Associate
Laboratory Director

YWCA Basement to K-6 Alternative School
Boise Independent School District
1207 Fort Street
Boise, Idaho 83702
James N. Frisby, Administrative
Assistant and Facilities Planner

Federal Fallout Shelter to a Teaching Center and Instructional Materials Center
Boise Independent School District
1207 Fort Street
Boise, Idaho 83702
James N. Frisby, Administrative
Assistant and Facilities Planner

Southern Bakery to Central Instructional Materials Center and Book Depository
Duval County School Board
330 East Bay Street
Jacksonville, Florida 32202
Donald C. Bulat, Associate Superintendent
for Facilities

Church
Bankhead Center for Daily Living
770 Elizabeth Place, N.W.
Atlanta, Georgia 30303
Gwendolyn Howard
(This Center also offers a variety of Community Services)

Post Office
Jefferson Center for Vocational Rehabilitation
1300 Jefferson Avenue
Toledo, Ohio 43624
Richard Bucholz, Director

48 Acre Ranch to the Overlake School
Private 7-12
Donald F. Burr, FAIA & Associates, Architects
P.O. Box 3403
Tacoma, Washington 98499

Church Home for Girls
West Philadelphia High School Community
Free School
4226 Baltimore Avenue
Philadelphia, Pennsylvania 19104
Ola Taylor, Administrator

ADDITIONAL INFORMATION SOURCES

American Institute of Architects
1735 New York Avenue, N.W.
Washington, D.C. 20006

Association of School Business Officials
2424 West Lawrence Avenue
Chicago, Illinois 60625

Council of Educational Facility Planners,
International
29 West Woodruff Avenue
Columbus, Ohio 43210

Defense Civil Preparedness Agency
Washington, D.C. 20301

Educational Facilities Laboratories, Inc.
477 Madison Avenue
New York, New York 10022

Society for College and University Planning
c/o Columbia University
616 West 114th Street
New York, New York 10025

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