An annotated reference list of documents received and processed by the ERIC Clearinghouse on Educational Facilities. These documents are concerned with construction costs of facilities at all levels of education. Each document is indexed and abstracted. (NI)
CONSTRUCTION COSTS OF EDUCATIONAL FACILITIES

An Annotated Reference List

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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CONSTRUCTION COSTS OF EDUCATIONAL FACILITIES

An Annotated Reference List

Prepared By
Howard E. Wakefield
Director

ERIC Clearinghouse on Educational Facilities
The University of Wisconsin
Madison
November, 1968
FOREWORD

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Many of the documents reported in RIE are available from the ERIC Document Reproduction Service. This service is currently provided by the National Cash Register Company, 4936 Fairmont Avenue, Bethesda, Maryland 20014. Individual documents may be obtained on microfiche at 25¢ for each 60 pages or fewer. Facsimile documents are available at 4¢ per page. Standing orders of all documents related to certain topics are available at 8.4 cents per fiche.

These references are drawn from the documents received and processed to date by ERIC/CEF. They are not represented as a comprehensive list of information on the subject. However, many of the documents are not widely circulated and are therefore useful in expanding existing information. All documents listed herein with an ED number (see symbol page) are available from EDRS. The remaining documents should be sought through the indicated publisher or distributor (the institution source or the information provided at the end of the abstract).

ERIC/CEF invites you to submit documents which are related to the activities described in the first paragraph above.
THIS BULLETIN PRESENTS RECOMMENDATIONS WITH REGARD TO PROGRAM, PERSONNEL, AND FACILITIES FOR AN INSTRUCTIONAL MATERIALS ORGANIZATION AND LAYOUTS FOR AN INSTRUCTIONAL MATERIALS CENTER. CASE STUDIES AND EXAMPLES ARE PROVIDED FOR MAKING THE MAXIMUM POSSIBLE USAGE OF THE CENTER WITHIN BOTH THE SCHOOL AND THE COMMUNITY. (BD)
ANNOTATED REFERENCES
COLLEGE STUDENTS LIVE HERE (A STUDY OF COLLEGE HOUSING)

BY- RIKER, HAROLD C. AND LOPEZ, FRANK G.
EDUCATIONAL FACILITIES LABORATORIES, INC., NEW YORK, N. Y.

PUBLISHED- 61

155 PAGES


A REPORT PROVIDING A BROAD OVERVIEW OF PROBLEMS AND PRACTICES IN THE DESIGN OF COLLEGE HOUSING FACILITIES. MAJOR TOPICS INCLUDE (1) CHARACTERISTICS OF STUDENT POPULATIONS, (2) TYPES OF HOUSING SOLUTIONS, (3) ENVIRONMENTAL COMPONENTS AND CRITERIA, (4) PLANNING METHODS, AND (5) FINANCING CONSIDERATIONS. THE DISCUSSION IS CENTERED AROUND THE NEEDS OF STUDENTS AND THE ROLE OF HOUSING IN THE EDUCATIONAL ENVIRONMENT. SPECIFIC MATERIAL IS INCLUDED ON HOUSING FOR GRADUATE AND MARRIED STUDENTS AND FACULTY. DATA IS SUPPLIED FOR (1) HOUSING NEEDS, (2) SPACE REQUIREMENTS, AND (3) BUILDING COSTS. A LARGE NUMBER OF EXAMPLES ARE PROVIDED SHOWING EXISTING SOLUTIONS, WITH PHOTOGRAPHS AND FLOOR PLANS. THIS DOCUMENT IS AVAILABLE FROM THE EDUCATIONAL FACILITIES LABORATORIES, 477 MADISON AVENUE, NEW YORK 22, NEW YORK. (MM)
COST MODEL FOR LARGE URBAN SCHOOLS

DEPARTMENT OF HEALTH, EDUCATION AND WELFARE, WASHINGTON, D.C.

PUBLISHED— 67
IN—TECHNICAL NOTE, NO. 30
026 PAGES

DESCRIPTORS— *COSTS, *SCHOOL CONSTRUCTION, *URBAN EDUCATION, CAPITAL, EQUIPMENT, EXPENDITURES, SCHOOL LOCATION, TRANSPORTATION

THIS DOCUMENT CONTAINS A COST SUBMODEL OF AN URBAN EDUCATIONAL SYSTEM. THIS MODEL REQUIRES THAT PUPIL POPULATION AND PROPOSED SCHOOL BUILDING ARE KNOWN. THE COST ELEMENTS ARE—(1) CONSTRUCTION COSTS OF NEW PLANTS, (2) ACQUISITION AND DEVELOPMENT COSTS OF BUILDING SITES, (3) CURRENT OPERATING EXPENSES OF THE PROPOSED SCHOOL, (4) PUPIL TRANSPORTATION COSTS, (5) INSTRUCTIONAL EQUIPMENT COSTS, AND (6) DEBT SERVICE COSTS. VARIABLES CITED THAT DETERMINE CONSTRUCTION COSTS OF NEW SCHOOLS ARE ADMINISTRATION COSTS, SPACE PER PUPIL, TOTAL PUPILS, AND THE SQUARE FOOT COST. FROM EVIDENCE PRESENTED, THE ASSUMPTION THAT LARGER SCHOOL PLANTS COST LESS PER PUPIL CANNOT BE SUPPORTED. QUANTITY RATHER THAN QUALITY OF BUILDING WAS CONSIDERED. LAND COSTS ARE DETERMINED BY COST PER ACRE, LAND NEEDED FOR TYPE OF SCHOOL, LAND NEEDED PER PUPIL, AND TOTAL NUMBER OF PUPILS. CURRENT OPERATING COSTS ARE ESTIMATED FROM SALARY LEVEL AND NUMBER OF STAFF, EDUCATIONAL LEVEL AND NUMBER OF PUPILS, AND TEACHER-PUPIL RATIO. TRANSPORTATION EXPENSES ARE DETERMINED FROM EQUIPMENT COST, MAINTENANCE AND STORAGE COST, PUPILS TRANSPORTED, EFFECTIVE CAPACITY OF BUS PER MILE COST OF OPERATION, BUS SPEED, AND PUPIL COLLECTION TIME. INSTRUCTIONAL EQUIPMENT COSTS ARE DETERMINED FROM PURCHASE AND MAINTENANCE COSTS, AND NUMBER OF PUPILS USING EQUIPMENT. DEBT SERVICE COSTS ARE ESTIMATED FROM CONSTRUCTION, BUS, EQUIPMENT, LAND PURCHASE, INTEREST VARIABLES, AND AMORTIZATION SCHEDULE. (JZ)
ANALYSIS OF URBAN EDUCATIONAL SYSTEMS MAY BE ACHIEVED BY USE OF AN ANALYTICAL MODEL. THE MODEL MAY BE USED IN DECISION-MAKING REGARDING SCHOOL LOCATION, ENROLLMENT, FACILITIES, ORGANIZATION, PROGRAMS AND COSTS. KNOWN DATA SUCH AS MONIES AVAILABLE, STAFF ALLOCATION, AND CURRENT SCHOOL PLANT ARE INTRODUCED INTO THE MODEL. IN THE STRUCTURE OF THE MODEL--(1) AN INITIAL INVESTMENT POLICY (BUILDING) IS PROPOSED BY THE ADMINISTRATOR. THE PROPOSAL IS RELATED TO (2) AN URBAN SUBMODEL WHICH COMBINES PUPIL POPULATION, LOCATION, TRANSPORTATION NEEDS, AND SOCIO-ECONOMIC CHARACTERISTICS OF THE COMMUNITY, (3) SCHOOL SUBMODEL WHICH DESCRIBES THE SCHOOL PROGRAM, SITE SPECIFICATIONS AND DEVELOPMENT PLANS, STAFF SPECIFICATIONS, AND SPACE AND EQUIPMENT PROVISIONS PER PUPIL BY INSTRUCTIONAL AREA, AND (4) COST SUBMODEL WHICH HELPS TO ESTIMATE ACCURATELY TOTAL PER PUPIL EXPENDITURE FOR REMODELING EXISTING FACILITIES COMPARED TO NEW SITE AND CONSTRUCTION PROPOSALS, PER PUPIL TRANSPORTATION EXPENDITURES, AND CURRENT OPERATION COSTS. IN AN INTERACTION SUBMODEL (5), SUBMODELS (2), (3), AND (4) ARE SUMMED. SUBMODEL (6) EVALUATES BENEFITS AND COSTS PER PUPIL IN RELATION TO EDUCATIONAL OBJECTIVES, CAUSING EXAMINATION SUBMODEL (7), THROUGH FEEDBACK, TO ALTER THE ORIGINAL PROPOSAL (1), JUSTIFYING, MODIFYING, OR ELIMINATING THE INITIAL INVESTMENT POLICY. (80)
A STUDY OF THE FEASIBILITY OF PROVIDING STATE SCHOOL BUILDING FUNDS FOR RENOVATION OR MODERNIZATION OF SCHOOL BUILDINGS AND OTHER SCHOOL FACILITIES

WASHINGTON STATE BOARD OF EDUCATION, OLYMPIA

PUBLISHED- 63

REPORT/SERIES NO.- RR-09-01

041 PAGES

DESCRIPTORS- *SCHOOL MODERNIZATION, *BUILDING EVALUATION, *ARCHITECTURAL DESIGN, COST, SANITATION, SCHOOL LOCATION, SAFETY, CITY PLANNING, PROGRAM SANITATION

THIS REPORT INCLUDES GUIDELINES FOR THE MODERNIZATION OF SCHOOLS TO REPLACE SUBSTANDARD CLASSROOMS. THE CONCLUSIONS WERE THAT IF MODERNIZATION COSTS DO NOT EXCEED 20 TO 40 PERCENT OF THE COST OF NEW OR REPLACEMENT CONSTRUCTION MODERNIZATION IS FEASIBLE. VARIABLES MEASURED IN MODERNIZATION DECISIONS INCLUDE SITE, TYPE OF INTERIOR AND EXTERIOR CONSTRUCTION, AND THE NUMBER OF TEACHING STATIONS. THE TEACHING STAFF NEEDS TO CORRELATE EDUCATIONAL CHANGES WITH PROPOSED BUILDING CHANGES, BUILDING CHANGES MUST BE REVIEWED IN COORDINATION WITH THE LOCAL PLANNING COMMISSION, FIRE AND HEALTH OFFICIALS, ENGINEERING OFFICE, AND ARCHITECTURAL SERVICES. FROM SUCH INVESTIGATION A MODERNIZATION COST SCHEDULE CAN BE DEVISED TO FACILITATE A MODERNIZATION DECISION. AN INCIDENTAL CONSIDERATION TO THIS WASHINGTON STUDY WAS A FORMULA FOR STATE AID FOR MODERNIZATION COSTS AND A STATEMENT OF THE ROLE OF THE STATE EDUCATIONAL DEPARTMENT IN MODERNIZATION SHOULD IMPROVE THE SAFETY, SANITATION CONDITIONS, AND THE EDUCATIONAL ADEQUACY. THE AUTHORS CONCLUDED THAT MODERNIZATION DOES NOT REDUCE OVERCROWDED CONDITIONS OR PROVIDE ADDITIONAL SPACES FOR INCREASED ENROLLMENTS. HOWEVER, MODERNIZATION WILL DELAY REPLACEMENT OF CERTAIN BUILDINGS FOR A NUMBER OF YEARS AND IN SOME INSTANCES SOME ECONOMY CAN BE REALIZED. THE APPENDIX INCLUDES THE PRELIMINARY MODERNIZATION SURVEY INSTRUMENT DEVELOPED IN THE WASHINGTON PROGRAM.
GUIDELINES WERE ESTABLISHED TO ASSIST IN THE PLANNING AND DEVELOPMENT OF ADEQUATE FACILITIES FOR SHORT-TERM RESEARCH GRANT PROGRAMS. FUNCTIONAL CRITERIA WERE DEVELOPED FROM THE ANALYSES OF COST STUDIES AND A SURGE SPACE STUDY AT THE UNIVERSITY OF ILLINOIS. ALTERNATIVES WERE SUGGESTED FOR THE PROVISION, PHYSICAL CHARACTERISTICS, SITE LOCATION, BUILDING TYPE AND ADMINISTRATIVE CONTROL OF THE FACILITIES. IT WAS RECOMMENDED THAT FLEXIBILITY, ECONOMY AND EXPANDIBILITY BE INTEGRATED WITH OVERALL CAMPUS PLANNING IN THE SELECTION OF AN APPROPRIATE SOLUTION. THE APPENDIX INCLUDES SEVERAL ALTERNATIVE FLOOR PLANS AND A COST BREAKDOWN FOR THE SURGE UNIT AT THE UNIVERSITY OF ILLINOIS.
A COLLEGE HEALTH CENTER

BY—BARD, BERNARD
EDUCATIONAL FACILITIES LABORATORIES INC., NEW YORK, N. Y.

PUBLISHED—63
IN—CASE STUDIES OF EDUCATIONAL FACILITIES, NO. 6

35 PAGES

DESCRIPTORS—*BUILDING INNOVATION,* COLLEGE BUILDINGS,* DESIGN NEEDS,* FLEXIBLE FACILITIES,* HEALTH FACILITIES,* BUILDING DESIGN,* CLINICS,* COLLEGE PLANNING,* CONSTRUCTION COSTS,* HEALTH NEEDS,* HEALTH SERVICES,* INTERIOR SPACE,* STUDY FACILITIES

THIS REPORT CONSIDERS PROBLEMS AND SOLUTIONS RELATED TO THE DESIGN AND ESTABLISHMENT OF COLLEGE HEALTH FACILITIES. THIS INCLUDES THE RESULTS OF A STUDY INVOLVING COLORADO, KNOX, AND WITTENBERG COLLEGES IN WHICH PERSONAL VISITS AND EXPERT TESTIMONY CONCLUDED THAT THE HEALTH SERVICES OF SMALL COLLEGES IN THE CENTRAL AND WESTERN STATES WERE SERIOUSLY INADEQUATE. A PROTOTYPE SOLUTION WAS DEVELOPED BY THE ARCHITECTURAL FIRM, CAUDILL, ROWLETT, AND SCOTT OF HOUSTON, TO MEET THE NEEDS OF SMALL INDEPENDENT LIBERAL ARTS COLLEGES. SPECIFIC CONSIDERATIONS INCLUDED (1) INTERNAL EXPANSION AND FLEXIBILITY, (2) STUDY AND RECREATIONAL FACILITIES, AND (3) SUPERVISION AND SPACE RELATIONSHIPS. THIS SOLUTION CONSISTED OF A CIRCULAR BUILDING, WITH PATIENT ROOMS ON THE PERIMETER AND A RAISED CENTRAL NURSING STATION, WITH AUXILIARY WAITING AND TREATMENT ROOMS AND AN ATTACHED NURSES RESIDENCE. AN IMPORTANT FEATURE WAS THE PROVISION OF STUDY SPACE WHICH COULD BE REPLACED WITH EMERGENCY BEDS. THE PROTOTYPE IS INTENDED AS A LOW COST COMBINATION CLINIC AND INFIRMARY. SPECIFICATIONS, LAYOUTS, AND ELEVATIONS ARE GIVEN WITH THE SUPPORTING DESIGN ANALYSIS. THIS DOCUMENT IS AVAILABLE FROM THE EDUCATIONAL FACILITIES LABORATORIES, 477 MADISON AVENUE, NEW YORK 22, NEW YORK. (MM)
CUAL USE OF SCHOOL FALLOUT SHELTER SPACE

STATE UNIVERSITY OF NEW YORK, ALBANY

PUBLISHED- 65

021 PAGES

DESCRIPTIONS- CONSTRUCTION COSTS, DESIGN NEEDS, SPACE UTILIZATION, FALLOUT SHELTERS, WINDOWLESS SPACE, BUILDING CONSTRUCTION, EQUIPMENT STORAGE, PHYSICAL ENVIRONMENT, SCHOOL DESIGN, SCHOOL IMPROVEMENT, SCHOOL LOCATION, SCHOOL SPACE, VENTILATION

A REPORT DISCUSSING CONSIDERATION IN THE USE OF FALLOUT SHELTER SPACE FOR NORMAL SCHOOL ACTIVITIES, INCLUDING THE REQUIREMENTS FOR FALLOUT SHELTERS AND PROBLEMS RELATED TO WINDOWLESS ROOMS. THE PRESENT LACK OF INFORMATION ABOUT PSYCHOLOGICAL PROBLEMS RELATED TO WINDOWLESS ROOMS IS MENTIONED. THE BEST USES FOR WINDOWLESS SPACE ARE NOTED--(1) CAFETERIAS, (2) LARGE-GROUP INSTRUCTION, (3) AUDIO-VISUAL, (4) HEALTH, (5) ADMINISTRATION, AND (6) SHOWER AND LOCKER ROOMS. THE PROS CONCLUSIONS INDICATE (1) BASIC CLASSIFICATIONS OF SCHOOLS AS TO THEIR SHELTER POTENTIAL, AND (2) IMPORTANT FACTORS TO BE CONSIDERED. ADDITIONAL INFORMATION INCLUDES (1) THE RELATIVE COSTS OF SINGLE USE AND DUAL USE FALLOUT SHELTERS IN SCHOOLS FROM AN ACTUAL CASE STUDY, (2) A LISTING OF SCHOOLS WITH DUAL USE OF FALLOUT SHELTER AREAS AND SCHOOLS WITH WINDOWLESS CLASSROOMS, AND (3) A LETTER DESCRIBING SCHOOL AID FOR FALLOUT SHELTER CONSTRUCTION. (MM)
CRITICAL PATH METHODS IN CONSTRUCTION PRACTICE

BY- ANTILL, JAMES M. AND WOODHEAD, RONALD W.

PUBLISHED- 65

290 PAGES


THE CRITICAL PATH METHOD IS APPLIED AS A TOOL FOR THE PLANNING AND MANAGEMENT OF DIFFERENT TYPES OF CONSTRUCTION PROJECTS. THIS METHOD CONSISTS OF A SCHEMATIC DIAGRAM OR MODEL THAT DEPICTS THE SEQUENCE AND INTERRELATION OF THE COMPONENT PARTS OF A PROJECT. A PLANNING APPROACH OF THIS TYPE PERMITS CONTINUOUS EVALUATION AND COMPARISON OF ALTERNATIVE WORK PROGRAMS, CONSTRUCTION METHODS, AND TYPES OF EQUIPMENT THAT MAY BE USED. ONCE A PLAN HAS BEEN DEVISED AND CONSTRUCTION HAS STARTED, THE MODEL CAN PROVIDE INFORMATION ON THE EFFECTS OF CONSTRUCTION VARIATION OR DELAY AND PERMIT IDENTIFICATION OF CONSTRUCTION OPERATIONS REQUIRING ADJUSTMENTS. CRITERIA TO BE PUT INTO THE MODEL INCLUDES TIME-COST FACTORS, SCHEDULING, FLOAT TIMES AND PROJECT, RESOURCE AND COST CONTROLS. (GM)
AIR STRUCTURES FOR SCHOOL SPORTS

BY ROBERTSON, NAN
EDUCATIONAL FACILITIES LABORATORIES, INC., NEW YORK, N. Y.

PUBLISHED- 64

28 PAGES

DESCRIPTIONS- *AIR STRUCTURES, *PHYSICAL EDUCATION FACILITIES, *PREFABRICATION, ATHLETIC ACTIVITIES, CONSTRUCTION COSTS, COSTS, MAINTENANCE, SAFETY, SCHOOL CONSTRUCTION, SCHOOL MAINTENANCE, SCHOOL SAFETY

AIR STRUCTURES ARE FABRIC BUILDINGS BLOWN UP AND HELD UP BY AIR PRESSURE. EXPERIMENTS WITH SUCH STRUCTURES WERE CONDUCTED AS EARLY AS 1917. IN 1948 THE UNITED STATES AIR FORCE SOUGHT A NEW WAY OF HOUSING LARGE RADAR ANTENNAE PLANNED FOR THE ARCTIC, AS AN OUTCOME OF THEIR SEARCH, BIRD AIR STRUCTURES, INC., WHICH IS NOW ONE OF SEVERAL COMPANIES SELLING SUCH STRUCTURES, WAS FOUNDED. EARLY EXPERIENCES WITH AIR STRUCTURES FOR SCHOOLS IN LITCHFIELD, CONNECTICUT, WERE DISAPPOINTING. THE SUBSEQUENT ERECTION OF TWO MORE BUBBLES WAS EVIDENCE THAT SATISFACTION WAS EVENTUALLY ACHIEVED. COST ESTIMATES OF $2.14 PER SQUARE FOOT COMPARE FAVORABLE WITH WOOD-COMED FIELDHOUSES AT $6.53 PER SQUARE FOOT OR GEODESIC FIELDHOUSES AT $8.34 PER SQUARE FOOT. COSTS FOR SWIMMING POOL USE ARE ESTIMATED AT $9.38 PER SQUARE FOOT AS COMPARED TO $26.00 AND $32.00. EASE OF HEATING IS ALSO EMPHASIZED. INSTALLATION TIME IS APPROXIMATELY ONE DAY. THERE IS NO DANGER OF SUCCUBATION IN CASE OF DEFLATION BECAUSE THE PROCESS IS SLOW AND THE MATERIAL CAN EASILY BE LIFTED SHOULD ONE FIND IT NECESSARY TO GET OUT UNDER SUCH CONDITIONS. THERE IS NO FIRE DANGER. BECAUSE OF A HIGH REFLECTION SURFACE, LIGHTING PROBLEMS ARE MINIMAL. CURRENT EXPERIMENTS ARE BEING CARRIED OUT TO MAKE IMPROVEMENTS. INTERESTED READERS MAY SEE SUGGESTED DO'S AND DON'TS BY REFERRING TO THIS BOOKLET. ADVANTAGES OF AIR STRUCTURES ARE COST, HEATING EASE, LIGHTING EASE, UNOBSRUCTED AREA, PORTABILITY, MAINTENANCE, AND DEPENDABILITY. THE MAIN DISADVANTAGE IS THE LIMITED LIFE EXPECTANCY. THIS DOCUMENT IS AVAILABLE FROM EDUCATIONAL FACILITIES LABORATORIES, INC., 477 MADISON AVENUE, NEW YORK, N.Y. 10022. (RH)
BRITISH PREFABRICATED SCHOOL CONSTRUCTION

STANFORD UNIVERSITY, CALIFORNIA, SCHOOL PLANNING LABORATORY

IN SCHOOL CONSTRUCTION SYSTEMS DEVELOPMENT, REPORT NUMBER 2

DESCRIPTORS- *COMPONENT BUILDING SYSTEMS, *PREFABRICATION, BUILDING DESIGN, CONSTRUCTION COSTS

THE SCHOOL BUILDING NEEDS OF GREAT BRITAIN HAVE PASSED THROUGH A CRITICAL ERA IN THE PAST TWO DECADES. BOMB DAMAGE TO SCHOOL PLANTS DURING WORLD WAR II WAS GREAT, FOLLOWED BY A GREAT POST WAR INCREASE IN THE BIRTH RATE, POPULATION SHIFTS, A RAISE IN COMPULSORY SCHOOL ATTENDANCE AGE, AND A SHORTAGE OF BUILDING MATERIALS AND LABOR FOR SCHOOL CONSTRUCTION. ADDITIONALLY, NATIONAL MONETARY POLICY REVISION DECREASED THE AMOUNT OF PER PUPIL BUILDING COST PERMITTED BY THE GOVERNMENT. AS A RESULT, PREFABRICATION OF SCHOOL BUILDINGS HAS BECOME MOST COMMON PRACTICE IN BRITAIN. SEVERAL COMPONENT BUILDING SYSTEMS HAVE BEEN DESIGNED AND DEVELOPED THROUGH JOINT EFFORT OF GOVERNMENTAL, ARCHITECTURAL, MANUFACTURING AND CONSTRUCTION INDUSTRIES. THE COMPONENT SYSTEMS HAVE ACHIEVED MONETARY SAVINGS THROUGH MASS PRODUCTION TECHNIQUES, AND THROUGH CONTINUING FUNDING OF COMPONENT RESEARCH, BUILDING FLEXIBILITY HAS BEEN WORKED INTO THE PREFABRICATED STRUCTURES. BRITISH PRACTICES HAVE FOSTERED BUILDING COMPONENT PRICES TO BE FIXED BY COMPETITIVE ANNUAL BIDS FOR MASS CONSTRUCTION WITH RENEWAL OPTIONS. SUCH PRACTICE HAS CAUSED OPTIONAL BUILDING DESIGN, AND LOWER CONSTRUCTION PRICES AS THE MANUFACTURER AND CONTRACTOR PROFIT FROM STABLE LONG TERM COMMITMENTS. THIS EFL PUBLICATION CONTENDS THAT THE BRITISH PREFABRICATED SCHOOLS HAVE REALIZED MORE TEACHING AREA PER DOLLAR EXPENDITURE, AND THAT THE QUALITY OF BUILDING FINISH IS BETTER THAN THE AVERAGE IN NONPREFABRICATED SCHOOL BUILDINGS. TO OBTAIN COPIES WRITE, SCHOOL PLANNING LABORATORY, SCHOOL OF EDUCATION, STANFORD UNIVERSITY, STANFORD, CALIFORNIA 94305. (GM)
HIGH RISE OR LOW RISE (A STUDY OF DECISION FACTORS IN RESIDENCE HALLS PLANNING)

UNIVERSITY FACILITIES RESEARCH CENTER, MADISON, WISCONSIN

PUBLISHED- 64

055 PAGES


The purpose of this report is to serve college officials, housing administrators, planning groups and architects by focusing on the decision factors which relate to high-rise and low-rise student housing. Decision factors include—(1) Land Use Implications, (2) Site Requirements—Building Codes, Sub-soil Considerations, Natural Terrain, Accessibility, Outdoor Areas, Campus Plan, Growth Pattern, (3) Cost Implications, (4) Opportunities for Cumulative Savings, (5) Technical Considerations—Building Materials, Such Mechanical Services as Plumbing, Electricity, (6) Traffic Requirements, (7) Common Facilities and Services, (8) Operational Factors—Managerial Supervision, Housekeeping, Maintenance and Repair, (9) Size and Institutional Bigness, and (10) Sociological Implications. Appendices Discuss—(1) Comparative Evaluation of High-Rise vs. Low-Rise Design, (2) Height of High-Rise, (3) Program Statement for St. Olaf College, and (4) Checklist for Residence Hall Planning. (HH)
ALL SCHOOL BUILDINGS ARE BASICALLY SHELTER STRUCTURES. THEIR ELEMENTARY COMPONENTS ARE (1) STRUCTURAL MEMBERS, (2) WEATHER PROTECTION ELEMENTS, (3) MECHANICAL INSTALLATIONS, (4) FINISHING ELEMENTS, AND (5) BUILT-IN EQUIPMENT. THE CHOICE OF BUILDING SYSTEMS IS DEPENDENT ON (1) SUBSOIL CONDITIONS, (2) SITE CONTOURS, AND (3) CLIMATIC CONDITIONS. SEVERAL STRUCTURAL SYSTEMS ARE ANALYZED IN TERMS OF THESE CRITERIA. WEATHER PROTECTION ELEMENTS SUCH AS (1) ROOFING, (2) FLASHING, (3) SIDING, (4) WATERPROOFING, (5) INSULATION, (6) OVERHANGS AND SUNSHADES, (7) CIRCULATION CHARACTERISTICS, (8) AIR AND LIGHT PASSAGE, (9) ACOUSTICAL CORRECTION, AND (10) AESTHETIC IMPROVEMENT ARE DISCUSSED IN TERMS OF SCHOOL CONSTRUCTION. THE ASPECTS OF FIRE-RESISTIVITY MENTIONED ARE (1) SAFETY, (2) BUILDING RATING, AND (3) LOCAL ORDINANCES. MISCELLANEOUS ARCHITECTURAL CONSIDERATIONS ARE LISTED ALONG WITH RECOMMENDATIONS FOR THE ADOPTION OF A MODULAR SYSTEM OF DIMENSIONS. (MH)
A study of the school environment and the preparation of a model design solution has been conducted by an architectural firm. The solution used data from an existing comparison school in the redesign of the educational facility based on the independent control of the internal environment and the elimination of classroom windows. This approach allowed the redistribution of space and facilities within the building, providing a greater flexibility and economies in cost, space, and travel time, as well as a more effective environmental control. The model solution has compared with the existing school in terms of (1) site use, (2) floor plan, (3) construction costs, and (4) operating costs. The solution also includes specific considerations of (1) entrances, (2) corridors, (3) flexible classrooms, and (4) engineering factors.
THE DEVELOPMENT OF THE TEACHING SPACE DIVIDER

BY- CAUDILL, WILLIAM W. AND BELLOMY, CLEON C.
CAUDILL, ROWLETT, SCOTT, AND ASSOCIATES ARCHITECTS-ENGINEERS
BRYAN, TEXAS

IN- RESEARCH REPORT, 1

006 PAGES

DESCRIPTORS- *MOVABLE PARTITIONS, *PREFABRICATION, *SPACE DIVIDERS, *TEACHING METHODS, *VERTICAL WORK SURFACES,
CHALKBOARDS, CONSTRUCTION COSTS, DISPLAY PANELS, TACKBOARDS

TYPES OF VERTICAL WORK SURFACES AND THE DEVELOPMENT OF A MODEL TEACHING SPACE DIVIDER ARE DISCUSSED IN THIS REPORT. THIS DESIGN IS BASED ON THE EXPRESSED NEED FOR MORE TACKBOARD AND SHELVING SPACE, AND FOR MOVABLE PARTITIONS. THE MODEL PANELS WHICH SERVE DIRECTLY AS PARTITIONS RATHER THAN BEING OVERLAID ON A PLASTERED SURFACE, INCLUDE THE FOLLOWING FUNCTIONS-(1) SERVING AS UNITS TO DIVIDE SPACE, (2) SERVING AS VERTICAL WORK SURFACES, AND (3) FACILITATING EASY INTERIOR CHANGES. FOUR TYPES OF SURFACE, PREFABRICATED ON A FOUR BY EIGHT FOOT MODULE, INCLUDE-(1) CHALKBOARD PANELS, PROVIDING A LARGE-SCALE WRITING AND DRAWING SURFACE, (2) DOWEL PANELS, PROVIDING SHELF AND EASEL SPACE, (3) TACKBOARDS, PROVIDING A FULL WALL AREA DISPLAY SPACE, AND (4) PERFORATED PANELS, PROVIDING AN ACOUSTIC AND VERSATILE HANGING SURFACE. PANELS ARE MOUNTED DIRECTLY ON STUDS AND MAY BE DEMOUNTED AND INTERCHANGED AS NEEDED. THIS SOLUTION IS ECONOMICAL AND SAVES OFTEN WASTED WALL SPACE. (DM)
THE COMPUTER AND THE ARCHITECTURAL PROFESSION

BY- HAVILAND, DAVID S.
RENSSELAER POLYTECHNIC INSTITUTE, TROY, NEW YORK, SCHOOL OF
ARCHITECTURAL RESEARCH, CENTER FOR ARCHITECTURAL RESEARCH

055 PAGES

DESCRIPTORS- *ARCHITECTURAL EDUCATION, *BUILDING DESIGN,
*COMPUTERS, *GRAPHIC ARTS, *INFORMATION PROCESSING, CITY
PLANNING, COMMUNICATIONS, CONSTRUCTION COSTS, ENGINEERING, OFFICE
MANAGEMENT, PROGRAMING, SCHOOL SITE, TECHNOLOGY

THE ROLE OF ADVANCING TECHNOLOGY IN THE FIELD OF
ARCHITECTURE IS DISCUSSED IN THIS REPORT. PROBLEMS IN
COMMUNICATION AND THE DESIGN PROCESS ARE IDENTIFIED. ADVANTAGES
AND DISADVANTAGES OF COMPUTERS ARE MENTIONED IN RELATION TO MAN
AND MACHINE INTERACTION. PRESENT AND FUTURE IMPLICATIONS OF
COMPUTER USAGE ARE IDENTIFIED AND DISCUSSED WITH RESPECT TO--(1)
PROGRAMING, (2) SITE ANALYSIS, (3) BUILDING DESIGN, (4) CIVIL AND
STRUCTURAL DESIGN, (5) ENVIRONMENT AND EQUIPMENT, (6) CITY AND
REGIONAL PLANNING, AND (7) OFFICE AND JOB MANAGEMENT. DEMANDS ON
COMPUTER TECHNOLOGY AND THE ARCHITECTURAL PROFESSION ARE
INDICATED. A TECHNICAL SUPPLEMENT ON COMPUTER TECHNOLOGY IS
INCLUDED ON--(1) COMPUTER PROGRAMING, (2) HARDWARE, (3) THE
COMPUTER, (4) NON-COMPUTER METHODS, AND (5) A GLOSSARY OF TERMS
RELATED TO COMPUTER TECHNOLOGY. (MM)
TOWARDS AN ECONOMICAL FLEXIBILITY

BY RICHARDSON, L. S. AND CAUDILL, WILLIAM W.
CAUDILL, ROWLETT, SCOTT AND ASSOCIATES ARCHITECTS-ENGINEERS
BRYAN, TEXAS

IN RESEARCH REPORT, 3

010 PAGES

DESCRIPTORS- *AUDITORIUMS, *CONSTRUCTION COSTS, *FLEXIBLE
FACILITIES, *SCHOOL EXPANSION, *SPACE DIVIDERS, BUILDING DESIGN,
CLASSROOM DESIGN, SCHOOL PLANNING

AN ARCHITECT AND A SUPERINTENDENT OF SCHOOLS COLLABORATED ON
THE DESIGN FOR A HIGH SCHOOL, WHICH STRESSED ECONOMY AND
FLEXIBILITY. THEY CONSIDERED THREE ASPECTS OF FLEXIBILITY--(1)
EXPANDABILITY, (2) CONVERTIBILITY, AND (3) VERSATILITY.
EXPANDABILITY IS DISCUSSED IN TERMS OF SITE SELECTION AND
PLANNING. CONVERTIBILITY FEATURES IDENTIFIED INCLUDE MOVABLE
SPACE DIVIDERS, EITHER STORAGE UNITS OR TEACHING PANELS, WHICH
COULD BE REARRANGED FOR DIFFERENT INSTRUCTION LAYOUTS.
VERSATILITY IS INCLUDED IN THE AUDITORIUM DESIGN WHICH
INCORPORATES THE BAND ROOM AND ASSEMBLY ROOM, AND USING FOLDING
PARTITIONS, PERMITS A NUMBER OF STAGE AND SEATING CONFIGURATIONS.
THE AUDITORIUM ALSO FEATURES A CIRCULAR DOMED CONSTRUCTION WHICH
HAS ACOUSTIC, ECONOMIC, AND STRUCTURAL ADVANTAGES. SPECIFIC
ATTENTION IS GIVEN TO (1) STORAGE LIGHTING, (2) AUDITORIUM
SEATING, (3) DOORLESS CLASSROOMS, AND (4) UTILITIES FLEXIBILITY.
(DM)
RELATIONSHIP OF COST TO THE GEOMETRY OF A BUILDING

BY- ROWLETT, JOHN M. AND BULLOCK, THOMAS A.
CADELL, ROWLETT, SCOTT AND ASSOCIATES ARCHITECTS-ENGINEERS
BRYAN, TEXAS

IN- , RESEARCH REPORT, 5

006 PAGES

DESCRIPTORS- *BUILDING DESIGN, *CONSTRUCTION COSTS, *SCHOOL
DESIGN, ARCHITECTURE, BUILDINGS, DESIGN, SCHOOL BUILDINGS, SCHOOL
CONSTRUCTION

A SIMPLE BUILDING WITH A MINIMUM NUMBER OF INSIDE AND
OUTSIDE CORNERS GIVES THE MAXIMUM AMOUNT OF QUALITY TEACHING
SPACE FOR EACH BUILDING DOLLAR. THIS CONCLUSION IS BASED ON ONE
ARCHITECTURAL FIRM'S COMPARISON OF TWO SIMILAR SCHOOLS, ONE OF
WHICH HAD A MORE COMPLEX PLAN. A COMPARISON OF COSTS, AREAS
PERIMETERS, VOLUMES, NUMBER OF CORNERS, AND NUMBER OF ROOFS IS
GIVEN. (JT)
BARRIERS AND BREAKTHROUGHS

BY- CAUDILL, WILLIAM W. AND BULLOCK, THOMAS A.
CAUDILL, ROWLETT, SCOTT AND ASSOCIATES ARCHITECTS-ENGINEERS
BRYAN, TEXAS

IN- RESEARCH REPORT, 9
009 PAGES

DESCRIPTORS- *BUILDING DESIGN, *PHYSICAL FACILITIES, *SCHOOL
DESIGN, CLASSROOM FURNITURE, CONSTRUCTION COSTS, EDUCATIONAL
EQUIPMENT, LIGHTING, PREFABRICATION, SCHOOL ARCHITECTURE, SCHOOL
SIZE

THERE ARE MANY BARRIERS TO MORE EFFECTIVE SCHOOL
ARCHITECTURE SUCH AS (1) ARCHITECTURAL AND EDUCATIONAL PREJUDICE,
(2) OBSOLETE CODES, (3) BUILDING COMPLEXITY, AND (4) STATIC
THINKING. HOWEVER, THERE HAVE BEEN MANY DEVELOPMENTS IN (1) GROUP
PLANNING, (2) LEARNING WALLS AND SPACE DIVIDERS, (3) STUDENT
CENTERS, (4) LANDSCAPING, AND (5) HUMANISTIC ARCHITECTURE WHICH
TEND TO OFFSET THESE BARRIERS. (JT)
The Space Stage, Fad or Future

By- De Chaine, Faber

Published-May 66
In- American School Board Journal, May 1966

7 Pages


Dissatisfaction with the proscenium arch theatre, the need for economy in publicly-financed structures, and the advantages of intimate theatre, have led to the development of the space stage, which projects into the auditorium and is surrounded on three sides by seating. The space stage concept is used in this example to provide a performing arts facility in conjunction with a new campus high school. The solution contains a 400 seat theater with two 200-seat auditoriums separated by movable panels, designed so that classes could be held in the two smaller auditoriums. Design of the seating includes consideration of—(1) aisle and seating orientation, (2) control of stage lighting, (3) visual angles, and (4) acoustics. The treatment of the stage considers—(1) absorbance, (2) reflection, (3) flexibility, and (4) speaker placement. Technical facilities include—(1) a side track system for scenery, (2) rolling towers for stage work, and (3) a wall shop. Graphics include photographs of the theatre and backstage area, and diagrams of the plan and elevation. This article appeared in the May, 1966, issue of the American School Board Journal. Copies may be obtained by writing the Editor, American School Board Journal, Bruce Publishing Co., 400 N. Broadway, Milwaukee, Wisconsin.
STEPS TOWARD GOOD FOOD SERVICE

BY- SUCDARTH, RAY

PUBLISHED-MAY 66
IN- AMERICAN SCHOOL AND UNIVERSITY, MAY 66

006 PAGES


THIS REPORT DISCUSSES THE EFFICIENCY OF FOOD SERVICE ACHIEVED THROUGH MECHANIZATION AND IMPROVED HANDLING TECHNIQUES. KITCHENS SHOULD BE PLANNED IN TERMS OF THE NUMBER OF CHILDREN TO BE FED NOW AND IN THE FUTURE. SCHOOL KITCHENS CAN PROVIDE MEALS AT LOWER COSTS TO THE PUPIL THAN MOST VENDING MACHINES. FOOD SERVICE OPERATING COSTS CAN BECOME EXCESSIVE THROUGH OVER-STAFFING, POOR RECORD KEEPING, POOR BUYING PRACTICES AND LACK OF SKILLED LABOR, HAPHAZARD MENU PLANNING, INADEQUATE USE OF EQUIPMENT AND IMPROPER INVENTORY PLANNING. THE USE OF ELECTRIC CUTTERS, MIXERS, CONVECTION OVENS AND OTHER MECHANICAL DEVICES REDUCE COSTS. TIMING, LOCAL BUYING, AND STOCKPILING GOVERNMENT DONATED COMMODITIES ALSO AFFECT COSTS.
S.I.U. SUPER COMPLEX FOR THE COMMUNICATIONS ARTS

PUBLISHED-MAY 66
IN- AMERICAN SCHOOL AND UNIVERSITY, MAY, 66, PP. 104-5

002 PAGES


THIS ARTICLE REPORTS THE PLAN AT SOUTHERN ILLINOIS UNIVERSITY FOR A COMPLEX CONTAINING FIVE COMMUNICATION SCHOOLS--SPEECH AND SPEECH CORRECTION, THEATER, RADIO AND TELEVISION, PRINTING AND PHOTOGRAPHY, AND JOURNALISM FEATURING A 5,000 SEAT AUDITORIUM, CIVIL DEFENSE HEADQUARTERS, AND A MULTI-UNIT CENTRAL, CHILL WATER SUPPLY SYSTEM FOR AIR CONDITIONING. BASED UPON THE RESULTS OF IDEAL USE REQUESTS FROM FACULTY AND COMPARATIVE ON-SITE DATA FROM OTHER CAMPUSES, THE 700,000 SQUARE FOOT COMPLEX WILL BE CONSTRUCTED IN THREE STAGES, THE FIRST OF WHICH HAS BEEN COMPLETED. TOTAL COST IS ABOUT $20 MILLION. A FLOOR PLAN AND PHOTOGRAPH ACCOMPANY THE ARTICLE. THIS DOCUMENT APPEARED IN THE AMERICAN SCHOOL AND UNIVERSITY MAGAZINE, NEW YORK, NEW YORK. (JP)
CONSTRUCTING SCHOOL BUILDINGS WITH MATERIALS THAT WILL MINIMIZE FUTURE MAINTENANCE

BY ECKERT, A. W.

PUBLISHED-OCT53
IN- PROCEEDINGS, THE ASSOCIATION OF SCHOOL BUSINESS OFFICIALS OF THE UNITED STATES AND CANADA, OCT. 53

004 PAGES


MAINTENANCE PROBLEMS ARE DISCUSSED IN TERMS OF SCHOOL BUILDING CONSTRUCTION AND ECONOMICS. BUILDING MATERIALS AND INHERENT PROBLEMS EXPANDED ON ARE-(1) FLOORS, (2) WALLS, (3) ROOF OVERHANG, (4) DOORS, (5) WINDOWS, (6) LIGHT FIXTURES, AND (7) MECHANICAL SYSTEMS. QUALIFIED CUSTODIAL PERSONNEL IS THE KEY TO KEEPING A SCHOOL PLANT OPERATING SMOOTHLY. (RK)
AN ANALYSIS OF INSTALLATION AND MAINTENANCE COSTS OF CARPET, TILE, AND TERRAZZO IN A WIDE VARIETY OF COMMERCIAL INSTALLATIONS IS PRESENTED. OVER 400,000 SQUARE FEET OF CARPETED FLOORS WERE EXAMINED AND EVALUATED AS WELL AS OVER 1,000,000 SQUARE FEET OF VARIOUS KINDS OF NON-CARPETED FLOORS. THIS STUDY GIVES PROSPECTIVE COMMERCIAL FLOOR COVERING BUYERS COMPLETE AND OBJECTIVE COMPARATIVE 'USE COST' DATA. 'USE COST' IS DETERMINED BY THREE IMPORTANT POINTS OF EVALUATION WHICH ARE COVERED IN THIS BOOKLET THROUGH THE USE OF CHARTS. AMORTIZED INSTALLATION COSTS CF CARPET ARE ON THE AVERAGE HIGHER THAN ON NON-CARPETED FLOORS. MAINTENANCE COSTS, HOWEVER, ARE MUCH LOWER ON CARPETED FLOORS. TOTAL 'USE COSTS' VARY FROM 40.8 PER CENT TO 47.6 PER CENT LESS THAN FOR NON-CARPETED FLOORS. A TWENTY YEAR COST PICTURE OF CARPET VERSUS VINYL ASBESTOS TILE SHOWS A SAVINGS OF $2,769.60 IN 1,000 SQUARE FEET. A DAILY RATE OF 9.3 MINUTES OF MAINTENANCE MANPOWER PER THOUSAND FEET FOR CARPETING COMPARES FAVORABLY TO 30.4 MINUTES FOR VINYL ASBESTOS TILE, 28.1 MINUTES FOR VINYL, 34.4 MINUTES FOR ASPHALT, AND 27.0 MINUTES FOR TERRAZZO.
THIS REPORT INCLUDES A DISCUSSION OF THE CAUSES OF DISCREPANCIES IN PRICING AND BIDDING OF SCHOOL MATERIALS. VARIATION IN PRICES ON THE SAME TYPE OF ITEM MAY BE CAUSED BY DIFFERENCES IN QUALITY, SPECIFICATIONS, PACKAGING IN BULK OR SINGLE UNITS AND SERVICES PROVIDED BY THE VENDOR. OTHER FACTORS IN COST VARIATION CAN BE ATTRIBUTED TO QUANTITY OF MATERIAL ORDERED, SIZE OF TOTAL OF ALL MATERIALS ORDERED, QUANTITY OF MATERIALS HAVING THE SAME SIZE, COLOR OR GRADE, AND THE DISTRIBUTION OF THE MATERIALS WHEN THEY ARE DELIVERED. THE REPORT ALSO DISCUSSES VENDOR RELIABILITY IN TERMS OF MAKING ADJUSTMENTS OR REPLACEMENTS WITH MINIMAL CONFUSION, KEEPING THE BUYER UP-TO-DATE ON MATERIALS AND THE MARKET, AND CARRYING COMPLETE STOCK OF MATERIALS IN A GIVEN LINE.
COMPACT SCHOOL AND SAVINGS

BY- BAIR, W. G.
AMERICAN SCHOOL BOARD JOURNAL, MILWAUKEE, WISCONSIN

PUBLISHED-MAY 66
IN- AMERICAN SCHOOL BOARD JOURNAL, MAY 66, PP. 32-33

2 PAGES


A REVIEW OF THE CRITERIA FOR CONSIDERING THE USE OF A TOTAL ENERGY SYSTEM WITHIN A SCHOOL BUILDING STATES THE WINDOWLESS, COMPACT SCHOOL OFFERS MORE EFFICIENT SPACE UTILIZATION WITH LESS AREA REQUIRED FOR GIVEN STUDENT POPULATION AND LOWER OPERATION COSTS. THE AUTHOR RECOMMENDS THAT THESE BUILDINGS BE WINDOWLESS TO REDUCE HEAT COSTS. HOWEVER, AT THE SAME TIME IT IS POINTED OUT THAT WINDOWLESS STRUCTURES REQUIRE INCREASED LIGHTING LEVELS, AIR CONDITIONING AND AIR TREATMENT. IT IS RECOMMENDED AT THIS POINT THAT SCHOOL PLANNERS SHOULD SEEK THE ADVICE OF A CONSULTANT ENGINEER TO ASSESS THE FEASIBILITY OF INSTALLING A TOTAL ENERGY UNIT. ANNUAL COSTS OF COMMERCIAL ENERGY SHOULD BE COMPARED WITH OPERATING AND MAINTENANCE OF THE TOTAL ENERGY SYSTEM. SHOULD THE PLANNERS FAVOR THE TOTAL ENERGY UNIT, THEY SHOULD ALSO CONSIDER THE PURCHASE OF BACK-UP UNITS TO OPERATE IN THE EVENT OF A POWER FAILURE OF THE PRIMARY UNIT. THIS ARTICLE APPEARED IN THE MAY, 1966 ISSUE OF AMERICAN SCHOOL BOARD JOURNAL. COPIES MAY BE OBTAINED FROM THE EDITOR, BRUCE PUBLISHING CO., 400 N. BROADWAY, MILWAUKEE, WISCONSIN 53211. (GM)
DEVELOPING A PHYSICAL PLANT FOR ENGINEERING TECHNOLOGY

BY - MCCLURE, H. L.
FLORIDA STATE DEPARTMENT OF EDUCATION, TALLAHASSEE

PUBLISHED - JAN64
IN - PROCEEDINGS, CONFERENCE ON JUNIOR COLLEGE FACILITIES, TAMPA, JANUARY 23-25, 1964, VOL. 2

004 PAGES


WITH A LIMITED BUILDING BUDGET OF TWO MILLION DOLLARS, SOUTHERN TECHNICAL INSTITUTE WAS ABLE TO CONSTRUCT A PERMANENT PHYSICAL PLANT CAPABLE OF HANDLING PRESENT AND FUTURE ENROLLMENTS. THE PROCEDURES TAKEN AND THE RESULTING CAMPUS FACILITIES ARE BRIEFLY OUTLINED, AND SOME GENERAL PLANNING SUGGESTIONS ADVANCED BY THE AUTHOR. MANY OF THE COST-REDUCTION PROCEDURES ARE UNIQUE IN THEIR DEVIATION FROM ACCEPTED STATE POLICIES. FOR INSTANCE, S.T.I. DEPARTED FROM THE ESTABLISHED POLICY OF REQUIRING A "LOCK AND KEY" JOB AND ALLOCATED ALMOST THE TOTAL BUDGET FOR CONSTRUCTION AND ONLY A SMALL PORTION FOR EQUIPMENT. TO PROVIDE EQUIPMENT, MANY OF THE FURNITURE ITEMS WERE BUILT BY SCHOOL CARPENTERS AND THEN INSTALLED BY THE FACULTY AND STAFF. THE RESULTANT PHYSICAL PLANT PROVIDED SOME UNIQUE FEATURES WHICH ARE OUTLINED AND INCLUDE SUCH ITEMS AS HAVING ALL THE BUILDINGS CONNECTED BY COVERED WALKWAYS. FIVE GENERAL SUGGESTIONS ARE GIVEN BY THE AUTHOR WHICH MAY HELP PLANNERS PROVIDE SIMILAR FEATURES ON LIMITED BUDGETS. IN EVALUATING THE RESULTS IN OPERATION, IT WAS EVIDENT THAT CLOSE COOPERATION AND COORDINATION OF DEPARTMENTAL AND ARCHITECTURAL PERSONNEL COULD PROVIDE AN EFFECTIVE AND UNIQUE FACILITY ON A LIMITED BUDGET. (BH)
WHY THE SCHOOL DISTRICT SHOULD BID INSURANCE

BY- GRAYSON, ERNEST C.

ASSOCIATION OF SCHOOL BUSINESS OFFICIALS, CHICAGO, ILLINOIS

PUBLISHED- 65

IN- PROCEEDINGS, ASSOCIATION OF SCHOOL BUSINESS OFFICIALS OF THE UNITED STATES AND CANADA, 50TH ANNUAL MEETING AND EDUCATIONAL EXHIBIT, SAN FRANCISCO, CALIFORNIA, OCTOBER 17-22, 1964

CO8 PAGES


THIS IS A STATEMENT OF THE ADVANTAGES OF PLACING SCHOOL DISTRICT INSURANCE ON A SINGLE COVERAGE BID BASIS. PRIMARY ADVANTAGES ARE--CREATING GOOD RELATIONSHIPS WITH INSURANCE REPRESENTATIVES, CREATING PUBLIC CONFIDENCE IN HANDLING THE SCHOOL INSURANCE PROGRAM, AND SAVING THE DISTRICT MONEY THROUGH COMPETITIVE BIDDING. INSURANCE COVERAGE BY ONE COMPANY IS DEEMED ON THE BASIS OF PLOT PLANS OF ALL SCHOOL LOCATIONS, OVERALL SERVICE, DESCRIPTIVE INFORMATION ON ALL SCHOOL LOCATIONS, DESCRIPTIVE INFORMATION ON ALL SCHOOLS, ENGINEERING SERVICE ON NEW BUILDINGS, ANALYSIS OF RATES ON BUILDINGS, RECOMMENDATIONS FOR ELIMINATION OF RATING PENALTIES AND ONE POLICY INSTEAD OF MANY. PROCEDURES FOR COMPANIES TO SUBMIT BIDS ARE DISCUSSED. FORMAL CONTRACT BIDS ARE PREFERRED TO VERBAL OR LETTER BIDS, HOWEVER SEALED BIDS ARE DESIRABLE WHERE COMPLETE SPECIFICATIONS ARE STIPULATED. NEGOTIATIONS IN BIDDING MAY BE ADVANTAGEOUS WHERE SPECIFICATIONS CANNOT BE PREDETERMINED. IT IS SUGGESTED THAT BIDDING PROCEDURES BE USED IN SECURING ALL TYPES OF INSURANCE FOR THE SCHOOL DISTRICT.
BIDDING INSURANCE

BY- SCHAERER, ROBERT W.
ASSOCIATION OF SCHOOL BUSINESS OFFICIALS, CHICAGO, ILLINOIS

PUBLICED- 65
IN- PROCEEDINGS, ASSOCIATION OF SCHOOL BUSINESS OFFICIALS OF THE UNITED STATES AND CANADA, 50TH ANNUAL MEETING AND EDUCATIONAL EXHIBIT, SAN FRANCISCO, CALIFORNIA, OCTOBER 17-22, 1964

012 PAGES

DESCRIPTORS- *COSTS, *INSURANCE, *MANAGEMENT, MONEY MANAGEMENT, SCHOOL INSURANCE

THIS REPORT IS A PRESENTATION OF CRITERIA FOR PURCHASING SCHOOL INSURANCE ON A BID BASIS. EVALUATIVE FACTORS ARE OUTLINED FOR SITUATIONS IN WHICH THE BIDDING PROCEDURE MAY OR MAY NOT BE FEASIBLE. SOME ADVANTAGES TO PURCHASING INSURANCE ON A BID BASIS ARE--BETTER POLICY SERVICE, LOWER COSTS, BROADER COVERAGE, AND STRENGTHENED PUBLIC RELATIONS. TABLES FOR BID TABULATION AND A LIST OF BOOKS ON INSURANCE COMPANY RATINGS ARE PRESENTED.
THE CRITICAL-PATH METHOD OF CONSTRUCTION CONTROL

BY: DCMBROW, RODGER T. AND MAUCHLY, JOHN
NATIONAL COUNCIL ON SCHOOLHOUSE CONSTRUCTION, EAST LANSING,
MICHIGAN

PUBLISHED-OCT63
IN- PROCEEDINGS OF THE NCSC 40TH ANNUAL MEETING, PRINCETON, NEW
JERSEY, OCTOBER 7-10, 1963

009 PAGES

DESCRIPTORS- *COMPARATIVE ANALYSIS, *MANAGEMENT, *NETWORKS,
*SCHEDULING, *SCHOOL CONSTRUCTION, COMPUTERS, CONSTRUCTION COSTS,
SYSTEMS ANALYSIS, TIME

THIS DISCUSSION PRESENTS A DEFINITION AND BRIEF DESCRIPTION
OF THE CRITICAL-PATH METHOD AS APPLIED TO BUILDING CONSTRUCTION.
INTRODUCING REMARKS CONSIDER THE MOST PERTINENT QUESTIONS
PERTAINING TO CPM AND THE NEEDS ASSOCIATED WITH MINIMIZING TIME
AND COST ON CONSTRUCTION PROJECTS. SPECIFIC DISCUSSION
INCLUDES-(1) ADVANTAGES OF NETWORK TECHNIQUES, (2) A COMPARISON
OF BAR CHARTS AND CPM, (3) THE OPERATION OF CPM, (4) WHEN CPM MAY
BE USED, AND (5) A SUMMARY OF ADVANTAGES TO THE OWNER, ARCHITECT,
AND CONTRACTOR. SPECIFIC ASPECTS OF CPM ARE-(1) ACTIVITIES, (2)
TIME DURATION, (3) ACTIVITY COST, (4) MANPOWER ASSIGNED, (5)
FLOAT TIME, (6) CRITICAL ACTIVITIES, (7) COMPLETION DATE, AND (8)
COMPUTER PRINTOUT. THIS ARTICLE IS PUBLISHED IN THE PROCEEDINGS
OF THE NCSC, 40TH ANNUAL MEETING, PRINCETON, NEW JERSEY, OCTOBER
7-10, 1963. ADDITIONAL COPIES OF THE PROCEEDINGS MAY BE OBTAINED
FOR $2.5C FROM THE SECRETARY, COUNCIL ON EDUCATIONAL FACILITY
PLANNERS, OHIO STATE UNIVERSITY, COLUMBUS, OHIO. (MM)
CURRENT TRENDS IN SCHOOL FACILITIES

SCHOOL MANAGEMENT INC., GREENWICH, CONNECTICUT

In- ANNUAL SCHOOL BUILDING ISSUE, SCHOOL MANAGEMENT VOL 9 NO 7
JULY 1965 PP 108-141

034 PAGES
DESCRIP'TORS- *CONSTRUCTION COSTS, *EQUIPMENT, *SCHOOL FACILITIES.

THIS DOCUMENT PRESENTS GRAPHS AND CHARTS WHICH DEMONSTRATE CURRENT TRENDS IN THE COSTS, EQUIPMENT, AND MATERIALS IN THE CONSTRUCTION OF ELEMENTARY AND SECONDARY SCHOOLS FOR THE 1963, 1964 AND 1965 SCHOOL YEARS. BY SCHOOL SIZE AND STATE, THE DOCUMENT LISTS CLASSROOM COSTS, PER PUPIL COSTS AND THE SPECIALIZED FACILITIES WHICH ARE BEING PROVIDED IN AUDITORIUMS, CAFETERIAS, KITCHENS, GYMNASIUMS, LANGUAGE LABORATORIES, SCIENCE LABORATORIES, INDUSTRIAL ARTS, ART, HOME ECONOMICS, BUSINESS EDUCATION, LIBRARY, AND MUSIC. SPECIALIZED COSTS FOR EDUCATIONAL TELEVISION, AIR CONDITIONING, CARPETING, AND OPERABLE WALLS ARE INCLUDED.
GUIDELINE PROCEDURES AND CRITERIA FOR CAMPUS DEVELOPMENT AND CAPITAL OUTLAY PLANNING

BY- MASON, THOMAS R.
ASSOCIATION OF STATE INSTITUTIONS OF HIGHER EDUCATION IN COLORADO

PUBLISHED-APR64

476 PAGES


THE PURPOSE OF THIS MANUAL IS TO PROVIDE A BASIS FOR SYSTEMATICALLY PROGRAMMING THE REQUIREMENTS FOR PHYSICAL PLANT AND LAND TO ACCOMMODATE THE NEEDS OF AN INSTITUTION UNDER A SPECIFIED SET OF CIRCUMSTANCES. THE MANUAL IS ORGANIZED INTO SIX BROAD ELEMENTS- (1) ACTIVITY LEVELS OF ENROLLMENT, INSTRUCTIONAL WORKLOADS AND STAFF REQUIREMENTS, (2) PLANNING CRITERIA FOR UTILIZATION AND PHYSICAL FACTORS, (3) SPACE REQUIREMENTS NEEDED FOR ANY FUNCTIONAL CATEGORY OF THE INSTITUTION, (4) BUILDING OCCUPANCY PROGRAMS FOR THE DISTRIBUTION OF INSTITUTIONAL SPACE REQUIREMENTS AMONG PRESENT AND FUTURE BUILDINGS, (5) CAMPUS DEVELOPMENT AND LAND REQUIREMENTS FOR BUILDINGS, PARKING FACILITIES, AND ATHLETIC FACILITIES, AND (6) CAPITAL BUDGETING FOR MAINTENANCE AND ALTERATION OF PRESENT BUILDINGS, COSTS OF NEW CONSTRUCTION AND LAND ACQUISITION. WORKSHEETS ARE PROVIDED FOR A THOROUGH COLLECTION OF DATA AND ANALYSIS IN THE ABOVE NOTED AREAS. (HH)
NEW CAMPUSES FOR OLD A CASE STUDY OF FOUR COLLEGES THAT MOVED

BY- ZISMAN, S. B. AND POWELL, CATHERINE
EDUCATIONAL FACILITIES LABORATORIES, NEW YORK, N. Y.

32 PAGES

THIS REPORT TREATS THE PROBLEMS INVOLVED IN MOVING FROM AN OLD CAMPUS AND CREATING A NEW CAMPUS. IT IS BASED ON THE EXPERIENCES OF FOUR COLLEGES WITH PARTICULAR EMPHASIS ON SKIDMORE COLLEGE IN SARATOGA SPRINGS, N.Y. WHICH HAD DECIDED TO MOVE. THE QUESTIONS DISCUSSED CENTER AROUND SUCH TOPICS AS THE REASON FOR MOVING, THE KIND OF NEW SITE, THE KIND OF NEW CAMPUS AND NEW PROGRAM, AND WHAT TO MOVE FIRST. PARTICULAR PROBLEMS STUDIED ARE TRANSPORTATION, DUPLICATION, CONVERSIONS, COSTS, INTERNAL ADJUSTMENTS AND EFFECT ON COMMUNITY. THE REPORT ADVISES THAT THE MASTER PLAN NEEDED FOR SUCH AN UNDERTAKING BE DEVELOPED BY AN OUTSIDE PLANNING AGENCY. THIS REPORT MAY BE OBTAINED FROM EDUCATIONAL FACILITIES LABORATORIES, 477 MADISON AVENUE, NEW YORK, NEW YORK, 10022. (HH)
THE RELATIONSHIP OF INITIAL COST AND MAINTENANCE COST IN
ELEMENTARY SCHOOL BUILDINGS

BY: ZIMMERMAN, WILLIAM J.
EDUCATIONAL FACILITIES LABORATORIES, INC., STANFORD, CALIFORNIA,
WESTERN REGIONAL CENTER

PUBLISHED-JUL60
IN- REPORT NUMBER 1

18 PAGES

DESCRIPTORS- *CONSTRUCTION COSTS, *COSTS, *MAINTENANCE,
*PLANNING, *SCHOOL PLANNING, SCHOOL MAINTENANCE

THIS REPORT IS A STATISTICAL ANALYSIS OF THE RELATIONSHIP
BETWEEN INITIAL SCHOOL CONSTRUCTION COSTS AND FUTURE MAINTENANCE
COSTS. WHILE THE STUDY IS RESTRICTED TO THE LOS ANGELES CITY
SCHOOL DISTRICT, THE RESULTS ARE TO SOME EXTENT GENERALIZABLE.
THE STUDY SHOWS AN INVERSE RELATIONSHIP IN THESE COSTS—WHERE
INITIAL CONSTRUCTION COSTS ARE LOW MAINTENANCE COSTS TEND TO BE
HIGH. FACTORS RELATED TO INITIAL COST ARE—WALL CONSTRUCTION IN
OFFICES AND CLASSROOMS, THE NUMBER OF BIDDERS FOR EACH BUILDING
AND ADDITION, THE YEAR OF THE SITE TOPOGRAPHY, AND TOTAL
NUMBER OF SQUARE FEET OF PERMANENT CONSTRUCTION IN A SINGLE BID.
THESE FACTORS TEND TO REDUCE THE DIFFERENCE BETWEEN THE TWO COSTS
AND COUNTERACT THE EFFECT ON FUTURE MAINTENANCE COST RESULTING
FROM MATERIAL USED IN CONSTRUCTION. TWO RELATIONSHIPS BETWEEN
THREE COSTS ARE SHOWN—THE LARGER THE PROPORTION OF CLASSROOMS IN
A BUILDING THE LOWER THE INITIAL AND MAINTENANCE COSTS, THE
LARGER THE PROPORTION OF THE SCHOOL BUILDING DEVOTED TO GROUP
ACTIVITY, THE HIGHER THE INITIAL COST BUT THE LOWER THE
MAINTENANCE COST. METHODOLOGY FOR THE STUDY, CHARTS AND
RECOMMENDATIONS ARE INCLUDED IN THE REPORT. THIS DOCUMENT IS
AVAILABLE FROM THE WESTERN REGIONAL CENTER, EDUCATIONAL
FACILITIES LABORATORIES, INC., SCHOOL OF EDUCATION, STANFORD
UNIVERSITY, STANFORD, CALIFORNIA. (GM)
FINANCING SCHOOL BUILDING CONSTRUCTION

BY- ROBINSON, RAYMUNDO W. AND SPEIDEL, HAROLD O.
PENNSYLVANIA STATE DEPARTMENT OF PUBLIC INSTRUCTION, HARRISBURG

PUBLISHED- 64
IN- SCHOOL EXECUTIVE SERIES NO. 5

010 PAGES

DESCRIPTORS- *CONSTRUCTION COSTS, *EDUCATIONAL FINANCE,
*FINANCIAL NEEDS, *SCHOOL CONSTRUCTION, BOND ISSUES, CONSTRUCTION
NEEDS, FINANCIAL SUPPORT, MUNICIPALITIES, STATE AIDS, AUTHORITY,
FINANCING

THIS PUBLICATION OUTLINES THE VARIOUS METHODS THAT MAY BE
EMPLOYED BY PENNSYLVANIA SCHOOL DISTRICTS TO FINANCE BUILDING
CONSTRUCTION. PAY-AS-YOU-GO IS CITED AS THE MOST ECONOMICAL WAY
SINCE FUNDS COME FROM CURRENT TAX RECEIPTS, TEMPORARY LOANS ARE
NEXT. SUCH LOANS ARE CONSIDERED TO BE FOR FIVE YEARS OR LESS.
ISSUANCE OF GENERAL OBLIGATION BONDS IS ANOTHER COMMON METHOD OF
FINANCING NEW CONSTRUCTION. STATUTORY LIMITATIONS PROVIDE
CONTROLS WHICH MUST BE OBSERVED. THE MOST COMMON METHOD OF
FINANCING CONSTRUCTION IS THROUGH USE OF A MUNICIPALITY
AUTHORITY. THIS IS A SEPARATE CORPORATE ENTITY WHICH BUILDS THE
BUILDING AND RENTS IT TO THE SCHOOL DISTRICT ON A LONG-TERM
LEASE. THE STATE PUBLIC BUILDING AUTHORITY CAN DO THE SAME THING
AS A MUNICIPALITY AUTHORITY. INTEREST RATES ARE OFTEN LOWER
THROUGH SUCH A BODY. PROVISIONS ARE MADE FOR STATE REIMBURSEMENT
ON APPROVED BUILDING PROJECTS.
RESULTS OF A STUDY BASED ON EXPERIMENTS CONDUCTED IN MULTISTORY FIREPROOF STRUCTURES OF PUBLIC HOUSING PROJECTS AND IN A MOCK-UP SIMULATING ALL CONDITIONS OF A FIREPROOF STRUCTURE. THE FINDINGS ARE BASED ON TESTS CONDUCTED DURING SEVERAL WINTER SEASONS, NONE OF WHICH DEVIATED MARKEDLY FROM A NORM IN NEW YORK CITY. RESULTS ARE--(1) A STRUCTURE WITH CONVENTIONAL CAVITY WALLS WITH SINGLE GLAZED SASH REQUIRES 2.3 TIMES AS MUCH ENERGY TO HEAT AS A STRUCTURE WITH POLYSTYRENE INSULATED CAVITY WALLS AND DOUBLE GLAZED SASH WITH THERMO-BARRIER FRAMES, (2) SAVINGS IN THE INITIAL CONSTRUCTION ARE ESTIMATED AT $10,150.00, AND (3) THE SAVINGS IN THE COST OF MAINTENANCE ARE INDICATED AT $15,531.00 PER ANNUM. INCLUDED IS A HISTORY OF THE EXPERIMENT ALONG WITH DRAWINGS AND CHARTS. (RK)
IN 1959 THE CONNECTICUT GENERAL ASSEMBLY PASSED LEGISLATION REQUIRING THAT THE STATE DEPARTMENT OF EDUCATION ESTABLISH A SCHOOL CONSTRUCTION SERVICE TO ASSIST COMMUNITIES IN ACHIEVING INCREASED ECONOMY IN THEIR SCHOOL BUILDING PROJECTS. IT FURTHER REQUIRES EACH PROJECT BE REVIEWED BY THE SERVICE FOR ECONOMY IN ORDER TO QUALIFY FOR STATE CONSTRUCTION GRANT. THIS FIRST BOOKLET RECOMMENDS PROCEDURES DESIGNED TO ELIMINATE WASTED EFFORT, LOST TIME, AND THE RESULTANT, HIDDEN BUT CONSIDERABLE COST. IT IS A MUST IN PROCEDURES WHICH COMMUNITIES SHOULD FOLLOW IF THEY WISH TO OBTAIN FINANCIAL ASSISTANCE UNDER THE CONNECTICUT SCHOOL BUILDING AID LAW. CHAPTERS ON SCHOOL BUILDING COMMITTEE, ALLOCATION OF RESPONSIBILITIES, EDUCATIONAL SPECIFICATIONS RECONSIDERED, SELECTING AN ARCHITECT, TIME FOR PLANNING, BUDGETING AND COST CONTROL, CONTRACT DOCUMENTS, BIDDING AND CONSTRUCTING, AND CONSTRUCTION PERIOD, ARE SHORT, CONCISE, AND USEFUL TO GROUPS AND OFFICIALS PLANNING SCHOOL FACILITIES. THE OTHER FOUR CHAPTERS ARE APROPOS ONLY TO CONNECTICUT AND OTHER STATE LAWS AND REGULATIONS.
MISSISSIPPI'S 300 MILLION DOLLAR SCHOOL CONSTRUCTION PROGRAM

BY- NAYLOR, T. H. JR. AND CAIN, G. J.
MISSISSIPPI STATE EDUCATIONAL FINANCE COMMISSION, JACKSON

PUBLISHED-JUL65

026 PAGES

DESCRIPTORS- *COSTS, *IMPROVEMENTS, *PLANNING, CONSTRUCTION COSTS, BUILDING IMPROVEMENT, PUBLIC SCHOOLS, SCHOOL PLANNING, SOUTHERN SCHOOLS

This report is a review of the assistance program from 1946 to the present for local school districts in Mississippi. School district program needs were determined by a citizen's council, a legislature study committee, an educational finance committee and a legislative report in public education. These groups examined existing school plant facilities and made recommendations in terms of projections of future needs. A table of allocations to school districts and a table of annual allocations are included in the report. A summary presents site specifications, facilities included, the reduction of the number of school districts, school population growth and school construction costs.
A basic comparison was made between two intermediate schools housing grades 5 through 8 in Saginaw, Michigan. Both schools were let to the same contractor on March 15, 1960, used the same types of structural, mechanical, and electrical systems, materials, and construction details but were different in geometric layout, were located on level sites with approximately the same soil condition, had exactly the same educational program and space requirements for 650 pupils. The difference, which prompted the experiment, was the site size. The centralized school site consisted of 17.5 acres, the decentralized school site, 32.1 acres. A chart of the breakdown of cost between the two schools is divided into three areas and 18 items—(1) cost data, (2) education data, and (3) geometry data. A site layout drawing is included also. The decentralized school cost 3.8 percent more—but the study group wished to wait a year or two for a evaluation by the superintendent and faculty of the educational performance. There is not conclusive evidence at this time that first cost savings should be the determining factor for planning future schools. Further evaluation may show that the small additional cost may buy a bargain in increased educational performance.
A COMPARISON OF FIRE INSURANCE COSTS OF WOOD, MASONRY, STEEL AND CONCRETE STRUCTURES SHOWS FIRE INSURANCE PREMIUMS ON WOOD STRUCTURES TEND TO BE HIGHER THAN PREMIUMS ON MASONRY, STEEL AND CONCRETE BUILDINGS, HOWEVER, THE INITIAL COST OF THE WOOD BUILDINGS IS LOWER. DATA SHOW THAT THE SAVINGS ACHIEVED IN THE INITIAL COST OF WOOD STRUCTURES OFFSET THE ADDITIONAL FIRE INSURANCE PREMIUM COST WHEN COMPUTED OVER AN EXTENDED PERIOD OF TIME. THE PUBLIC AND INSITUTIONAL PROPERTY PLAN WHICH OFFERS SCHOOL DISTRICTS A NUMBER OF BENEFITS, ONE OF WHICH IS A PREMIUM REDUCTION, IS CITED. COPIES OF THIS ARTICLE MAY BE OBTAINED BY WRITING THE EDITOR, WILLIAM C. BRUCE, BRUCE PUBLISHING COMPANY, 400 NORTH BROADWAY, MILWAUKEE, WISCONSIN 53211. (GM)
COMPONENTS FOR SCHOOL CONSTRUCTION IN THE MID-HUDSON REGION.---FINAL REPORT 3

RENSSELAER POLYTECHNIC INSTITUTE, TROY, NEW YORK, CENTER FOR ARCHITECTURAL RESEARCH

PUBLISHED-MAR66

027 PAGES


THE FINAL REPORT OF A THREE PART FEASIBILITY STUDY OF THE COMPONENT CONSTRUCTION SYSTEMS SAMPLED APPROPRIATED ASPECTS OF THE SCHOOL CONSTRUCTION CLIMATE IN NEW YORK STATE. IT SOUGHT TO DETERMINE THE APPROPRIATE ASPECTS OF THE SCHOOL CONSTRUCTION SYSTEM DEVELOPMENT PROCESS TO SCHOOL CONSTRUCTION IN THE MID-HUDSON VALLEY AND TO EXPLORE POSSIBILITIES FOR THE ACCOMPLISHMENT OF SUCH PROGRAMS. THIS COMPONENT APPROACH SEEKS TO ACHIEVE ECONOMIES BY STANDARDIZING CERTAIN UNITS OF CONSTRUCTION AND EQUIPMENT AND BY LARGE SCALE PURCHASING OF THESE COMPONENTS. THIS STUDY CONTAINS A SUMMARY OF THE EIGHT 'CLIMATE AREAS' THAT WERE INVESTIGATED AND CONCLUSIONS AS TO THE VARIOUS ASPECTS OF FEASIBILITY. (BD)
THE CARPETED LIBRARY

BY- GARRETT, JOE B.
AMERICAN CARPET INSTITUTE, NEW YORK, N. Y.

PUBLISHED-JUN64

007 PAGES

DESCRIPTORS- *ACOUSTICAL ENVIRONMENT, *CARPET, *COSTS,
*MAINTENANCE, *LIBRARIES, CONTROLLED ENVIRONMENT, PHYSICAL
ENVIRONMENT, SCHOOL ENVIRONMENT, SCHOOL MAINTENANCE

THIS REPORT IS A DISCUSSION OF THE ADVANTAGES OF CARPETED
FLOOR COVERINGS FOR LIBRARIES. THE TWO MAIN ADVANTAGES PRESENTED
FOR USING CARPETING ARE NOISE CONTROL AND LOW MAINTENANCE COSTS.
ACCORDING TO THE REPORT CARPET REDUCES FLOOR INSTIGATED OR IMPACT
NOISES WHILE BEING PSYCHOLOGICALLY DIGNIFYING AND CREATING USER
RESPECT AND PROPER BEHAVIOR PATTERNS. MAINTENANCE COSTS FOR
CARPET ARE LESS THAN FOR OTHER TYPES OF FLOOR COVERINGS BECAUSE
OTHER FLOOR COVERINGS GENERALLY REQUIRE EXTENSIVE SURFACE
PREPARATION. WHEN ALL ROOM SURFACES ARE CONSIDERED, THE INITIAL
COST OF CARPET IS LITTLE IF ANY MORE THAN OTHER FLOOR COVERINGS.
CARPETING CAN BE USED QUICKLY AND ECONOMICALLY AS A REPLACEMENT
FLOOR COVERING IN OLDER LIBRARIES FOR BOTH AESTHETIC AND UTILITY
PURPOSES. (GM)
MANUAL FOR SCHOOL BUILDING COMMISSIONS OF THE STATE OF DELAWARE

BY- GOUSHA, RICHARD P.

DELAWARE STATE DEPARTMENT OF PUBLIC INSTRUCTION, DOVER

PUBLISHED-JUN65

116 PAGES


THE MANUAL IS DESIGNED FOR LOCAL SCHOOL BUILDING COMMISSIONS RESPONSIBLE FOR THE MANAGEMENT OF A CONSTRUCTION PROGRAM. IT INCLUDED PROVISIONS OF DELAWARE STATE LAW AND RECOMMENDED PROCEDURES FOR THE PROGRAM. AREAS DISCUSSED INCLUDE--(1) FINANCING, (2) SCHOOL CONSTRUCTION FORMULA FOR SPACE ALLOWANCES, (3) PROPOSED SCHOOL BUILDING BUDGET, (4) PROCEDURES FOR SCHOOL BUILDING CONSTRUCTION, (5) A CHECKLIST FOR ACCOUNTING SYSTEM, (6) PURCHASE ORDER PROCEDURES, (7) INVOICE PROCEDURES, (8) BIDDING PROCEDURES, (9) FEDERAL PROGRAMS, AND (10) REVERSION OF SCHOOL CONSTRUCTION FUNDS. A GLOSSARY IS INCLUDED.
BASIC PLANNING PROCEDURES

NEVADA STATE DEPARTMENT OF EDUCATION, CARSON CITY

17 PAGES

DESCRIPTIONS: *BUILDINGS, *COSTS, *EDUCATIONAL SPECIFICATIONS, *PLANNING, SCHOOL PLANNING, ESTIMATED COSTS, SCHOOL BUILDINGS

THIS REPORT IS AN OUTLINE OF THE BASIC SCHOOL PLANT PLANNING PROCEDURE FOR THE STATE OF NEVADA. THE PROCEDURE ENTAILS THE USE OF AN EDUCATIONAL PLANNING CONSULTANT, STATEMENTS OF EDUCATIONAL AND SERVICE PROBLEMS TO BE SOLVED BY PROPOSED CONSTRUCTION, A SITE PLAN AND ARCHITECT SELECTION. ALSO INCLUDED IN THE OUTLINE OF PROCEDURES IS A TENTATIVE STATEMENT OF SPECIFICATIONS, TENTATIVE COST ESTIMATES AND MATRICES FOR CONDUCTING SPACE UTILIZATION SURVEYS.
SOLAR EFFECTS ON BUILDING DESIGN

BUILDING RESEARCH INSTITUTE, WASHINGTON, D. C.

PUBLISHED- 63

REPORT/SERIES NO.- PUB-1007

180 PAGES


A REPORT OF A PROGRAM HELD AS PART OF THE BUILDING RESEARCH INSTITUTE 1962 SPRING CONFERENCE ON THE SOLAR EFFECTS ON BUILDING DESIGN. TOPICS DISCUSSED ARE—(1) SOLAR ENERGY DATA APPLICABLE TO BUILDING DESIGN, (2) THERMAL EFFECTS OF SOLAR RADIATION ON MAN, (3) SOLAR EFFECTS ON ARCHITECTURE, (4) SOLAR EFFECTS ON BUILDING COSTS, (5) SELECTION OF GLASS AND SOLAR SHADING TO REDUCE COOLING DEMAND, (6) DESIGN OF WINDOWS, (7) DESIGN OF SKYLIGHTS, (8) DESIGN OF ELECTRIC ILLUMINATION, (9) WINDOW DESIGN IN EUROPE—A REVIEW OF RECENT LITERATURE, AND (10) SWEDISH PRACTICES IN WINDOW DESIGN. ALSO INCLUDED ARE OPEN FORUM DISCUSSIONS AND CONFERENCE SUMMARY. THE CONFERENCE ATTEMPTED TO DEFINE VARIOUS PROBLEMS AND REVIEW SOME OF THE MEANS AT HAND TO SOLVE THEM. TWO OF THE EFFECTS OF SOLAR ENERGY ON BUILDING DESIGN WERE DISCUSSED—LIGHT AND HEAT. THE UNDESIRABLE SOLAR EFFECTS OF AIR-CONDITIONED COMMERCIAL BUILDINGS WERE MAINLY DEALT WITH. SEVERAL SPECIFIC NEEDS HAVE BEEN PROMINENTLY INDICATED BY THIS CONFERENCE—(1) THE NEED FOR BETTER COMMUNICATION REGARDING THIS SUBJECT AND THE NEED FOR MORE GENERALLY AVAILABLE INFORMATION, PRESENTED IN TERMS READILY UNDERSTOOD BY THE AVERAGE ARCHITECT, WHOSE RESPONSIBILITY IT IS TO TRANSLATE THESE PRINCIPLES INTO BUILDING DESIGN, (2) THE NEED FOR MUCH MORE OBJECTIVE AND UNPREJUDICED RESEARCH IN THIS FIELD, AND (3) THE NEED FOR MORE BRI CONFERENCES ON THIS SUBJECT. CHARTS AND DIAGRAMS ACCOMPANY THE TEST. COPIES OF THIS PUBLICATION MAY ALSO BE OBTAINED FROM THE BUILDING RESEARCH INSTITUTE, 1725 DESALES STREET, N. W., WASHINGTON, D. C. 20036. PRICE $10.00. (RK)
SCIENCE FACILITIES (A CLASSIFIED LIST OF LITERATURE RELATED TO DESIGN, CONSTRUCTION AND OTHER ARCHITECTURAL MATTERS)

NATIONAL SCIENCE FOUNDATION, WASHINGTON, D.C., DIVISION OF INSTITUTIONAL PROGRAMS

PUBLISHED-- 65

018 PAGES

DESCRIPTORS- *BIBLIOGRAPHIES, *CASE STUDIES (FACILITIES), *RESEARCH REVIEWS (PUBLICATIONS), *RESOURCE MATERIALS, *SCIENCE FACILITIES, BUILDING DESIGN, CONSTRUCTION COSTS, DESIGN NEEDS, LABORATORIES

A CLASSIFIED LIST OF ARTICLES, PAPERS AND CATALOGS IN THE SCIENCE FACILITIES COLLECTION OF THE ARCHITECTURAL SERVICES STAFF OF THE NATIONAL SCIENCE FOUNDATION WHICH MAY BE USEFUL IN SEARCHING FOR PERTINENT LITERATURE ON PROBLEMS IN THE DESIGN OF SCIENCE FACILITIES. CITATIONS COVER SUCH AREAS AS GENERAL PLANNING, SPACE UTILIZATION AND COST STUDIES, BUILDING TYPE STUDIES, CONSTRUCTION DETAILS, DESIGN CRITERIA AND EQUIPMENT SPECIFICATIONS. (BH)
LONG RANGE CONSTRUCTION PROGRAM (UNIVERSITIES AND COLLEGES OF MONTANA)

BY- NELSON, EDWARD W.
MONTANA COMMISSION FOR HIGHER EDUCATION FACILITIES, HELENA

072 PAGES

DESCRIPTORS- *CONSTRUCTION PROGRAMS, *FACILITY EXPANSION, *HIGHER EDUCATION FACILITIES, *MASTER PLANS, CONSTRUCTION COSTS, ESTIMATED COSTS, FINANCIAL SUPPORT, PLANNING COMMISSIONS

This report is the proposed construction program for colleges and universities in Montana and is a result of the studies conducted for the Montana Commission for the Higher Education Facilities Act of 1963. Each institution is represented in a section of the report which includes the title of the facility, its construction priority, the cost estimate and the financing source. A brief, general description is given for the individual facilities and the expected time of occupancy. (BH)
SUMMARY OF ELECTRIC SERVICE COSTS FOR TOTALLY AIR CONDITIONED SCHOOLS PREPARED FOR HOUSTON INDEPENDENT SCHOOL DISTRICT, MAY 31, 1967

BY - WHITESIDES, M. M.
HOUSTON LIGHTING AND POWER COMPANY, TEXAS

PUBLISHED - MAY 67

057 PAGES


THIS REPORT IS A COMPILATION OF DATA ON ELECTRIC AIR CONDITIONING COSTS, OPERATIONS AND MAINTENANCE. AIR CONDITIONING UNITS ARE COMPARED IN TERMS OF ELECTRIC VERSUS NON-ELECTRIC, AUTOMATIC VERSUS OPERATED, AIR COOLED VERSUS WATER COOLED, RECIPROCATING VERSUS CENTRIFUGAL COMPRESSORS, SPACE AND NOISE, REHEAT, MAINTENANCE AND ORIGINAL COST. DATA ARE PRESENTED SHOWING COMPARATIVE ELECTRIC COSTS OF BEFORE AND AFTER AIR CONDITIONING SERVICE INSTALLATIONS AND A TABULATION OF SERVICE COSTS FOR TOTALLY AIR CONDITIONED SCHOOLS. (GM)
WHY A MASTER PLAN (THE AREA COMMUNITY COLLEGE)

PERKINS AND WILL PARTNERSHIP, ARCHITECTS, WASHINGTON, D. C.

066 PAGES

CSCRIPTORS- *CAMPUS PLANNING, *COMMUNITY COLLEGES, *GEOGRAPHIC LOCATION, *MASTER PLANS, COLLEGE BUILDINGS, CONSTRUCTION COSTS, EDUCATIONAL PROGRAMS, SITE ANALYSIS,

THIS OVERVIEW OF THE REASONS FOR THE MASTER PLANNING OF COMMUNITY COLLEGES IF ACCOMPANYED BY MANY CHARTS, SKETCHES AND PHOTOGRAPHS. DIFFERING TYPES OF BUILDINGS, SITES, AND PROGRAMS, AND THE ENSUING COSTS ARE REVIEWED. A TYPICAL SCHEDULE SHOWING FACILITY DEVELOPMENT AND FINANCING ON A NEW CAMPUS IS INCLUDED. FIVE CASE STUDIES AND TWO PROJECTED PLANS ARE OFFERED TO SHOW VARIANCE OF PROGRAM, SITE AND DESIGN SOLUTIONS IN RURAL, SEMI-RURAL, SUBURBAN, URBAN-MIDDLE CLASS AND CITY LOCATIONS. A PROCEDURE FOR MASTER PLANNING IS OUTLINED. (JP)
A description of the relationship between school modernization and building age, with particular attention to renovation rather than new construction to meet changing educational needs, is given. The newsletter emphasizes educational adequacy as being more important than building age, and describes renovation techniques which will facilitate this approach. A major consideration is in teaching needs and educational methods as criteria in addition to lighting and climate control which serve physiological needs. Other items include decision making processes, costs, flexibility, and teacher education. Clarification of the term school modernization is also included. (MM)
A set of educational specifications drafted by the First California Commission on School Construction Systems gives information on bidding procedures, a description of the current construction program, procedures for submitting a proposal, data and conditions related to the development phase of the project, component contracts, and general conditions and procedures. Performance specifications are outlined in terms of structure, heating, ventilation, cooling, lighting-ceiling and interior partitions. Also included are materials—cost matrices, construction timetables and addenda to the specifications. (GM)
PLANNING AND DEVELOPMENT PROCEDURES LEADING TO THE CONSTRUCTION OF EDUCATIONAL FACILITIES

BY: CONDON, JOHN T.
ARIZONA STATE BOARD OF DIRECTORS FOR JUNIOR COLLEGES

PUBLISHED: JUL67

034 PAGES


THE PLANNING AND DEVELOPMENT PROCEDURES OUTLINED ARE FOR USE BY COLLEGE DISTRICT OFFICIALS AND PERSONNEL, ARCHITECTS, ENGINEERS, PLANNING CONSULTANTS, AND STATE OFFICERS IN CONNECTION WITH THE CONSTRUCTION AND FINANCING OF JUNIOR COLLEGE EDUCATIONAL FACILITIES. THE PURPOSE OF THE PROCEDURES IS TO EXPEDITE THE PLANNING PROCESS AND TO PROVIDE A MEDIUM FOR INTELLIGENT, ORGANIZED COMMUNICATION AMONG ALL CONCERNED. THE SEQUENTIAL STEPS IN THE METHOD ARE: (1) STATEMENT OF PROJECT NEED, (2) SELECTION OF ARCHITECT, (3) REQUEST FOR FUNDS, (4) EDUCATIONAL SPECIFICATIONS, (5) SCHEMATIC DESIGN PHASE, (6) DETAILED SPECIFICATIONS, (7) DESIGN DEVELOPMENT, (8) FINANCIAL PROGRAM, (9) CONSTRUCTION DOCUMENT PHASE, (10) BIDDING PROCEDURES, (11) RECORDS REQUIREMENTS, (12) CONSTRUCTION ACCOUNTS AND, (13) MINOR BUILDING PROJECTS. FORMS ARE INCLUDED FOR COLLECTING DATA NEEDED IN IMPLEMENTING OF THE STEPS. (HH)

END

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