ABSTRACT
          A selected reference list is presented of 94 source
publications of interest to architects contemplating employing
systematic methods in the execution of professional services
involving planning, programing, and design. The publication is
divided into four major topical areas--(1) architectural design, (2)
design (general), (3) decision making, and (4) planning. Each
citation is followed by a listing of descriptors which are selected
to describe the subject elements of each document. (TC)

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SYSTEMATIC METHODS

IN

SCHOOL PLANNING, PROGRAMING, AND DESIGN

A Selected Bibliography

January 1970

INTRODUCTION

The following is a Selected Reference List
of source publications of interest to architects
contemplating employing systematic methods in the
execution of professional services involving
planning, programing, and design. The listing
has been prepared by the Educational Resources
Information Center (ERIC) Clearinghouse on Educa-
tional Facilities located at the University of
Wisconsin, Madison, Wisconsin, funded by the U. S.
Office of Education.

Each citation identified is followed by an
alphabetical listing of descriptors which were
selected to describe the subject elements of each
document. Major descriptors are the most impor-
tant descriptors assigned to a given document
and are identified by an asterisk. The descrip-
tors used throughout this bibliography are part
of the Thesaurus of ERIC Descriptors, which is
used for indexing, storing, and retrieving docu-
ments handled by the ERIC system.

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SYSTEMATIC METHODS

OF

ARCHITECTURAL DESIGN

(Architectural Programing; Architecture;
Building Design; Decision Making; Design;
Design Needs; Methods; Programing; School
Design; Systems Approach)

Alexander, Christopher, Sara Ishikawa, and

Murray Silverstein. A Pattern Language

Which Generates Multi-Service Centers.

Berkeley, Calif.: Berkeley Graphic

Arts, 1968. 238 pp.

*Architecture; *Building Design; *Lan-

guage; *Public Facilities; *Specifica-

tions; Organization; Physical Design

Needs; Problem Solving

Alexander, Christopher. "The Theory and

Invention of Form," Architectural

Record, 137 (April 1965), 177-186.

*Architectural Programing; *Design;

*Design Needs; *Methodology; *Theories;

Architecture; Decision Making; Organiza-

tion; Problem Sets; Systems Analysis;

Systems Approach

Alexander, C., V. M. King, S. Ishikawa, M.

Baker, and P. Hyslop. "Relational Com-

plexes in Architecture," Architectural

Record, 140 (September 1966), 185-190.

*Decision Making; *Design; *Facility
Requirements; *Problem Sets; *Relation-
ship; Architectural Programing; Inter-
action; Physical Design Needs; Psycho-
logical Design Needs; Systems Analysis

"Architecture and the Computer," in _Boston_
Architectural Center Conference Pro-
ceedings. Boston, Mass.: Boston Archi-
tectural Center, 1964. 60 pp.

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*Physical Environment; *Planning; Bib-
liographies; Computer Programs; Data
Processing; Design; Engineering Graphics

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National Cash Register Company, 4636
Fairmont Avenue, Bethesda, Maryland 20014.
1968. 46pp.

*Architectural Programing; *Design
Needs; *Facility Requirements; *School
Planning; *Senior High Schools; Co-
curricular Activities; Curriculum;
Decision Making; Educational Objectives;
Educational Philosophy; Educational
Specifications; Environmental Influ-
ences; Facility Guidelines; Systems
Analysis

Boyce, James R. "What Is the Systems Ap-
proach?" Progressive Architecture,
(November 1969), 118-212.

*Architecture; *Design; *Methods;
*Planning; *Systems Approach; Eval-
uation; Evolutionary Techniques; Feed-
back; Sequential Approach

Bryan, N. W. The Computer and the Building
Design Process. Washington, D. C.:
American Institute of Architects, 1967.
8 pp.

*Building Design; *Computers; *Data
Processing; *Information Processing;

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Computer Programs; Cybernetics; Design;

Electronic Data Processing; Programing

Campion, David. Computers in Architectural

Design. New York: Elsevier Publishing

Company, 1968. 320 pp.

*Architecture; *Computer Programing;

*Computers; *Design; *Methods; Biblio-

graphies; Scheduling; Statistical

Analysis; Techniques

Campion, David. "Design Simulation by Com-

puter," Architectural Review, 140

(December 1966), 460-462.

*Architectural Programing; *Building

Design; *Computer Programs; *Computers;

*Design Needs; Dining Facilities; Faci-

lity Guidelines; Facility Requirements;

Mathematic Models

Corkill, Philip A., and Robert F. Guenter.

"A Systematic Approach to Design,"

AIA Journal, (December 1968), 75-77.

*Architectural Education; *Architecture;
*Design; *Methods; *Systems Approach;
Architectural Programing; Problem Solv-
ing; Systems Analysis; Teaching Tech-
niques

Dawson, John W. "Use of Small Digital Com-
puters in Building Design," in New
Building Research, (Spring 1961).
Washington, D. C.: National Academy of
Sciences - National Research Council,
1961, 108-114.

*Building Design; *Computer Programs;
*Computers; Air Conditioning; Archi-
tecture; Construction Costs; Problem
Solving; Structural Building Systems

Evans, Benjamin H. "Architectural Program-
ing Practices," Building Research
(April/June 1969), 12-15.

*Architectural Programing; *Decision
Making; *Design Needs; *Problem Solv-
ing; *Program Design; Communication
(Thought Transfer); Data Analysis;

Data Collection; Evaluation; Objectives;
Research

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*Building Design; *Design Needs; *Systems
Analysis; Building Improvement; Communi-
cation Problems; Construction Costs;
Decision Making; Specialization

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*Techniques; Bibliographies; Communi-
cations; Evaluation; Information Seek-
ing; Information Storage; Methods;
Planning; Problems; Testing

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Green, Meg. Decision-Making Theory Applied
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Randolph-Macon Woman's College, Dept.
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*Architectural Programing; *Building
Design; *Dormitories; *Research Needs;
*Sociology; Decision Making; Informa-
tion Utilization; Role Theory

Hassid, Sami. "Systems of Judgement of
Architectural Design," in New Building
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sign; *Research; Bibliographies; Eval-
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Problems

Haviland, David S. The Activity/Space, A
Least Common Denominator for Architec-
tural Programming. Washington, D. C.:

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1967. 15 pp.

*Architectural Programing; *Communica-

tion Problems; *Information Processing;

*Needs; *Programing Problems; Activi-

ties; Computer Programs; Criteria;

Documentation; Space Utilization

Haviland, David S. The Computer and the

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York: Rensselaer Polytechnic Insti-

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*Architectural Education; *Building

Design; *Computers; *Graphic Arts;

*Information Processing; City Planning;

Communications; Construction Costs;

Engineering; Office Management; Pro-

graming; School Site; Technology

Horowitz, Harold. The Program's the Thing.

The New Architect-Practice. Washington,

D. C.: American Institute of Architects,

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*Criteria; *Design Needs; *Programing;
College Buildings; Controlled Environ-
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Processing; Interviews; Master Plans;
Role Theory; School Size; Site Analysis;
Spatial Relationship

Krauss, Richard. Design: A Case History.
Designer's Specifications for a Computer
System. An unpublished paper, 1967.
8 pp.

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Liebeskind, Morris. "Design and Construction
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struction; Information Processing; Mod-
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Milne, Murray A. "Architectural Applications
of Computer Based Network Analysis
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*Building Design; *Computers; *Networks;
*Objectives; *Systems Analysis; Decision
Making; Information Processing; Models

Pena, William M. "Organizing for Programming,"
<u>Building Research</u>, (April/June 1969),
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graphies; Communication (Thought Trans-
fer); Evaluation; Graphs; Information
Seeking

Richardson, Stephen. "The Value of a Program
to the Architect," <u>Building Research</u>,
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Seaton, Richard. "Research for Building Pro-
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1969), 36-39.

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*Objectives; *Research; *Systems Approach;
Data Collection; Methods; Standards

Van der Ryn, Sim, and Murray Silverstein.

<u>Dorms at Berkeley: An Environmental</u>

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*Dormitories; *Environmental Research;

*Furniture Arrangement; *Physical

Design Needs; *Psychological Design

Needs

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OF

DESIGN - (GENERAL)

(Decision Making; Design; Design Needs;

Evaluation; Human Engineering; Methodo-

logy; Methods; Systems Engineering)

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Alexander, Christopher. "Information and an
Organized Process of Design," New Buil-
ding Research, (Spring, 1961), 115-123.

*Classification; *Communications; *Design;
*Information Processing; *Information
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Methods; Models; Objectives; Personnel;
Research

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Harvard Press, 1964. 216 pp.

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ology; *Problem Solving; Design; Mathe-
matics; Organization; Performance Factors;
Physical Environment; Planning; Problem
Sets

Archer, Bruce. The Structure of the Design
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Bowen, Hugh M. "Rational Design 1: Human
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ogy; Systems Analysis; Systems Approach

Bowen, Hugh M. "Rational Design 2: Analy-
tic Methods in Human Engineering Studies,"
Industrial Design, 11 (March 1964),
38-45.

*Decision Making; *Design; *Human En-
gineering; *Systems Approach; Check
Lists; Evaluation; Methods; Operations
Research; Physical Design Needs; Tests

Eberhard, John P. "A Humanist Case for the
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City Planning; Feedback; Methodology;
Organization

Jones, J. Christopher. "Design Methods Com-
pared 1: Strategies," Design, 212
(August 1966), 32-35.

*Decision Making; *Design; *Methods;
*Networks; Evaluation Methods; Imagina-
tion; Logic; Synthesis; Systems Analysis

Jones, J. Christopher. "Design Methods Com-
pared 2: Tactics," Design, 212
(September, 1966), 46-52.

*Design; *Methods; *Problem Solving;
*Thought Process; Check Lists; Computer
Oriented Programs; Scientific Methodol-
ogy; Systems Analysis

Jones, J. Christopher, and D. G. Thornley
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New York: MacMillan Company, 1963.

*Decision Making; *Design; *Methodology;
*Problem Solving; Architectural Educa-
tion; City Planning; Communication
(Thought Transfer); Computers; Concept
Formation; Conferences; Creative
Thinking; Systems Approach; Systems
Concept

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SYSTEMATIC METHODS

OF

DECISION MAKING

(Cybernetics; Decision Making; Eval-

uation; Methods; Models; Operations

Research; Problem Solving; Systems

Analysis; Systems Approach; Theories)

Abendroth, W. W. "The Research and Decision-
    Making Process," in Shera, Jesse, et. al.
    <u>Documentation in Action</u>. New York:
    Reinhold, 1956. Pp. 42-53.

        *Decision Making; *Evaluation; *Research;
        *Techniques; Data; Information; Methods;
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Ackoff, Russell L. "The Development of Opera-
    tions Research as a Science," <u>Operations</u>
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        *Research; Design; Mathematics; Methods;
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Baumgartner, John Stanley. Project Management.
Homeword, Illinois: Richard D. Irwin,
Inc., 1963.

*Decision Making; *Management; *Methods;
*Performance Factors; *Planning; Admin-
istrative Policy; Critical Path Method;
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Group Instruction; Teamwork

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ler, 1968. 289 pp.

*Information; *Mathematics; *Science;
*Systems Concept; *Theories; Biblio-
graphies; Biology; Models; Organiza-
tion; Psychiatry; Psychology

Bross, Irwin D. J. Design for Decision.
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*Prediction; *Problem Solving; Cost
Effectiveness; Game Theory; Information
Theory; Logic; Mathematics; Scientific
Methodology

Churchman, C. W., and R. L. Ackoff. "An
Approximate Measure of Value," Opera-
tions Research, 2 (May 1954), 172-187.

*Decision Making; *Evaluation; *Objec-
tives; *Operations Research; *Problem
Solving; Methods; Problems

Cogswell, Arthur R. "Programming and a Com-
puter-Based Cost Analysis System,"
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*Computers; *Cost Effectiveness; *Per-
formance Criteria; *Programing; Archi-
tecture; Decision Making; Design; Systems
Approach

Cooper, Joseph D. The Art of Decision-Making.
Garden City, New York: Doubleday, 1961.

*Decision Making; *Goal Orientation;
*Organization; *Personality Assessments;
*Systems Approach; Check Lists; Indexing;
Objectives; Personal Values

Edwards, Ward. "The Theory of Decision
Making," Psychological Bulletin, 51
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*Decision Making; *Economics; *Mathe-
matics; *Psychology; *Statistical
Analysis; Bibliographies; Game Theory;
Risk; Theories

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Complete System Analysis: Computer Sim-
ulation and System Optimization. North
American Rockwell Corporation, 1968. 63 pp.

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*Systems Approach; Computer Programs;
Mathematics; Research

Heacock, Frank A. Graphic Methods for Solving
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*Charts; *Decision Making; *Geometry;
*Methods; Air Conditioning; Biblio-
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Hiller, Fredrick S., and Gerald J. Lieberman.
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San Francisco, Calif.: Holden-Day, Inc.,
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*Mathematics; *Operations Research;
*Theories; Critical Path Method; Game
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Hirshleifer, Jack. "The Bayesian Approach to
Statistical Decision and Exposition,"
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*Decision Making; *Economics; *Method;
*Problem Solving; Costs; Prediction;
Problems; Risk; Systems Approach;
Testing

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Sons, 1960.

*Decision Making; *Problem Solving;
*Programing; *Techniques; Methodology;
Problems

Johnsen, Erik. Studies in Multi-Objective
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*Decision Making; *Mathematics; *Models;
*Problem Solving; *Theories; Biblio-
graphies; Objectives; Problems; Rating
Scales; Systems Approach

Kaufmann, Arnold. The Science of Decision-
Making, An Introduction to Praxeology.
New York: McGraw-Hill, 1968. 256 pp.

*Decision Making; *Methods; *Scientific

Attitudes; Bibliographies; Charts; Com-

munications; Cybernetics; Experience;

Models; Simulation; Statistics

Lanzetta, John T. Uncertainty, Information

Search and Decision Making. Hanover,

New Hampshire: Dartmouth College,

Department of Psychology, 1968. 13 pp.

*Cost Effectiveness; *Decision Making;

*Information Processing; *Information

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Research

Lindley, D. V. "Dynamic Programming and

Decision Theory," Applied Statistics,

10 (1961), 39-51.

*Decision Making; *Mathematics; *Problem

Solving; *Programing; *Theories; Problems;

Techniques; Values

Lindsay, Franklin A. New Techniques for

Management Decision Making. New York:

McGraw-Hill, 1958.

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*Management; *Planning; *Problem Solving;

*Systems Analysis; *Techniques; Evalua-

tion; Game Theory; Information Theory;

Mathematics; Programing; Risk; Statistics

McMillan, Claude, and Richard F. Bonzalez.

Systems Analysis - A Computer Approach to

Decision Models. Homewood, Ill.: Richard

D. Irwin, Inc., 1968.

*Computer Programing; *Computers; *Decision

Making; *Systems Analysis; *Systems Concept;

Business; Mathematical Models; Methodology;

Planning; Problem Solving; Simulation

On the Decision Matrix and the Judgement Process:

A Developmental Decision Example. Santa

Monica, Calif.: Rand Corporation, 1969.

17 pp.

*Decision Making; *Management; *Planning;

*Systems Approach; Cost Effectiveness;

Mathematics; Methodology; Scheduling

Operations Research Group, Case Institute of

Technology, Cleveland, Ohio. A Comprehensive

Bibliography on Operations Research.
New York: John Wiley and Sons, 1958.
188 pp.

*Bibliographies; *Decision Making; *Op-
erations Research; *Problem Solving;
Mathematics; Methods; Organizations;
Techniques

Policy Analysis: A Theoretic Framework and
Some Basic Concepts. Santa Monica,
Calif.: Rand Corporation, 1969. 26 pp.

*Decision Making; *Leadership; *Planning;
*Theories; Management; Problem Solving;
Systems Analysis

Quinlan, John Ross. An Experience-Gathering,
Problem-Solving System. Ph. D. Thesis.
Seattle, Wash.: Washington University,
1968. 77 pp.

*Experience; *Mathematical Models; *Math-
ematics; *Problem Solving; Design; Methods;
Specifications

Ranking and Selection Methods for Capital

Investment Decisions in Private and

Public Sectors. Santa Monica, Calif.:

Rand Corporation, 1969. 46 pp.

*Cost Effectiveness; *Decision Making;

*Management; *Planning; Business;

Methodology; Rating Scales; Statistical

Analysis

Ronayne, Maurice F. "An Annotated Biblio-

graphy for the Systems Professional,"

Systems and Procedures Association,

(1962), 353.

*Bibliographies; *Management; *Planning;

*Systems Analysis; Data Processing;

Design; Evaluation Methods; Information

Processing; Research; Training

Schuchman, Abe. Scientific Decision Making

in Business. New York: Holt, Rinehart

and Winston, Inc., 1963. 568 pp.

*Administration; *Decision Making;

*Mathematical Models; *Methodology;

*Operations Research; Evaluation; Game
Theory; Mathematics; Measurement;
Statistics

Stumpers, F. L.   "A Bibliography of Information
Theory, Communication Theory, and Cyber-
netics," Institute of Radio Engineers,
Transactions of Professional Group on
Information Theory, PGIT-2 (November,
1953).

*Bibliographies; *Communication; *Cyber-
netics; *Information Theory; *Theories;
Biophysics; Decision Making; Mathematics;
Sensory Experience

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Radio Engineers, Transactions on Informa-
tion Theory, (September 2, 1955), 31-47.

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netics; *Information Theory; *Theories;
Biophysics; Decision Making; Mathematics;
Sensory Experience

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Alexandria, Va.: Defense Documentation

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*Management; *Operations Research;

*Systems Analysis; Computer Programing;

Critical Path Method; Game Theory;

Mathematical Models; Scheduling

<u>Systems-Operational Planning</u>. Vol. XII.

Alexandria, Va.: Defense Documentation

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*Bibliographies; *Factor Analysis;

*Operations Research; *Systems Analy-

sis; Game Theory; Mathematical Models;

Planning; Simulation

<u>Systems-Planning Requirement</u>. Vol. XIII.

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*Bibliographies; *Decision Making;

*Operations Research; *Systems Approach;

Management; Planning

<u>Uses and Limitations of Systems Analysis</u>.
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1967. 182 pp.

*Decision Making; *Management; *Systems
Analysis; *Systems Approach; Business;
Computer Programs; Prediction; Theories

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<u>Bibliography</u>. Ithaca, N. Y.: Graduate
School of Business and Public Administration,
Cornell University, 1958. 178 pp.

*Bibliographies; *Decision Making;
*Mathematics; *Psychological Character-
istics; Communications; Information
Processing; Information Seeking; Leader-
ship

Wiener, Norbert. <u>Cybernetics: Or Control and</u>
<u>Communication in the Animal and Machine</u>.
New York: Wiley and Sons, 1948.

*Communications; *Cybernetics; *Information
Organization; *Methods; Biology; Concept
Formation; Feedback; Mathematics; Models;
Prediction; Quantum Mechanics

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SYSTEMATIC METHODS
OF
PLANNING

(Campus Planning; City Planning; College

Planning; Community Planning; Decision

Making; Educational Planning; Master

Plans; Planning; Prediction; Site Analysis;

Space Utilization; Systems Analysis)

Alexander, Christopher. "A City Is Not a
Tree," Design, 206 (February 1966),
46-55.

*City Planning; *Community Planning;
*Land Use; *Set Theory; Architecture;
City Demography; City Problems;
Physical Environment; Visualization

Bareither, Harlan D., and Jerry L. Schil-
linger. University Space Planning,
Translating the Educational Program
of a University into Physical Facility
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sity of Illinois, 1968. 161 pp.

*Facility Inventory; *Higher Education;
*Models; *Research Methodology; *Space
Utilization; Capital Outlay; Educa-
tional Administration; Educational
Finance; Educational Planning; Physical
Facilities

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the Analysis of Future Land, Buildings,

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tion; *Problem Solving; *Scientific
Methodology; Bibliographies; City Plan-
ning; Game Theory; Operations Research;
Risk

Ferendino, Andrew J. "Sight Planning and
Development," The Florida Architect,
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*Site Analysis; *Site Development;
Architectural Programing; Educational
Complexes; Facility Expansion; Master
Plans; Site Selection; Vehicular Traffic

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McGraw-Hill, 1968. 210 pp.

*Administration; *Construction (Process);
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Analysis; Critical Path Method; Design;
Methods; Techniques

Gross, Bertram M. "The New Systems Budget-
ing," <u>Public Administration Review</u>,
(March/April 1969), 113-137.

*Budgeting; *Government (Administrative
Body); *Planning; *Programing; *Systems
Approach; Cost Effectiveness; Decision
Making; Problem Solving; Program Plan-
ning

Hughes, James, and Lawrence Mann. "Systems
and Planning Theory," <u>AIP Journal</u>,
(September 1969), 330-333.

*Planning; *Systems Analysis; *Systems
Approach; *Systems Concept; *Theories;
Bibliographies; Methods

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    Resource Allocation in Universities.
    Toronto: University of Toronto, 1967.
    50 pp.

    *Educational Planning; *Resource Allo-
    cations; *Systems Analysis; *Techni-
    ques; *Universities; Cost Effectiveness;
    Decision Making; Development; Manage-
    ment; Models; Program Budgeting; Pro-
    grams; Systems Approach; Testing

Litchfield, N. "Cost-Benefit Analysis in
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    can Institute of Planners, 26 (November
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    *City Planning; *Cost Effectiveness;
    *Decision Making; *Evaluation Methods;
    Guidelines; Land Use; Methods; Objec-
    tives; Prediction

Manheim, Marvin L. Hierarchical Structure -
    A Model of Design and Planning Processes.
    M. I. T. Report No. 7. Cambridge,
    Mass.: The M. I. T. Press, 1966. 227 pp.

*Decision Making; *Design; *Methodology;
*Planning; *Problem Solving; Bibliogra-
phies; Computers; Evaluation; Graphs;
Highway Engineering Aids; Mathematics;
Models; Search Strategies; Selection

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