ARCHITECTURAL/BUILDING PROGRAMMING:
An Annotated Bibliography

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INTRODUCTION

Within the context of architecture, the increased need for an environment which is responsive to individual and social behavior and a high level of operational efficiency has generated a demand for a sophisticated analytically developed pre-design information document "the architectural program".

The architectural program can be defined as: that body of information which describes, in terms of the environmental quality and equipment, an individual human, social and/or machine process and establishes the objectives and criteria for evaluation, immediately and during a projected future, of the qualitative relationship between the process and the building form in which it is housed.

Since architectural programming is a relatively new service being offered by architects, there is no overall inner-profession agreement as to a methodology for the programming process. Because of the differences in philosophies and methodologies employed by the various architectural firms, no programming manuals or texts which give clear principles or directions have emerged.
Until such time when there is a programming format which has acceptance by a majority of the built environmentalists (planners, architects, interior designers), the varied and extensive collection of publications which are the result of environmental design and behavioral research cannot be effectively ordered to provide step-by-step methods for the programming process.

The purpose of this bibliography is to bring together the random articles about programming, which appear in a variety of publications, in order to establish a resource for architectural students and practitioners who have the need for a clearer understanding of the nature of architectural programming.

While some of the stages of the programming process are derived from the methods employed by various disciplines (social sciences, operations research, computer science, etc.), this bibliography in no way attempts to introduce interdisciplinary articles but rather concentrates on those publications which address the overall subject of architectural programming. Because of the scale and diversity of the published material from other disciplines, the 'how to' of programming will, at this time, have to be developed through individual research by those schools and offices which deem it necessary to introduce a formal structure from which to either teach or practice programming.

As more bibliographic entries are available, it will no doubt be necessary to divide a programming bibliography into many sections, however, because of the quantity and content of the articles sited, this bibliography will be divided into two sections. The first is those entries which either serve as an
introduction to the content of or need for architectural program-
ing and the second is those entries which offer an outline format for developing programs.

It is necessary to state that there are a few writings which do not appear in this bibliography but may be found sited in other publications. The reason for this is because some govern-ernment publications which are no longer in print, copies of speeches which are nearly impossible to obtain and publications which exist in only one or two libraries were judged by the author as more difficult to obtain than the value of the contents merit.

The author would appreciate, at any time, information concern-
cerning published or non-published entries not appearing in this bibliography which may be obtained with relative ease by a major-
ity of the lay architects.
GENERAL INTRODUCTIONS


An article written by the director of a firm which serves as programming consultants. By way of example projects, the article discusses the scope of and benefits contingent with an architectural program.


An introductory article to the process of architectural programming which discusses in terms of dollars and cents the value of skillful programming.


An introduction to programming is made by the presentation of three methods for determining the needs associated with a design problem. The author defines needs as forces which contribute to the final form of a design and presents numerical, analog, and relational methods for discovering these needs when they are a part of a complex man-made system.


An introduction to some of the initial thinking which gave rise to the specialty area of design methodology. The introduction argues the case for the kind of rationality of thinking which must be the basis for any sound architectural program. For the reader who has the mathematical background, Appendix 2 is a good primer in the method of decomposition currently being used in conjunction with architectural program interaction matrix decomposition.

Alexander, Christopher. "The Theory and Invention of Form." Architectural Record, April 1965, pp. 177-86.

This article serves as an introduction to the need for programming by discussing the assumption that a proper physical form cannot be achieved until there is some programmatic clarity in the designer's mind and actions.
5. CPL Exchange Bibliography #384


The author is a partner in a pioneer firm in the field of space analysis. The article uses one of his firm's projects, a municipal services building for the city of Philadelphia, as an instrument for illustrating both the value and need for space analysis as an analytical programming research method.

Clark, Jeffrey E. "Office Space Programming." The Office, June 1971, pp. 27-36 and 125.

A very well documented 'cooks tour' of the process of space programming. The basic process described in the article is a fine introduction to the process necessary for architectural programming.


The author discusses the value of using a computerized cost analysis system in conjunction with the architectural program in order to dissolve the barrier between programming and design and as a means of supplying program material in the form of performance criteria.


A very interesting article written by the director of a programming firm. By using examples of various projects, the author explains the major activity areas which make up the programming procedure used by his firm.


An illustration of operations (functional processes) programming for industrial operations with a discussion of why and how the general architectural office should attempt to introduce its practice to the area of operations programming.


This book is a well researched and well written document which gives an introductory definition for architectural programming. The introduction is supplemented with a varied collection of programming techniques which are representative of the current 'in practice' state of the art.

The author regards or defines the architectural program as a sociological document. Based on his definition, he develops an argument for the introduction of a third party to serve as a mediator between the architect and client during the programming phase. He suggests that sociologist might perform the mediating role.


A discussion of the knowledge and methods necessary for the evaluation of medical environments and a suggestion as to how more effective programming of medical environments can be fostered.


This article provides an overview of the entire process of office space planning. While it is directed more toward interior architecture, the process which is depicted serves as a guide to the planning of an architectural program.


An introduction to the need for architectural programming is given by a discussion of the quantity and quality of information needed to design current complex function buildings.


The author discusses the need for building programming using a program and master plan for a college and a foundry as a means of illustration. The article further discusses the personnel and kinds of services which should be employed in the programming process.


An article which discusses the need for research oriented architects to be involved in programming and the effects on programming which can be expected if research methods are applied.

An appeal for the use of a systems approach to structuring the information necessary for medical center programming. The structured approach would permit architects and planners the advantages of technology (computers) in the program formulation process.


This article should serve as the first piece of required reading for anyone interested in the specialty area of architectural programming. The author speaks of the subject of overall environmental programming in the same terms which must necessarily be applied to architectural programming. Through a discussion of behavioral and physical systems as a means of describing the context for environmental problem formulation, the author effectively defines both the complexities in attaining and the increasing need for sophisticated programs.


A well written article which provides an introductory definition of environmental design and discusses the need for environmental problem formulation (design programming) in terms of behavioral systems rather than building systems.


This article discusses the forces which will shape the future of architecture. The author divides these forces into those generated outside the profession and those generated from within. Architectural programming is classified as one of the forces generated from within the profession helping to foster change. The change is occurring because of the forces in the profession which are creating specific programming systems and the research which uses sophisticated programming methodologies.


An exploration of the existing techniques for architectural programming through a literature search concludes that there exists underlying unifying principles in the many diverse approaches. A proposal for a methodological system of discovery of these principles by the 'theory' of general system theory is presented along with the recommendation of a practicable means for application.

Frequency and importance of interactions among job functions are generated by the method of human factors analysis described by the authors. A presentation of the human factors vector analysis process used in conjunction with the plan diagrams of a specific project illustrates the capability of this method of analysis in conjunction with architectural programming.


As far as can be determined, this is the first publication to be directed toward use as a text for the formalized teaching of architectural programming. This book is a fine introduction to the subject without overloading the beginning reader with a rigorous presentation of social and physical science research techniques.

OUTLINE FORMATS


While the jargon and lack of in-depth thought place this article in the pre-programming specialty era, the argument of the need for programming in addition to the preliminary checklist are valid for various building types.


The series of articles which follow are called design guides or design briefs. They are organized with respect to the English method of architectural practice, however, they serve as the most complete documentation of an architectural program format in existence. Each guide sited is specifically designed for a particular building type. They are excellent models for developing a programming format for both architectural firms and architectural schools.

Administrative and Office Buildings

Shop Spaces, Fixtures and Equipment

Shop Buildings

Garage and Service Station Buildings

Industrial Production Spaces

Car Parking Buildings

Industrial Storage Buildings

General Practice Surgery Spaces

Dental Practice Surgery Spaces

Drainage Installations

Roads and Paving
Vol. 144, No. 9, November 9, 1966, pp. 1171-76.

General Hospitals

Theatre Buildings

Cinema Buildings

Public House Buildings

Sports Hall Buildings

Swimming Bath Buildings

Church Buildings
Vol. 146, No. 6, August 9, 1967, pp. 373-88.

College and University Buildings
Vol. 147, No. 2, January 10, 1968, pp. 103-16.

Library Buildings
Vol. 147, No. 8, February 21, 1968, pp. 143-56.

Hostels and Halls of Residence
Vol. 147, No. 15, April 10, 1968, pp. 769-84.
Vol. 147, No. 16, April 17, 1968, pp. 837-45.
Environmental Criteria: MR Preschool Day Care Facilities.
College Station, Texas: Research Center, College of Architecture and Environmental Design, Texas A and M University, (no date).

An extremely scholarly research project which establishes guidelines for the construction or renovation of day care centers. Parts 4 and 5 establish a basis for the development of a programming checklist which can be used for almost any type of building function.


This article offers an outline format for programming and discusses some of the major recurring problems integral with current programming procedures.


A well written article by an architect who has had a great deal of experience in developing architectural programs. The article describes the scope of each of the divisions of an eleven division format for an architectural program and also discusses the means for the application of behavioral science techniques to the collection and organization of information.


In a very organized way, the author discusses five steps for organizing programming and, as a means of further elaboration, five steps for the programming process.


An excellent introduction to the need for architectural programming through an illustrative ten point outline of how one architectural firm (Caudill Rowlett Scott) approaches the process.


A report/study outlining the simultaneous cooperative, analytical and creative approach to architectural programming employed by the firm of Caudill Rowlett Scott. This publication serves as a valuable model to any individual or firm interested in developing a programming format.

An interesting article which argues for architectural pro-
ing as part of a team effort in conjunction with edu-
el planning when new educational facilities are to be
built. The article also gives a step-by-step outline of an
analytical procedure for programming.


The Office of Capital Programs at Wayne State University in
Detroit, Michigan is responsible for developing campus build-
ing programs. The author is the director of this office
and he outlines the procedure used by Wayne State in develop-
ing a program.

The Architects Handbook of Professional Practice. Edited by

An American Institute of Architects publication describing
the procedures, forms and contracts necessary for the prac-
tice of architecture. Chapter 11 gives a format and example
data necessary for an architectural project program.