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ABSTRACT

THE ARTICLE DISCUSSES HOW THE WISHES AND NEEDS OF A  
UNIVERSITY FOR BETTER DESIGNED UNIVERSITY BUILDINGS MAY BE  
COMMUNICATED TO ARCHITECTS AND ENGINEERS. THE AUTHOR DESCRIBES HIS  
OWN EXPERIENCE WITH WRITTEN PROGRAM REQUIREMENTS AND ARCHITECT FIELD  
STUDIES, AND REPRODUCES A CHECK LIST USED BY ARCHITECT AND UNIVERSITY  
STAFF IN A HOUSING PRJECT. (FPO)

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THE WRITTEN PROGRAM

(An Effective Way of Communicating with the Architect)

by

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March 1961

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## THE WRITTEN PROGRAM

(An Effective Way of Communicating with the Architect)

The purpose of this article is not to discuss planning of college and university buildings; rather, it is to set forth some ideas on how to convey the wishes and needs of a university to architects and engineers in order that these planners may design better university buildings.

Modern college buildings are much more complex than were their counterparts of a few years ago. The addition of air conditioning would make this so if there were no other reason. In addition, attention must be given to the use of closed circuit television; the use of audio, radio and video equipment; the use and disposal of radioactive materials; automatic fire-detecting devices; central control panels; and many other mechanical and electrical devices that were unheard of in buildings not too many years ago. Light intensities that would have been considered entirely adequate a short time back are now considered totally inadequate. Furthermore, staff members are visiting on other campuses more than ever. It is seldom that an employee of a school, who after visiting a number of other schools, does not return to his own campus with ideas on how to do it "bigger and better", and if not bigger and better, at least with ways to do it differently. All of this, coupled with the ever-increasing cost of construction, not only is making planning more complicated and difficult, but is making the cost of construction something to really worry about.

There are thousands of architectural firms in this country. The great majority of them possess the skill, artistic judgment, and technical know-how to design university structures. The same is true of electrical, mechanical, and structural engineers. The problem is to design structures that will serve adequately the complex uses which will be made of the many components of the buildings.

No matter how good the architect or engineer may be he cannot know, and should not be expected to know, how to plan a building to serve a large number of specialists without considerable help and assistance from the "specialist-clients" themselves. Thus, the real problem is how to transmit literally hundreds of messages from the university staff to the architect conveying the staff's wishes, needs, likes and dislikes, interests, theories, problems, and a multitude of other items in such a way that these items eventually can be translated satisfactorily into concrete and steel. The better this transmission of information is accomplished from the university staff to the architect and his engineering associates, the better the building will serve its purpose. The success of a building project, and the owner's satisfaction, may well be determined by how successfully the transfer of need and intended use by the owner is made to the architect.

There are several ways of working with the architect during the important early stages when the architect is attempting to familiarize himself with the basic requirements of his new job. The least desirable way is to hire the architect and let him start to work before any real thinking and planning have been done by the university staff directly concerned. A project planned in this way could end up as a good looking, structurally-sound building, but almost

totally lacking in those details that will become very important to its occupants as soon as the building is put into use.

Another method is for the university staff to prepare sketches and drawings to give to the architect. This method, while having some advantages, is likely to freeze thinking and to force the architect into using predetermined shapes and forms. It also has the disadvantage of still not giving to the architect as much information as he should have on scores of details.

Yet another method is to prepare a "Written Program" on each project. This "Program" can be, and often is, prepared before the architect is selected. In a written program attention is given to the size, use, and special requirements desired in the various areas of the building. Such a program cannot be the work of any one person or "special-interest" group of persons. It must be prepared by those who are to use the buildings and by members of the physical plant staff who are to operate and maintain the buildings. Such a program, carefully prepared on each project and supplemented by general instructions that are more or less applicable to all building projects, will enable the architect to produce acceptable preliminaries in the shortest length of time. Having to prepare a written program in advance of plans is good for the future occupants of a building. In order to get approval of their proposals from the university administration, they must set forth clearly how they intend to use their future facilities. This organization of thought and procedure might make for better teaching and research, and it definitely produces more functional buildings.

At Brigham Young University a written program is prepared on every building project. We believe in this method of communicating our ideas to our architects, and the architects we have worked with also like it. We supplement

each individual written program with general instructions, and require the architect on each project, in company with members of the university staff, to visit other campuses to study the good and bad features of similar projects already built and in operation.

To make any system work effectively requires organization. At Brigham Young University our planning work is centered in the Department of Physical Plant. This department has three major functions: planning, construction, and maintenance and operation. The department is in charge of a director, who reports to the President of the University. In addition, there is a permanent Campus Planning Committee of five men, appointed by the President. This committee is advisory only and makes all of its recommendations to the President. It reviews all plans for major campus development and interviews and recommends architects and engineers for all campus projects requiring such services.

The committee meets regularly each week. Deans, directors, and department chairmen meet with the committee to discuss their building problems. Through this system of reviews and discussions, committee members have become very familiar with the space requirements of the University. The committee thus exerts a large amount of influence over individual project committees as to building sizes, extent of development, and cost of projects. It reviews all building programs, and meets with the President and his Administrative Council to discuss them. It also reviews all plans submitted by architects and engineers and when satisfied with the plans, recommends to the President that they be accepted. The Director of Physical Plant is the chairman of the committee.

Individual project committees are essential in planning major buildings. These committees are not to be confused with the Campus Planning Committee. A project committee of from five to seven persons is appointed for each building that is to be planned, but the Campus Planning Committee works with all of them. These project committees, working with the Campus Planning Committee and with the Department of Physical Plant, determine the many items required on each project and assemble them into written programs. Once the architect on a project starts to work, the project committee works closely with the Campus Planning Committee, and with the architect, through the adoption of preliminary drawings. After this planning stage, the project committee has less frequent contact with the architect, but is available when needed. During construction of the building, the project committee works with the University Purchasing Department in selecting furniture and equipment. As soon as the building is accepted and occupied, the project committee for that particular building is dissolved.

Three important steps used in acquainting architects and their engineering associates with the requirements of Brigham Young University are: (1) a "Written Program" for each major project, (2) a set of general instructions to architects and engineers, prepared by the Department of Physical Plant, and (3) a field trip to campuses with buildings similar to the one that is to be planned.

#### WRITTEN PROGRAMS

The "Written Program," discussed in a general way earlier in this article, is such an effective way of transmitting information to an architect that the index taken from the Brigham Young University "Program Requirements

for the Married Student Housing Project, July 1959" is given in order to acquaint the reader with the scope of programming. The Table of Contents lists the following:

## TABLE OF CONTENTS

### General Statement of Requirements

Location of Project  
Map of Approximate Location

### Space Requirements

Apartments  
Administration, Maintenance Shops and Laundry

### Facility Requirements

Site Development  
Parking Facilities  
Size and Shape of Buildings  
Utilities  
    Electrical Power  
    Water  
    Heat  
    Gas  
    Sewage  
    Telephones  
T. V. Antenna with Apartment Connections  
Trash and Garbage  
Mail Boxes  
Materials of Construction  
Entrances  
Stairways and Elevators  
Air Conditioning  
Fire and Safety

### Financial Aspects of Project

Project Costs  
Rental Rates  
Amortization  
Operating Budget



Description of Rooms and Facilities

Apartments

Administration, Maintenance Shops and Laundry

Playground for Children

INSTRUCTIONS TO ARCHITECTS AND ENGINEERS

The Department of Physical Plant at Brigham Young University has just revised its original 116-page book entitled, Instructions to Architects and Engineers. This book contains information that is largely applicable to any building being planned for the University, forms and proceedings we want the architects and engineers to use, and specific information on items that we are trying to standardize. These instructions supplement the "Written Program" for each project and save much time because they do not need to be written into each new program as it is prepared. It is impossible to go into detail here, but the following listing of the Table of Contents will indicate the type of general information we want all architects to have before starting a project for the University:

TABLE OF CONTENTS

Introduction

Instructions to Architects and Engineers

Initial Site Survey and Report

Schematic Drawings

Preliminary Drawings

Working Drawings

Construction Period

Recommended Forms

Architect's Request for Payment

Architect's Inspection Report

## Recommended Specification Form

General Information  
Typical Index  
Typical Detail Specification  
Outline of Instructions to Bidders  
Outline of Form of Proposal  
Outline of Supplemental General Conditions  
Map of Campus  
Performance and Payment Bond  
Contract for Construction  
General Conditions  
Progress Estimate

Utility Painting and Identification  
High Temperature Water Distribution  
Electrical Power Distribution  
Fire and Safety Regulations  
Door Numbering  
Water Connection  
Sewer Connection  
Audio, Radio and Video Equipment  
Telephones  
Clocks and Class Bells  
Sprinkler Systems  
Catch Basins and Gutters  
Trash and Garbage Removal  
Restrooms and Equipment  
Custodial Rooms  
Mailroom  
Materials of Construction  
Entrance Ways  
Stairways  
Drinking Fountains  
Lighting  
Air Conditioning  
Roofing and Flashings

### FIELD TRIPS

When an architect is selected and is ready to go to work, he visits the University. At this time we sit down with him, go over all of the requirements as listed in the "Written Program," and discuss the general instructions with him. He visits the building site and is given full topographic information. After

the architect has studied and has become familiar with the requirements of the project, he and two members of the University staff may visit several schools with similar buildings. One member of the University staff is from the Physical Plant Department and one is a member of the project committee. Having the needs so clearly before him, the architect is in a good position to know what he is looking for. Thus, more helpful information is obtained than would be the case if the trip were made prior to programming and briefing.

It is not enough to go out and look on these trips. To get sufficient information to reach factual conclusions, it is necessary to see and get information, on the same items, at several schools. To insure that this will be done, a check list of things to see is made before the trip begins. When the inspection team returns, a detailed report is prepared complete with sketches, photographs, and written materials. These trips and reports supplement the other information the architect has been given, and he is then ready to start schematic studies. The following is a reproduction (condensed in the interest of saving space) of the check list used by the architect and two members of the University staff in surveying married-student housing projects at several institutions, before actual planning was started:

**MARRIED-STUDENT HOUSING STUDY**  
July 1959

**UNIVERSITY** \_\_\_\_\_  
Location \_\_\_\_\_  
Enrollment \_\_\_\_\_ Graduate Students \_\_\_\_\_  
Married Students \_\_\_\_\_ Faculty \_\_\_\_\_

**HOUSING**  
Number Students Housed on Campus \_\_\_\_\_  
Married \_\_\_\_\_ Single \_\_\_\_\_  
Number Resident Students \_\_\_\_\_ Nonresident \_\_\_\_\_

**MARRIED-STUDENT HOUSING PROJECT**

Number of Projects \_\_\_\_\_  
Number of Student Apartments per Building \_\_\_\_\_  
    One-Bedroom \_\_\_\_\_ Two-Bedroom \_\_\_\_\_ Three-Bedroom \_\_\_\_\_  
Number of Faculty Apartments \_\_\_\_\_  
    One-Bedroom \_\_\_\_\_ Two-Bedroom \_\_\_\_\_ Three-Bedroom \_\_\_\_\_  
Number of Families per Building \_\_\_\_\_  
Costs \_\_\_\_\_  
Rent Amount \_\_\_\_\_  
    One-Bedroom \_\_\_\_\_ Two-Bedroom \_\_\_\_\_ Three-Bedroom \_\_\_\_\_  
Includes \_\_\_\_\_

**RELATED FACILITIES**

Recreation-Children  
    Equipment \_\_\_\_\_  
    Size \_\_\_\_\_  
    Fenced or Not \_\_\_\_\_  
    Number of Families per Area \_\_\_\_\_  
Recreation-Adults  
    Description and Size \_\_\_\_\_  
    Equipment \_\_\_\_\_  
    Number of Families per Area or Room \_\_\_\_\_  
Nursery \_\_\_\_\_  
Laundry  
    Equipment in Room \_\_\_\_\_  
    Size of Room \_\_\_\_\_  
    Number of Families per Room \_\_\_\_\_  
    Floor Plan \_\_\_\_\_  
Parking and Roads  
    Width of Roads \_\_\_\_\_  
    Location of Parking \_\_\_\_\_  
    Parking Spaces per Family \_\_\_\_\_  
Administration and Custodial Facilities  
    Size of Spaces \_\_\_\_\_  
    Floor Plans \_\_\_\_\_

**UTILITIES**

Heat \_\_\_\_\_  
Electricity \_\_\_\_\_  
Garbage and Waste Removal \_\_\_\_\_  
Telephones \_\_\_\_\_  
Mechanical Rooms \_\_\_\_\_

**SHOPPING CENTER**

Services \_\_\_\_\_  
Ownership \_\_\_\_\_  
Size \_\_\_\_\_  
Construction \_\_\_\_\_

(MARRIED-STUDENT HOUSING Contd.)

**BUILDING**

Size \_\_\_\_\_  
Cost \_\_\_\_\_  
Construction \_\_\_\_\_  
Number of Floors \_\_\_\_\_  
Below Grade \_\_\_\_\_

**ROOMS - Floor Plan** \_\_\_\_\_

Bathroom \_\_\_\_\_  
Height of Tile on Walls \_\_\_\_\_  
Ceiling and Wall Materials \_\_\_\_\_  
Storage Space \_\_\_\_\_  
Size \_\_\_\_\_  
Items Stored \_\_\_\_\_

**ENTRANCES**

Doors \_\_\_\_\_  
Mats \_\_\_\_\_

**WINDOWS**

Frame Material \_\_\_\_\_  
Type \_\_\_\_\_  
Air Conditioning Facilities \_\_\_\_\_

**WALLS**

Exterior Material \_\_\_\_\_  
Interior Material \_\_\_\_\_

**FLOORS**

Material \_\_\_\_\_  
Covering \_\_\_\_\_

**CEILING**

Height \_\_\_\_\_  
Material \_\_\_\_\_

**ROOF**

Pitch \_\_\_\_\_  
Material \_\_\_\_\_

**CORRIDORS OR OUTSIDE BALCONIES**

Width \_\_\_\_\_  
Ceiling Height \_\_\_\_\_

**LIGHTING**

Type \_\_\_\_\_  
Foot Candles \_\_\_\_\_

(MARRIED-STUDENT HOUSING Contd.)

ELEVATORS

Number \_\_\_\_\_

Type \_\_\_\_\_

COLOR

Quality of Color Design \_\_\_\_\_

Person Doing Color Design \_\_\_\_\_

STAIRS

Tread Material \_\_\_\_\_

FIRE PROTECTION

Equipment in Building \_\_\_\_\_

Alarm System \_\_\_\_\_