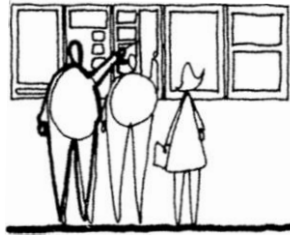# Design Analytics

Notes on Facility Programming and Building Evaluation

A Compendium of Monographs by

Edward T. White

The Edward T. White Library, available from ArchiBasics Press, includes these publications:

- Building Meaning Analysis: Diagramming Information for Architectural Design
- Concept Sourcebook: A Vocabulary of Architectural Forms
- Design Analytics: Notes on Facility Programming and Building Evaluation
- Design Briefing in England: Interviews with Architects
- Facility Programming in the United States: Interviews with Architects
- Images of Italy
- Ordering Systems: An Introduction to Architectural Design
- The Piazzas of Florence: Place-Making Lessons for Urban Environments
- Path • Portal • Place: Appreciating Public Space in Urban Environments
- Presentation Strategies in Architecture
- Site Analysis: Diagramming Information for Architectural Design
- Space Adjacency Analysis: Diagramming Information for Architectural Design
- Travel Drawing: Engaging the Spirit of Place

Design Analytics: Notes on Facility Programming and Building Evaluation

Table of Contents

Introduction

This document is a compilation of nine monographs produced at different times for different reasons. The initial independent monographs supported pedagogical and personal purposes such as coursework reading for students, conference presentation handouts, curriculum planning thought pieces, correspondences with faculty at other schools and warmups for more extensive publications.
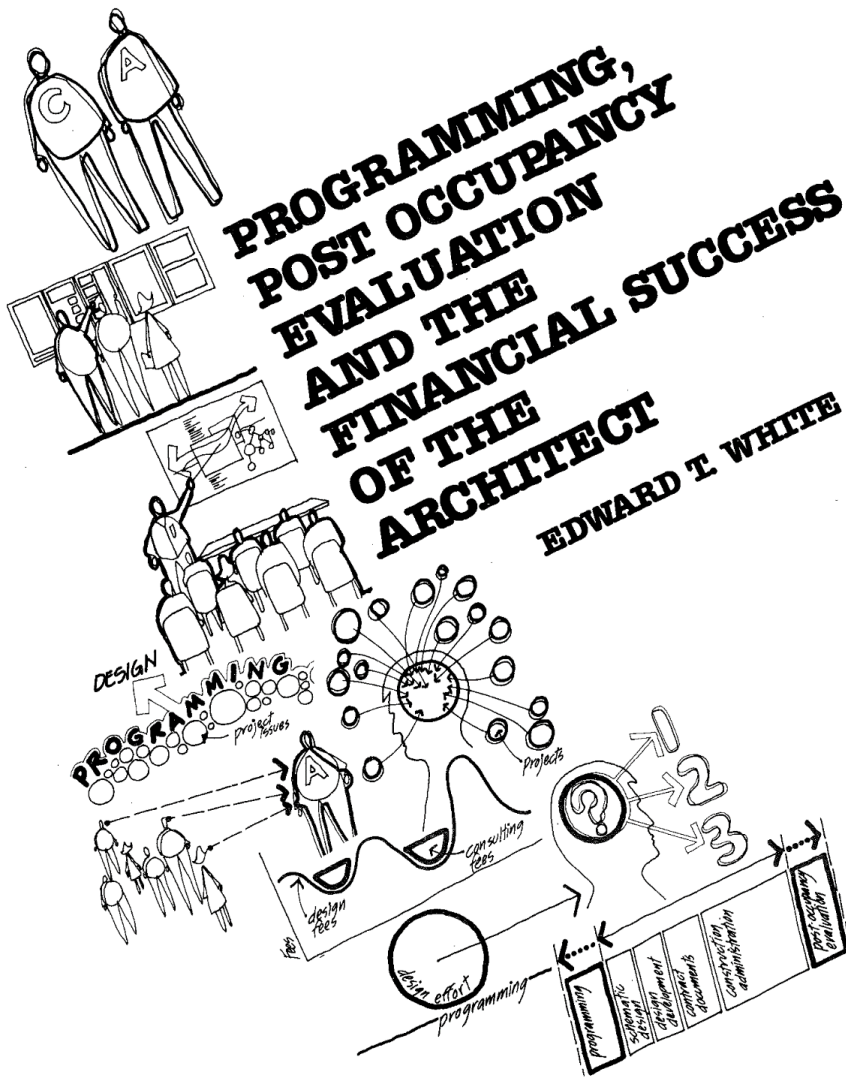
The monographs focus on two related areas of architectural practice. Those related to facility programming explore use of predesign research to establish a project's issues and requirements, challenges and opportunities. Those related to building evaluation explore use of performance studies of a built and occupied facility for its strengths and weaknesses, successes and failures.

Facility programming and building evaluation have two important reciprocal relationships with one another. Facility programming attempts to discover and document the important ways a built/occupied facility should provide and perform to support the organization and occupants who live/work there as well as respect/enhance the wider contexts where the facility is built. Building evaluation attempts to determine the ways and extent to which facility programming goals/requirements were actually met. And then, because building evaluation discovers the real, lived experience of building occupants and the performance of the built/occupied building, its conclusions provide "lessons learned" which can be incorporated as goals/needs/requirements into programming efforts for future projects.

In this publication, the nine monographs have been organized in three groups.

- Two monographs are under the heading "Practice Management". They provide context, addressing the relationships of facility programming and building evaluation to the general practice of architecture, profitability of projects, and management of the architectural firm.
- Four monographs are collected under the title "Programming". These four focus on decision-making, growth of facility programming as a service in the architecture profession, ways programming fits into the roles and responsibilities of architects who work as in-house staff for large corporations such as Marriot, IBM and 3M, and considerations related to teaching facility programming.
- Three monographs are organized under "Post-Occupancy Evaluation". These concentrate on ways building evaluation methods can be of use to architects who work within government agencies, applications of building evaluation that are useful for architects who work as in-house staff for large corporations such as those listed above, and the advantages and disadvantages of employing building evaluation services from a client's point of view.

Programming, Post-Occupancy Evaluation, and the Financial Success of the Architect

CONTENTS

INTRODUCTION

This presentation is about how project programming and post-
occupancy evaluation can contribute, as architectural ser-
vices, to the financial success of the architect in private prac-
tice. The ideas and principles discussed in the presentation are
collected from a large number of case study experiences of the
author as well as from interviews with architects in the United
States and England.

The emphasis in this presentation will be on project program-
ming.

Punch Lines

There are two principal messages that this presentation is in-
tended to communicate. The first message is that program-
ming and post-occupancy evaluation can indeed contribute to
financial success in three distinct ways. As we will see, these
ways range from direct (producing additional revenues) to in-
direct (protecting profit margins of present services and en-
hancing the chances of competing successfully for new work).
The second message is that, in order for programming and

*Programming and
POE can
contribute to
financial success
in 3 ways.*

post-occupancy evaluation to effectively contribute to financial success, there are three essential things that the architect must do and do well.

ACHIEVING FINANCIAL SUCCESS WITH PROGRAMMING AND POE

Contributing to Financial Success

Let's look at the first presentation message for a moment. The three ways that programming and post-occupancy evaluation can contribute to financial success are:

- **Expanded services and fees**. Programming and post-occupancy evaluation are both components which can be added to the list of services which architects offer to clients and for which architects can earn additional fees.

- **Enhancement and protection of design fee profit margins**. Both programming and post-occupancy evaluation can help increase the efficiency with which design services are rendered, thus helping to protect the architect from design fee profit erosion and assisting the architect in increasing profit margins on projects.

- **Competitive edge in pursuing new work**. Programming and post-occupancy evaluation can assist the architectural firm in positioning itself more favorably when competing for new work against other firms.

These three topics will serve as the organizational outline for the first part of this presentation.

Enjoying Financial Success

Next, we have the three things which the architect must do successfully if expanded services, profit margin protection, and competitive marketing are to be realized as actual contributions to the architect's financial success:

- **Marketing**. The architect must first get the programming and post-occupancy evaluation work before he/she can enjoy increased revenues from these services. The architect can't do the work and get the fee if the firm doesn't land the job.

- **Planning**. After the architect lands the programming or post-occupancy evaluation work, the work must be planned carefully so that a fair fee and schedule can be negotiated with the client. Landing the job does no good

Programming
Post-occupancy
evaluation

- Long range planning
- Master planning
- Environmental inventory
- Move-in assistance
- Feasibility studies
- Facility management

Expand programming and post-occupancy evaluation into **other stand alone services.**

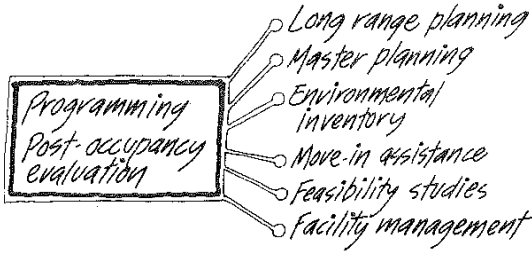if the architect is paid too little for it or must implement it within an unreasonable time frame.

- **Management**. After the architect has landed the job and planned it carefully, and has negotiated a fair fee and schedule, the job must be carefully monitored and managed, kept on track, and done efficiently. The negotiated fee and schedule may be fair but the architect can still lose money because of inefficient implementation of the work. Loose project management should not be allowed to turn a potential profitable job into a money losing proposition.

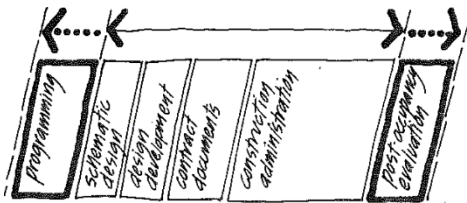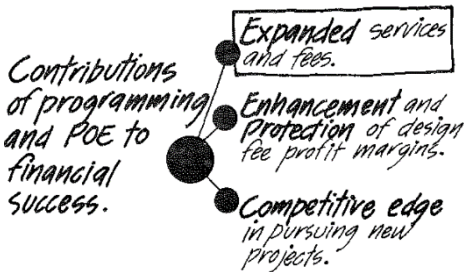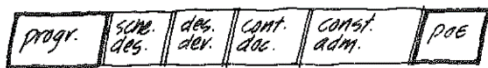These three topics will provide the content structure for the second part of the presentation.

EXPANDING FEE-GENERATING SERVICES

We will look first at the most obvious way programming and post-occupancy evaluation contribute to financial success, that is, by extending the list of services which can be offered to clients and for which fees may be generated.

Both programming and post-occupancy evaluation can be added to the standard services provided for the typical building project.

Contributions of programming and POE to financial success.

Expanded services and fees.

Enhancement and Protection of design fee profit margins.
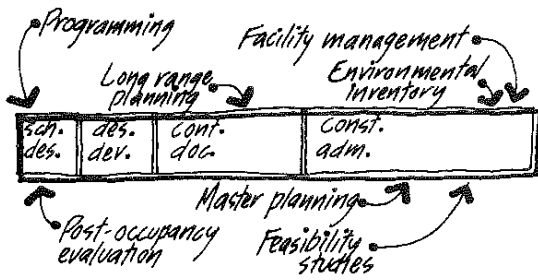
Competitive edge in pursuing new projects.

Programming can be offered as a lead into schematic design and post-occupancy evaluation can be offered as a follow-up service after construction has been completed and the building is occupied.Sometimes, post-occupancy evaluation can also occur as an aspect of programming where existing buildings are evaluated and results are incorporated into the programming and design of the new project.

Incorporate programming and POE into the **standard building process.**

Once an architectural firm becomes competent in programming and post-occupancy evaluation, these services may also be offered on a stand-alone basis. Here, the architect may market programming and post-occupancy evaluation to clients in situations that may not involve other types of architectural services. Stand-alone programming and post-occupancy evaluation consulting services can further expand the added service-added fee benefits of these activities for the architectural firm.

| progr. | sche. des. | des. dev. | cont. doc. | const. adm. | poe |

and...

programming

and...

post-occupancy evaluation

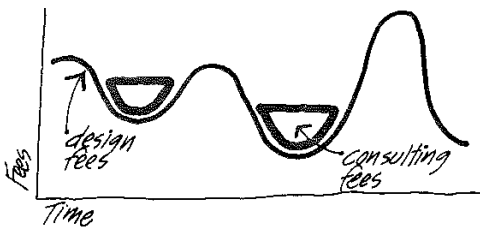Provide **stand alone** programming and post-occupancy evaluation services.

As mentioned earlier, programming and post-occupancy evaluation may sometimes occur as companion aspects of the same consulting project where the evaluation of existing buildings is a component of the programming of a new building.

Many architects find that the generic underlying structure of programming and post-occupancy evaluation is the same and that this structure is also similar to the underlying structure of other types of studies. This understanding about the similarity of all pre-decision studies permits these architects to expand their menu of stand-alone consulting services well beyond programming and post-occupancy evaluation into other services such as the ones listed here. An additional benefit of this broadening of the available services and types of studies offered by the architectural firm is that the quality and depth of each type of service grows because each study borrows techniques and methods from all the other studies.

When an architect is able to offer a wide range of study types and consultant services, it is often the case that these studies uncover the need for other architectural services which the firm may also provide. This is because many of the study types are need detection investigations or use efforts to bring information to bear upon decisions about buildings. The studies shown earlier serve as antennae for clients regarding needed changes or additions to their building stock.

Programming   Facility management   Long range planning   Environmental Inventory   Master planning   Post-occupancy evaluation   Feasibility studies   sch. des.   des. dev.   cont. doc.   Const. adm.

Stand alone consulting services can help to **create demand** for design services.

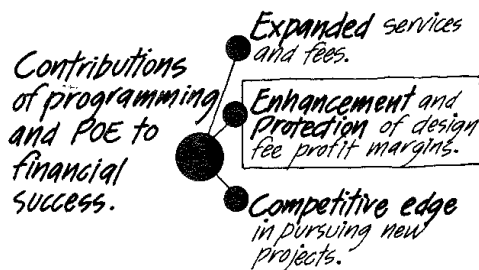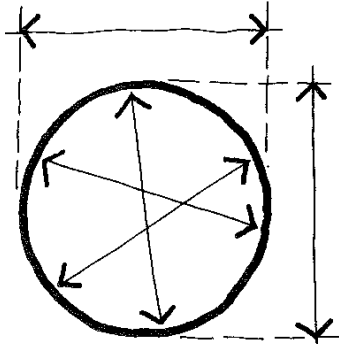*Fees   design fees   Consulting fees   Time*

Stand alone consulting services can help to **reduce** the **impact** of the **construction cycle.**

When an architect provides a wide range of stand-alone consulting services to clients, fees from these projects can help to fill the troughs in fee revenues when construction projects have been reduced due to the economic cycle. Many institutional and governmental clients that may not have funds for design and construction in slow economic periods will often commission studies during these slow times in order to prepare for the construction that will occur in better times ahead. Politically, many client organizations must show activity and action even when they are not able to build, and undertaking studies of various types is one way they accomplish this.

PROTECTING AND ENHANCING DESIGN FEE PROFITS

Next, we will look at some ideas related to programming and post-occupancy evaluation as insurance against erosion of profit margins on fees for design services. In this instance, programming and post-occupancy evaluation don't add fees, but rather they protect and even increase the profit on fees for design work.

Contributions of programming and POE to financial success.   Expanded services and fees.   Enhancement and Protection of design fee profit margins.   Competitive edge in pursuing new projects.

Many architects prefer to complete programming before negotiating the design fee because, through programming, the scope of the project and the complexity of the design work can be defined. Programming can help to establish who will do what once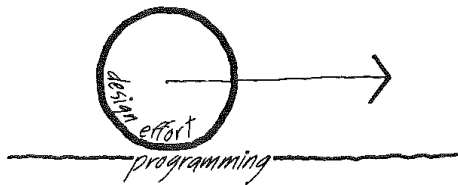 design begins and can thus avoid time-wasting misunderstandings later between client and architect. Here, programming assists both the client and the architect to understand and appreciate the nature of the design problem to be solved, and this common understanding can inform the negotiation of the contract for design services. From the architect's viewpoint, this helps to avoid an inappropriately low design fee for a complex job.

*Programming can help to clarify the project **scope** and **define** the **responsibilities** of the architect and client.*

Programming can help to uncover the client's expectations regarding building quality, form preference, budget, schedule, and other vital information which the architect should know in order to plan and manage the design effort efficiently and to avoid wasted motion due to redesign and lengthy discussions with the client to obtain design approvals. Programming promotes a meeting of the minds between all participants in the design process. In fact, this human aspect of programming, where the client and architect get to know one another, is for many architects the most valuable aspect of programming.

Expectations   *Requirements*

Client

*Programming can help to **establish** the **client's expectations** and project **requirements**.*

Programming allows the architect to initiate design with confidence that he/she understands the problem and the requirements to be met. Ill-defined project needs usually result in profit-eroding slippage in the design process. This slippage can take the form of major design work being invested in the wrong problem or, worse, design time spent on a project that was never really feasible from the beginning. Programming can be a method whereby the architect keeps the project on course. An important component of this project management effort through programming is the periodic testing of critical project information relationships, such as:

design effort

programming

*Programming can help to create good **traction** at the beginning and throughout the project.*

- Budget (total dollars) to quality (cost per square foot) to scope (gross building area)

- Net to gross building efficiency

- Site (codes, area) to scope (use, area)

Programming can help to set the pace and working relationships of the project.

Programming can help to avoid wasting the time of the architect's consultants.

Programming can help to cultivate rapport, confidence and trust between architect and client.

Contributions of programming and POE to financial success.

Expanded services and fees.

Enhancement and Protection of design fee profit margins.

Competitive edge in pursuing new projects.

- Scope (area, complexity) to schedule (design and construction time)

- Function (activity and occupancy) to space (area)

The timeliness of client decisions and seriousness of the client's attitude and involvement in the project can be established for the whole project by the programming phase. Programming can function as a "pace car" for the project and get the entire effort off to a good start. Programming communicates to the client what the architect expects of him/her in terms of working relationships and clarifies decision versus advisory roles of all participants in the project.
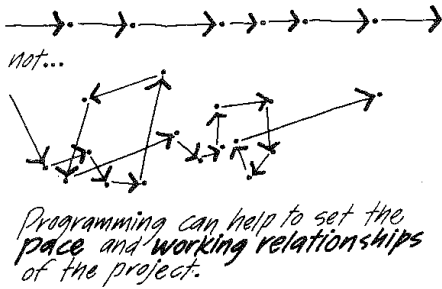
Programming can also help to ensure that the engineers and other consultants who are involved with the project don't waste time working on a scheme that will prove to be unworkable or substantially changed because of misfit with the client's requirements. The programming process can also serve to establish pace, decision-timeliness, and working relationships for consultants when they participate in the programming effort.
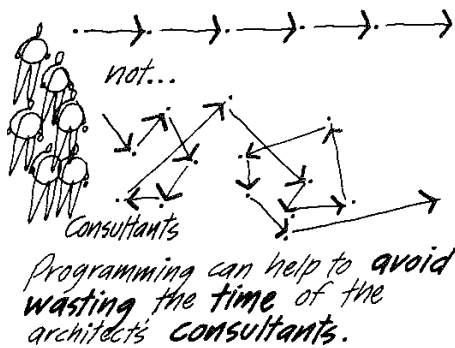
Programming assists the architect in cultivating an initial working relationship with the client and the client team. Rapport, trust, and confidence between the architect and client developed during programming can increase the likelihood of design approvals by the client later in the planning process and can decrease the likelihood of client suspicion and complaint. All of this can mean a smoother, more efficient planning process with less interruption, delay, and redesign.
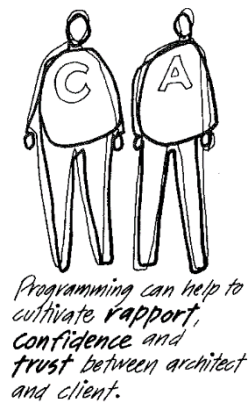
## ADVANTAGE WHEN COMPETING FOR NEW WORK

Now we will discuss how programming and post-occupancy evaluation can give an architecture firm an advantage in competing with other firms for new work. We will see how programming can be a means for contact with prospective clients before other firms are able to do so and how programming and post-occupancy evaluation services can make an architect more attractive to clients. Landing new work relates directly to the financial success of an architectural practice.
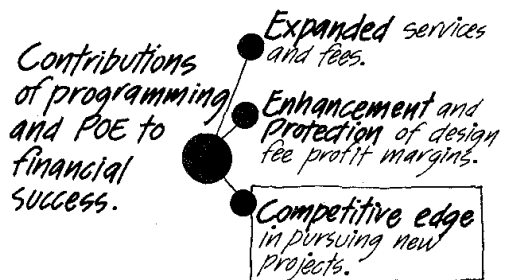
Many architects today have shifted their orientation from project-seeking (pursuing projects one at a time) to client-seeking (pursuing long-term continuing relationships with particular clients). Programming and post-occupancy evaluation can play a central role in achieving this strategic positioning goal.

Some firms have realized that the sooner they are able to develop contact with the potential client, the more likely the client will ask them to do any architectural work which is needed as a result of early studies. Consequently, architecture firms have begun to offer management consulting services to clients which may not be architectural in character but which provide the occasion for this early client contact. The author is aware of at least one firm that even offers new business start-up assistance to clients. The strategy is to out front-end the competing architects, that is, to find ways to help the potential client earlier and earlier in the facility planning process. Programming and post-occupancy evaluation can contribute to this objective.

When the rules allow, the architect may choose to visit the client prior to the architect selection interview with the intent of learning about the client situation, problems, needs, and expectations. Programming and post-occupancy evaluation methods offer techniques for learning more about the client and project so that the architect can be more knowledgeable, responsive, and sensitive than the competing firms at the interview. Most clients appreciate the initiative shown by the architect in learning about the project in greater detail, thus placing that architect in an advantageous position at the interview.
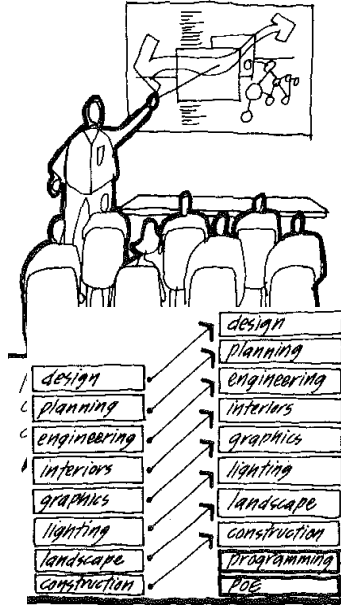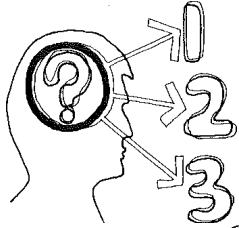

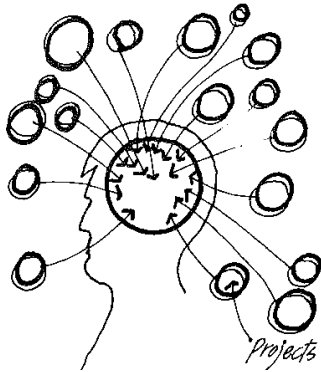*Programming and POE can help to make all the **other services** the architect offers look **smarter.***
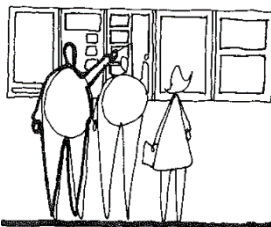
*Programming can enhance the architect's **reputation** for **listening** to the client and approaching design in a **businesslike** manner.*

An architect who programs projects and evaluates buildings develops a reputation for listening to clients. This architect has designated phases within the planning process (programming and building evaluation) where listening is the focus of the exercise and the client's ideas and concerns are the primary content. Architecture firms that offer programming and post-occupancy evaluation services are known for their business-like, no-nonsense approach to design. These firms define the problem and then solve it, and this makes them very attractive to clients.

All of the other services provided by the architect are more informed and researched when the firm also provides programming and post-occupancy evaluation services.
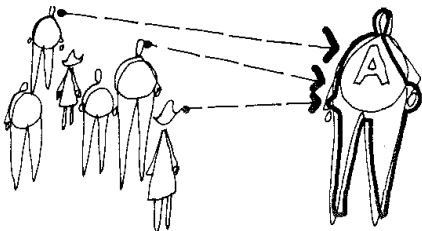
Programming and POE can help a **confused** *client to* **clarify** *issues and make informed decisions.*

Programming and post-occupancy evaluation serve as reconnaissance phases for all of the other types of work done by the firm, including engineering, planning, interiors, landscape design, and management. A firm may alter its image significantly from the client's viewpoint if it maintains a programming and research division because this division means that all the other services are on a learning curve. The entire firm works smarter and this is appealing to clients.

Programming and POE can help the architect develop **expertise** *in the* **building type.**

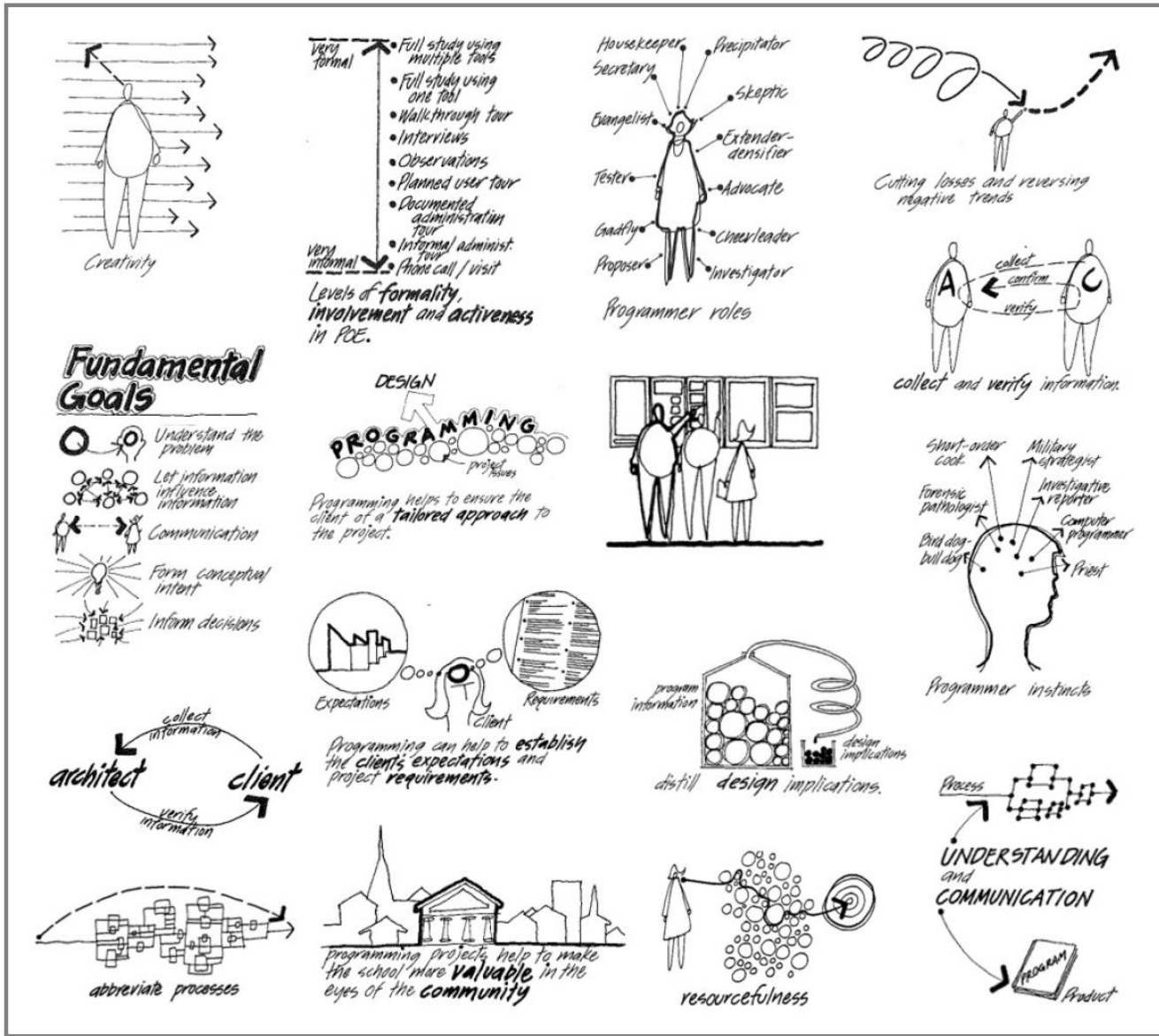*Programming helps to ensure the client of a* **tailored approach** *to the project.*

Some clients have a vague feeling that some sort of architectural work is needed for their organization but have difficulty defining what should be done or how to proceed. The unsure and insecure client is very attracted to architects who offer methods whereby the needs and requirements can be defined, clarified, and tested. Programming and building evaluation are ways that the architect can "work things out" with the client and help the client to become clearer about what needs to be done, why, and how-best to approach the problem and the strategies for solving it. Many architects have competed successfully for projects because clients were impressed with their bedside manner, that is, with their willingness to explore the problem with the client and their ability to apply techniques (programming and building evaluation) to accomplish this work efficiently.

One of the reasons clients use architects is that clients desire and expect a tailored and custom approach to their projects. Clients who come to architects usually don't want off-the-shelf architecture. Programming is central to custom design because it is where the client's unique needs and circumstances are defined. The specialness of these factors as established through programming is what enables a tailored scheme to be planned. Programming is where the client is "measured" for the new building and architects who are willing to take the trouble to do this measuring through programming are appreciated and sought out by clients.

The **information collection** *process can expose architects to potential* **clients** *of* **future** *projects.*

In the process of coordinating programming and other studies, the architect often has the opportunity to personally contact various people and organizations for input. These people and organizations are frequently potential clients for future projects. An interview with the head of an organization to obtain information for a study done for another client is an opportunity to expose the architectural firm and its expertise to a future client. This opportunity for exposure to and contact with potential clients is much greater for programming and

post-occupancy evaluation studies than with the typical design services on the typical project.

Both data and expertise are accumulated at a very rapid rate through implementation of programming and building evaluation studies. These services allow the architect to become expert in building types because of the methodical and repeated collection and analysis of information over multiple projects.

DESIGN ANALYTICS

Notes on Facility Programming and Building Evaluation

EDWARD T. WHITE