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An Inquiry Into Architectural Practice To Best
Setup A Firm's Operation And Physical Plant

by Gilbert Barry

An Undergraduate Thesis
Montana State University 1973

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THE BASIS OF MAKING DECISIONS

MY OBJECTIVES

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PART ONE

The Basis Of Making Decisions

1. My Objectives
2. My General Goals Of Life
3. My Goals For Practice Of Architecture

1. MY Objectives The Problem To Be Solved

The object of this thesis is to plan and design an architectural practice for myself and to design the physical plant in which to conduct this practice. It is the intent of this study to design the most ideal practice possible that meet my personal goals. The practice must be designed before the physical plant is designed. The first step is to state my goals and objectives. The second step is to gather all possible information on the practice of architecture. Next this information must be organized in useable form. Next, decisions will be made on each division of information. The decisions will be made on the basis of what will best meet the firms goals. My personal goals will be changed by the information gained on the realities of practicing architecture. Also, the employee goals will go into making the firms goals. The next step is to make organizational diagrams. On page 1 is a chart of the sequence of decision program steps. This will lead to a program for the physical plant.

2. My General Goals In Life

- a. Be an architect
- b. Own my own business and be my own boss.
- c. Be able to take time off during the day to play tennis and golf.
- d. Forget the troubles of business when leave the office.
- e. Work only 40 hours a week. I am a family man who likes to spend time with my family. This gives time for other things in life besides architecture.
- f. We like to travel on vacation but I don't like to go out of town on business.
- g. We like to feel like a part of the community and have a good image.
- h. \$25,000 a year income.
- i. Good working conditions.
- j. Live in Santa Barbara, California, because of it's ideal location, climate, size, culture, shops, schools, ocean.

3. My Goal Of Practice Of Architecture

- a. I am an architect because I love the work. It is a creative profession. I love to design and plan things, especially the human environment.
- b. I choose to practice architecture as opposed to teaching or working in a related field. I am more interested in regular architecture than city planning or any other specialized field.
- c. I decided to be a principal in my own firm for the following reasons.
 1. I am my own boss.
 2. Freedom to take an afternoon off to play golf.
 3. Better income, get the full benefit of my labor, not working to make a profit for someone else.
 4. I am a generalist, I get bored specializing in one thing. I have interests in several aspects of architecture. I enjoy management, planning and coordinating the work. I want to be the project architect; the overall director of the design team of specialists.
 5. Get recognition for my work and a good public image for myself and the firm.
 6. No drafting
- d. I want to contribute to the creation of the design concept.
- e. I want my firm to provide complete, comprehensive service, right in the firm itself. I want to provide my clients with the best service.
- f. The primary goal of the firm is to be successful. this means two things:
 1. Achieve good architecture (good planning and design). Four parts are structurally sound, economical, functional, and esthetically beautiful.
 2. Make a good profit. The firm will be run on the business principle that the service that our firm provides is commensurate with the amount fee we are getting. I will decide how much time will be spent on the design and changes. This means that the firm will turn down any client who is not willing to pay the standard fee for the service required to design an excellent building.

- g. Work a 40 hour week. Hire more employees if necessary.
- h. Associate with top quality employees. Offer the best in employees working conditions and benefits.
- i. I desire to have a firm large enough to get and design big jobs; like 4 million dollars. I want the variety of all types of buildings.

PART TWO

Organization Of Research/Analysis Of Architectural Practice

1. Typical Employee Goals
2. The Basic Architectural Service
3. Comprehensive Service
4. In-House Consultants
5. The Future Of Architecture
6. Income Of Average Firm
7. Facts Related To Firm Size
8. Data On Legal Structure

1. Typical Employee Goals

- a. Desire personal identity and a close touch with the job.
- b. Most want to work in a small or medium size office.
- c. Want their firm to offer a full range of services including planning, programming, engineering, construction management.
- d. Most architects want to specialize in design or do a variety of satisfying work. Few wish to specialize in something other than design.
- e. Young architects are socially conscious.
- f. Desire career growth and security.
- g. Most get registered in about 5 years after graduation.
- h. Majority have a future goal of their own firm. Feel a part of the firm.
- i. They want to work on a variety of building types.
- j. Most want to help create good architecture.
- k. Good salary with expenses paid.
- l. Short hours and good vacation.
- m. Benefits like insurance, retirement plan.
- n. Profit sharing
- o. Desire a good chance for advancement.
- p. Recognition for their work.
- q. A feeling of accomplishing something.
- r. Desire a good working environment with good social relations.

s. Many want responsibility.

t. A place to park their car.

A typical employee looks for his job to satisfy a succession of personal requirements which could be grouped into five categories.

1. Physical needs--wages and working conditions.
2. Security needs--benefits which bear on his health and security.
3. Social needs--working conditions and factors bearing on communication and morale.
4. Egoistic needs--where the employee's self image becomes an important part of management consideration; closely related to.
5. Self-realization--an employee's highest level of needs is self-fulfillment the realization of personal growth.

2. The Basic Architectural Service

Through the normal procedures of the various elements of the building field, unity and a high degree of efficiency are attained as a result of customary and habitual relationships. In this atmosphere, without domination, the design professions are free to create.

In the normal building procedure the owner selects an architect who will guide him through the building process. In solving the clients problem the architect will collaborate with engineers and other consultants, and may obtain advice from real estate mortgage and finance agencies. When the Contract Documents are complete the architect assists the owner in selection of a contractor, who with the help of suppliers, manufacturers, and the building trades, performs the actual construction. During construction the architect administers the construction contract and interprets the contract documents. Each of these elements of the building field has its separate objectives.

The building field, a major component of the larger construction industry, is composed of many elements loosely coordinated. These fall into four groups:

- A. The owner -- the public and private client.
- B. The design professions -- architects, engineers,

planners and various other consultants and technical personnel engaged by them.

- C. The Constructors -- contractors, subcontractors, suppliers, producers or manufacturers, and building trade personnel.
- D. Other elements -- mortgage and finance agencies, real estate services, market researchers, analysts and miscellaneous official and service agencies.

The architects basic service is broken down into six parts with % of time spent on each.

- 1. Conference with owner, studies, and programming. 10%
- 2. Schematics --10%
- 3. Design development preliminary drawings -- 10%
- 4. Working drawings and specifications -- 10%
- 5. Bid proposals and letting of contract -- 2%
- 6. The keeping of accounts and administration and inspection of construction. -- 18%

The owner must give his approval after each part before the architect can continue.

The basic thing an architect does is design. He designs the form and function of the environment and he designs the method and material of construction.

3. Comprehensive Service

The basic thing an architect does is design. But, the last 50 years the number of things to be designed has increased. One man is no longer able to have the ability to design all the things that make-up the man-made environment today. The architect is still in charge of the design but he now lets many specialists help him. These people may be employees of his firm or they may be outside consultants, whom the architects hires for advice or to actually design some specific item. Examples of specialized fields related to architecture are:

1. Air Conditioning Engineer
2. Plumbing Engineer
3. Lighting Engineer
4. Acoustic Engineer
5. Interior Designer
6. Color Consultant
7. Graphic Designer
8. Sculptor-- Mural Artist
9. Landscape Architect
10. Soil Testing Lab.
11. Industrial Designer
12. City Planner
13. Programmer & Researcher
14. Structural Engineer
15. Civil Engineer
16. Real Estate & Developer
17. Construction Manager
18. System Analyst

Some of these services are included in the architect's basic service. These include the structural, lighting, plumbing and air conditioning engineers.

The services not normally included in the basic service are called comprehensive services. Comprehensive services offered by an architect means that he offers to a larger portion of the total construction process than the traditional normal building procedure called for. One reason that many architects have started offering comprehensive services is because of competition by realtors, developers, package dealers, and contractors who have offered clients "turn-key" buildings. This means the client hires one firm to do the planning, feasibility study, promotion and development, arranges the financing, designs the building and actually constructs the building all for one lump sum price. Many clients are now asking for this service. The disadvantage of this type of service is that the client is entirely dependent on the contractor, the benefits of competitive bidding and quality control are lost.

The scope and complexity of design problems has broadened immeasurably, changed in concept and continues to evolve. So the architectural firm must expand its services to perform or arrange for and coordinate all the diverse services required of contemporary environmental design projects. These comprehensive services can be classified into six groups;

1. Project Analysis Services

- a. feasibility study
- b. financial analysis
- c. location analysis
- d. operational programming
- e. building programming

2. Promotional Services

- a. real estate and land assembly
- b. financing of projects
- c. public relations.

3. Design And Planning Services

- a. operational design and planning
- b. equipment and furnishings
- c. building design and planning the traditional basic service

4. Construction Service

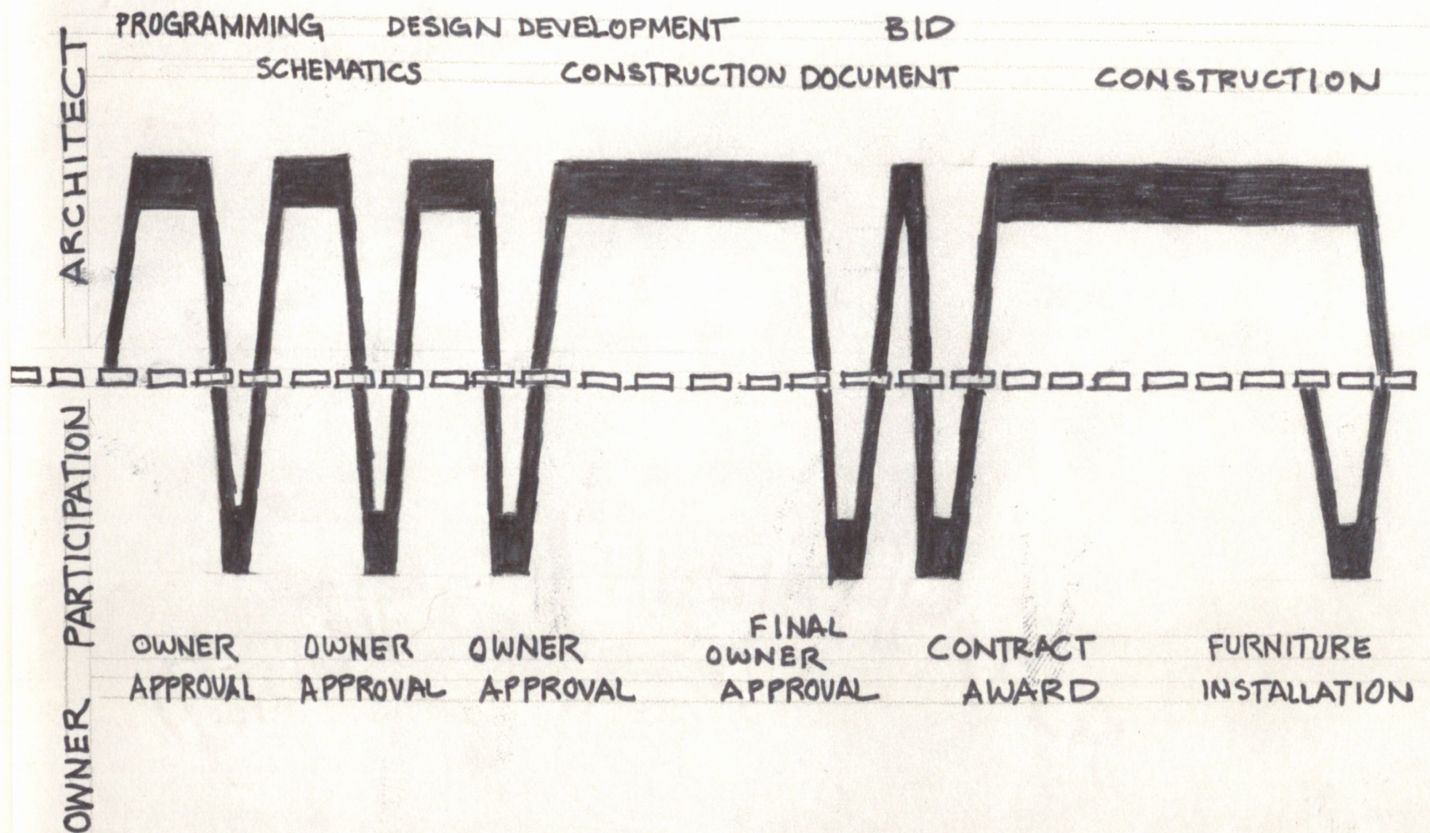
- a. bids and contracts
- b. inspection, supervision, and administration
- c. job cost accounting
- d. construction management
- e. post-construction services

5. Supporting Services

- a. supporting design services such as engineering, planning, landscape, interiors, acoustics
- b. special consultants such as specific building type, market, economic and merchandising analysis

6. Related Services

- a. education and industry consultation
- b. research
- c. product & design
- d. prefabrication processes



PROJECT TIME SEQUENCE

4. In-House Consultants

The work the consultants design usually amounts to about 50% of the construction cost:

- a. electrical 10%
- b. plumbing 10%
- c. air conditioning 10%
- d. structural 15%
- e. misc. 5%

They are paid 33% of the architects total income. For this reason it makes more sense to have these engineers as employees of the firm. If an architect hires consulting engineering firms he must pay for the overhead and profit of the consultant. By combining the two the total overhead can be reduced. The advantages of in-house consultants are as follows:

1. The architect can control the work schedule. He doesn't have to wait until the consultant is finished with some other clients job before he can start work.
2. The consultant is always right there in person to answer questions and serve as a part of the design team. The consultant is more involved with the project right from the start. It saves a lot of travel and phone bills.
3. The outside consultant is not set up to handle long time lapse between the preliminary and the working drawings.
4. It is less costly to make changes. The architect must pay the engineer extra for any re-draw. The architect must pay the outside consultant the full fee whether the job is built or not. The architect must pay the consultant whether the owner pays the architect or not. This is easier to absorb if the specialists are employees of the firm.

5. It is a tremendous advantage to have the engineers right there when construction problems come up.
6. Less construction problems come up because the in-house engineers are always much more conscientious. They spend much more time doing their job to make sure everything works. They spend more time coordinating. They spend more time inspecting the job.
7. The quality of the work is better because they are more concerned about the reputation of the architectural firm. They are more personally involved in the job. It is really "their" job not someone else's job. Also the systems are more integrated because of the increased preliminary involvement.
8. The in-house consultant becomes more familiar with the architects drafting standards and style. He is not having to change his sheet layout and style to match whatever architect he happens to be working for at the time.
9. The job will cost less by using in-house consultants because out of house consultants are usually paid on a percent of construction cost so they always use oversize and expensive equipment so that their fee will be higher. It would take them the same length of time to design an economical job. The consulting engineering firm has a hard time making a profit because the architect usually pays him 60% of his own fee on that portion of the work. The consultant can only make a profit by designing expensive equipment in a short period of time.
10. The in-house engineer can be paid exactly the same wage as the consulting firm's engineer so he can have the same experience and ability. He also can spend the same amount of time keeping up with the new developments in his field.
11. There is absolutely no problem with the in-house engineer being too busy or not busy enough. All the architect has to do is keep the proportion of these particular specialists in correct proportion to the rest of the firm.

An example if the electrical portion of all jobs averages 10% of the construction cost. The architect pays electrical consultants cost 6% of his gross income. All he has to do is have 6% of his total wages and overhead go to pay for in-house electric engineers. The minimum firm size to have one full time electrical engineer would then be 17. If the firm is smaller than 17 the only solution would be to have a mechanical engineer that spent part of his time doing electrical. The problem of carrying employees on the payroll during slack times is no different for engineers than architectural employees. During slack times the firm must lay off some of it's employees. During good times the firm must add new employees to handle the load if the firm desires to keep all their value of employees they must generate themselves some work. If one has the proper proportion of in-house engineers then keeping the architectural staff busy will automatically keep the engineering staff busy.

5. The Future Of Architecture

The future of architecture can be broken down into 3 groups:

1. Client The need of society change and building functions change.
2. Building Process New discoveries in science and technology change the materials and methods of construction.
3. Practice New design tools like special cameras and computers; new management techniques; comprehensive services like programming and construction management.

The practice of architecture is becoming more complex.

The general public is becoming more aware of ecology and his environment. Many new construction projects must file an environmental impact statement with the public.

Money has become tighter. Lenders are asking for equity participation and preferred dividends. Real estate is becoming a popular form of investment. Real estate investment trust corporations are being formed. There are new tax advantages in real estate. Large corporations are getting into real estate development. In an effort to come to grips with rising costs, owners and developers are expressing an interest in more sophisticated management techniques. Many of these techniques, spun off from the space program, are in widespread use. Examples are critical path method (CPM), and "Fast-Track" phased construction.

The cry everywhere is for intelligent project management. The computer is being used for project scheduling. Time is money. In the future, time will be as important as money.

The "systems" approach to building is a start on the standardization of building parts and standard architects details. There are 3 types of building systems:

- a. "closed" system -- a "stock plan" of pre-fabricated buildings.
- b. "open" system -- components that can be arranged in different ways.
- c. "universal" system -- an "erector set" system capable of building anything in a variety of ways.

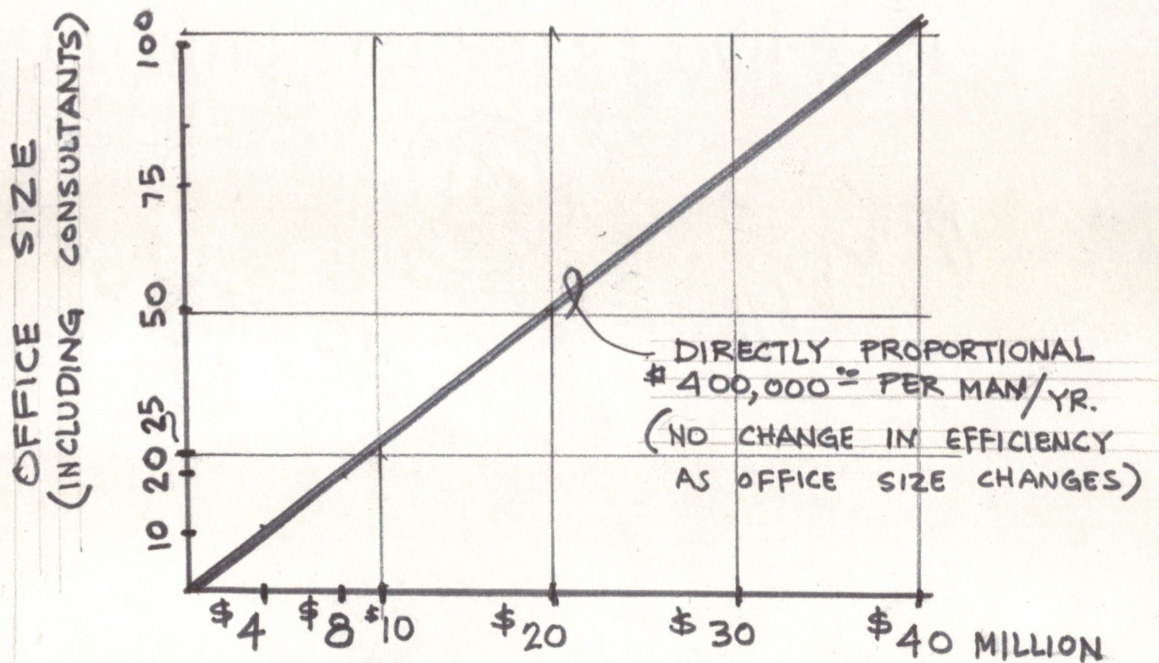
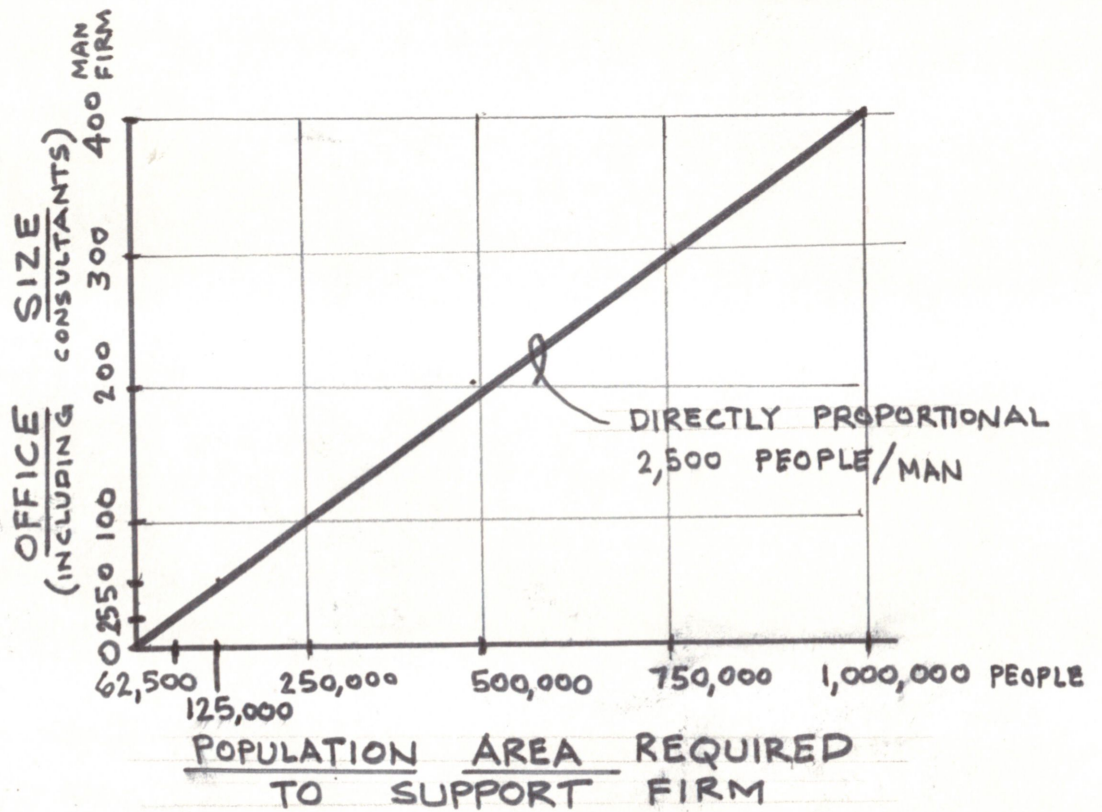
Industrialization of buildings is just starting. The factory can be in a permanent location. It can be moved to the site. The 3 types of systems are:

- 1. pieces -- pre-fab col's, beams, panels
- 2. panels -- pre-cast, load bearing, pre-finished
- 3. boxes -- stack up

The manufacturer is being brought into the design. Most of these systems save much time. Another new concept is "continual delivery" where a campus is organic -- it never stops growing. Design-construction is not considered discrete packages. Architects are using sophisticated management in their own offices. Examples are CPM, joint ventures, new forms of office organization, The architect as the developer.

6. Typical Firm Income Data

The construction industry's contract value is approx. 100 billion dollars in 1973. This is 10% of the nations gross national product. This is \$500.00 per person. 33% of this is non-residential buildings, 45% is residential, and 22% is non-building construction such as highways and utilities. The source of all activity is the owner. The architects design only approx. 32% of the total 100 billion which is \$32,000,000,000.00. There are approx. 80,000 architectural and related engineer principals and employees so this gives an average construction of \$400,000.00 per man/per related engineer employee or principal per 2500 people. Probably about one half are licenced architect per every 5,000 people. By the year 2,000 the country will need double the facilities. There are just the right amount of architects now for the 32% of the work that they design. If there were more architects right now, they would have to design proportionently more work. By the year 2000, the economy can support twice as many architects as there are now. So there is plenty of room for a new firm. 50,000 people will support one twenty man firm including consultants.



TOTAL MILLIONS OF WORK REQ'D.
PER YEAR TO SUPPORT OFFICE

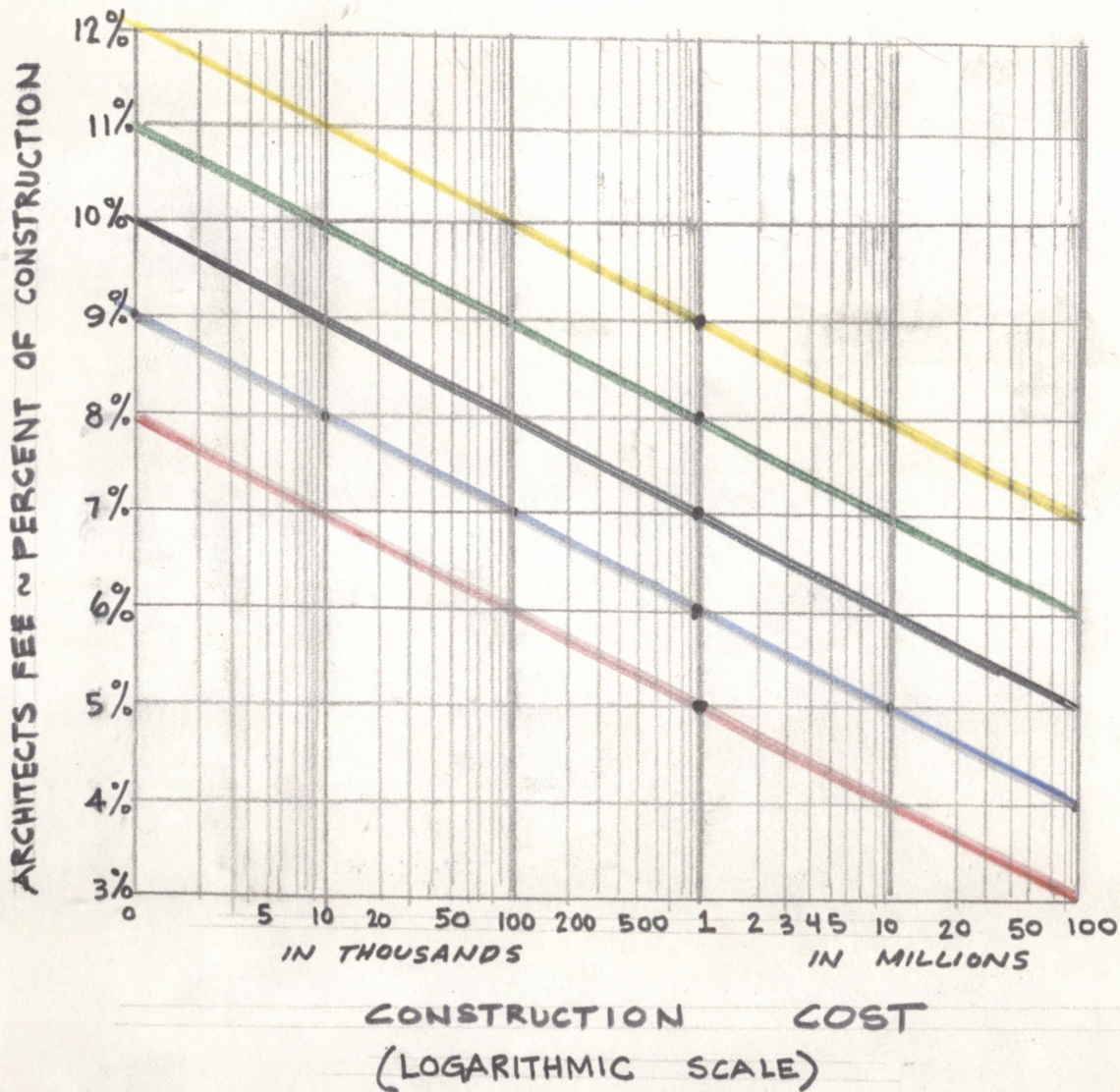
There are four methods of compensation to the architect by the owner. They are:

1. Percent of construction cost
2. Multiplier times direct labor cost
3. Fixed Sum
4. Cost Plus

The fixed sum and cost plus usually give the architect the lowest profit. They are both seldom used. The multiplier times direct cost gives a satisfactory profit provided the architect can keep his overhead down. The average multiplier used by architects is 2.2; while 2.5 is recommended. This method is really a hourly wage of approx. \$15.00 per hr. There is no incentive for the architect to do the job quickly. 90% of all architects use the percent of construction cost method. This gives the best profit and seems to be the best method to use. However, the architect must be very careful to charge an adequate rate based on the size and complexity of the building. One disadvantage to the owner is that there is no incentive for the architect to design an economical building. Also, the architect can make a great profit by doing a quick job. There is a lot of competition between architects. Many architects cut their fees to get jobs; especially small firms or new firms. A large firm cannot afford to cut the fee. The standard fee schedule calls for an average fee of 7%. The average fee charged today is 5.5%.

Low fees bring in no profit. Also, low fees result in incomplete service. It is best to stick to the recommended fee schedule if possible. Also, the basic fee schedule is for basic service. The architect must charge extra for comprehensive service. The architect should insist that the owner pay him portions of his fee as he finishes each phase. This should be in the same proportion as he spends on each phase. Example:

Program -- 10%
Schematic -- 10%
Design Development -- 10%
Contract Documents -- 50%
Bid and Const. Admin -- 20%



PROFESSIONAL CHARGES FOR BASIC ARCHITECTURAL SERVICES

SLIDING SCALE PERCENTAGE BASIS

	9%	EXCEPTIONAL: INDIV. RESIDENCE; MUSEUM, INTERIORS
	8%	SPECIALIZED: BANK, CHURCH, HOSPITAL, LIBRARY
	7%	STANDARD; OFFICE, SCHOOL, STORE, HOTEL.
	6%	REPETITIVE DESIGNS; HOUSING; APTS.
	5%	UTILITY BUILDINGS: WAREHOUSE
TYPE	BASIC RATE	TYPE OF BUILDING

The income of an architectural firm comes from the fee paid by the owner to the architect for his services. The average fee is 5.5% of construction cost. The average architectural office designs \$4000,000. in construction per man. This includes the consultants. So, the average architectural firm has a gross annual income of \$22,000.00 per man. There is no variation in these figures due to firm size. A large firm is no more efficient than a small firm. There is reduced cost by mass production as in the manufacturing industry. A large firm is simply several small firms put together. The average ratio of employee to principal is 5 to 1 in all firm sizes. The average job is approx. \$150,000.00 giving the average fee of \$8,200.00. I have found that there is no real difference in the breakdown of a firms income whether they have in-house consultants or not. The consulting firms operate the same way and have the same breakdown of expenses. The breakdown of an architects gross income is in 3 parts:

1. Direct costs
2. Indirect costs
3. Profit

Direct cost is any expense that can be directly attributed to a specific project. Direct cost is 90% salarys.

The rest are costs that the firm wouldn't of had without that job. Examples are travel, long distance phone calls, printing, etc. Expenses that cannot be broken down go into indirect expenses.

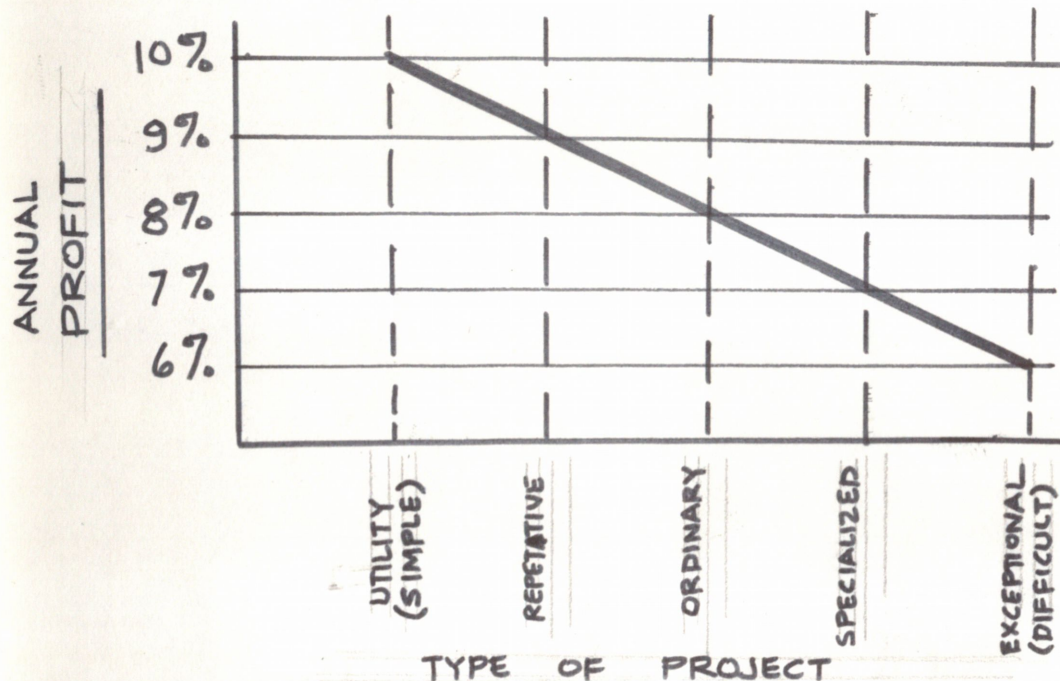
Indirect cost is the overhead. 50% of indirect cost is salaries. The principal's and secretary's salaries are mostly indirect. Any time an employee is not working on a specific job it is indirect time. This includes slack times, vacations, holidays and paid sick leave. Other examples of indirect cost are employee social security taxes, employee benefits, rent, utilities, supplies, equipment, telephone, maintenance, printing, travel and auto, taxes and licences, insurances, dues and fees, services, promotion.

Profit is what is left after paying all costs of doing business. The profit varies from job to job. The average architect loses money on 1 out of 4 jobs. So when a firm makes a high profit on one job it must put most of it in a reserve account to cover the jobs that lose money. The average profit of all firms is approx. 8% of the gross annual income. This per-centage has been going down the last several years. The problem is that architects are not getting a high enough fee.

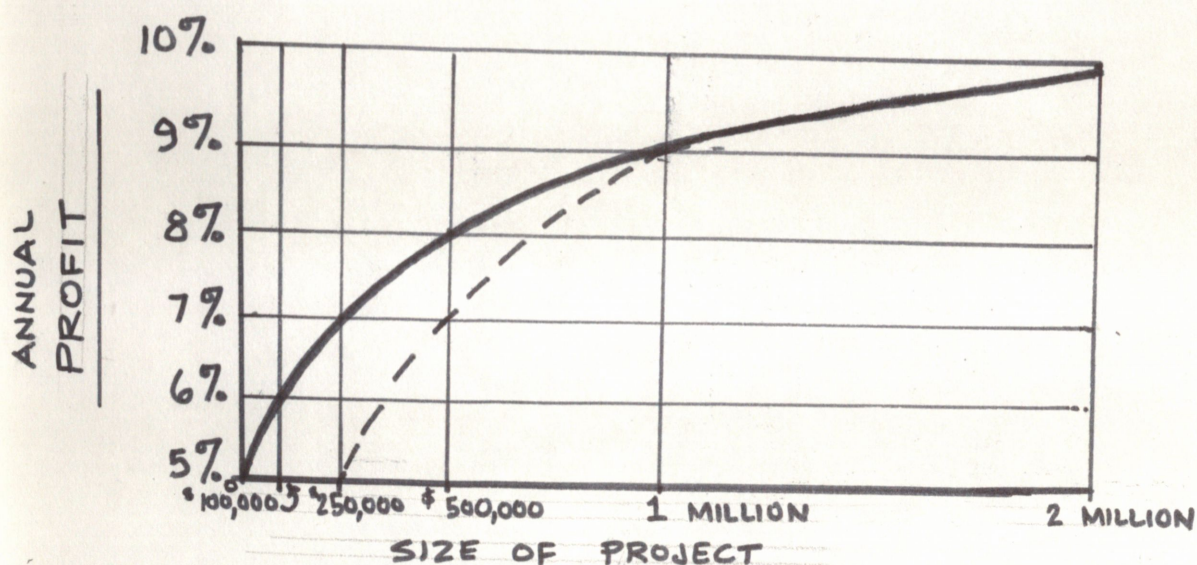
If all architects would stick to the standard fee schedule there would be no problem. But cutting the fee from, say, 6% down to 5% is really cutting off all the profit. It costs so much to do a job. There is several things that can be done to increase profit and they all fall under the jurisdiction of management. 66% of all income goes for salaries of the architects and engineers. About half of this goes into the preparation of working drawings. The main thing that can be done to increase a firms profit is to budget the man hours spent on a particular job, and to cut down on the indirect man hours. There are several ways to do this:

- a. Build up the firms reputation so that it can get the recommended professional fee. Explain to the client that the firms comprehensive service is worth more to him than he pays for it.
- b. Explain to the client that it costs so much to perform a service, and that if he insists on a reduced fee that the service given must be reduced. Reduced service leads to problems during construction and an inferior building.
- c. Explain to the client that he must pay for any changes made after he accepts a scheme, and explain that any delay made by him in accepting a scheme will increase the time required to get the plans done.
- d. Explain to the client that a good program will give a better building and will allow the architect to do his job more efficiency. It is a fact that jobs with a good program gave more profit to the architect.

- e. Explain to the client that it is important to select a good contractor. It will give him a better building and there will be less problems and time delays during construction. The job runs smoother when there is a single contract and the mechanical and electrical are sub under the general. It is a fact that architects make more profit on jobs that have a good contractor.
- f. Pay a little extra to hire more qualified people. They will do better work and require much less supervision. Also, mistakes are costly. Spend time to check and coordinate drawings.
- g. It is absolutely essential that the firm gets adequate work to keep the employees busy on specific jobs all year long. Nothing cuts into profit faster than carrying men on the payroll during slack times. It is important to budget the work to give a uniform load thru out the year. This is very difficult to do so a firm might be forced to adding new men during very busy times and laying them off during slack times. This is very bad for employee moral. This all goes to show how important it is to have a good man handling development and management.
- h. There is also a relationship between job type and profit; and job size and profit. Architects make less profit and in fact lose money on projects such as custom residences, churches, banks, theaters, hospitals, clinics, and libraries. They make more profit on simple, repetitive jobs such as apartment house, office building, hotel, motel, schools, etc. It has also been found that less profit can be made on any federal government job. Not much profit can be made on projects for one man private clients. The best profit comes from private corporations and local public agencies. Architects make much more profit on large projects costing over 1 million dollars than on small projects. All of this means that the architect should try to go after the lucrative jobs and raise his fee on small jobs of a specialized nature.



PROFIT TO PROJECT TYPE
(AVERAGE OF ALL FIRMS)

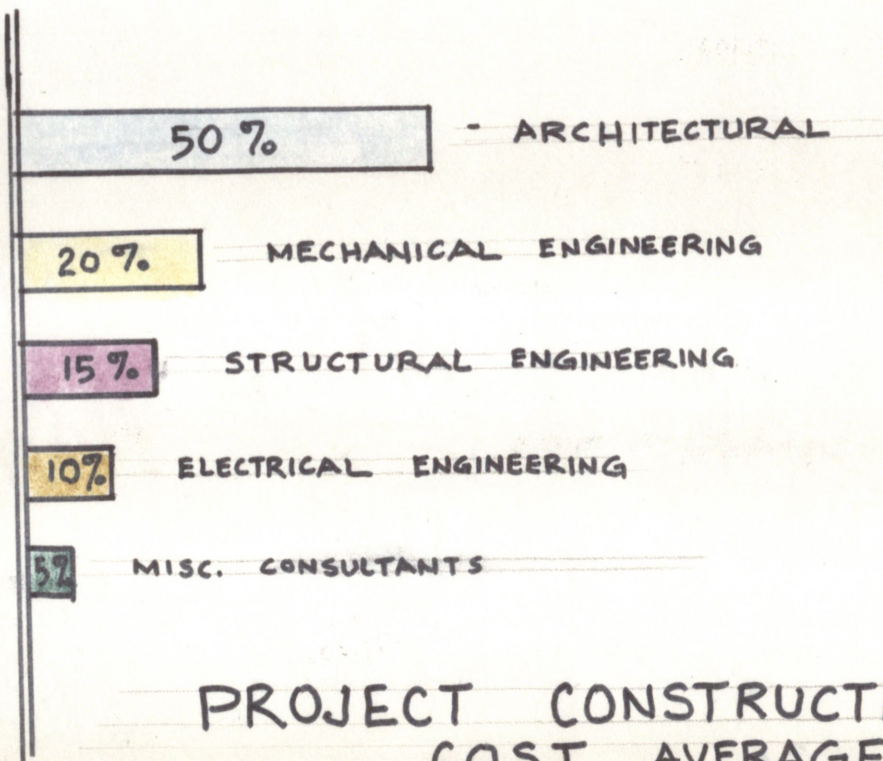
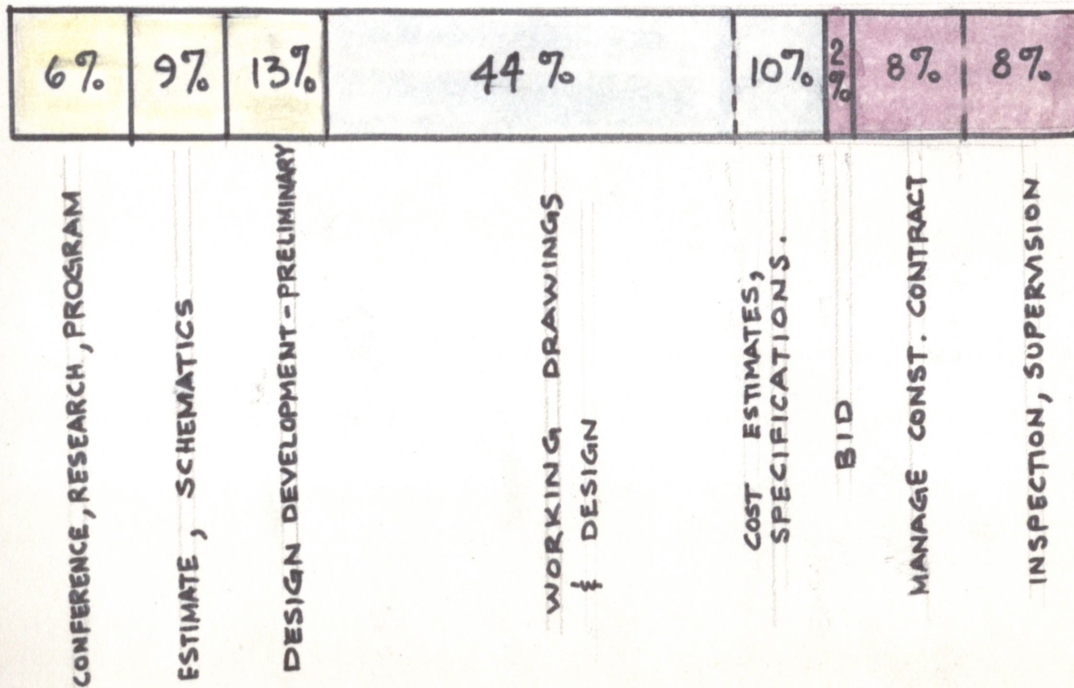


PROFIT TO PROJECT SIZE

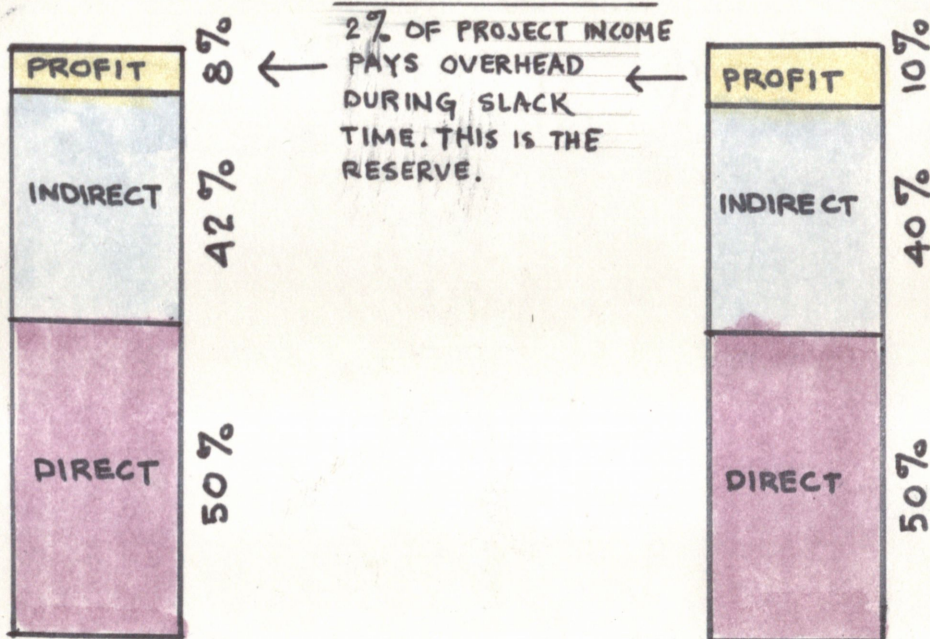
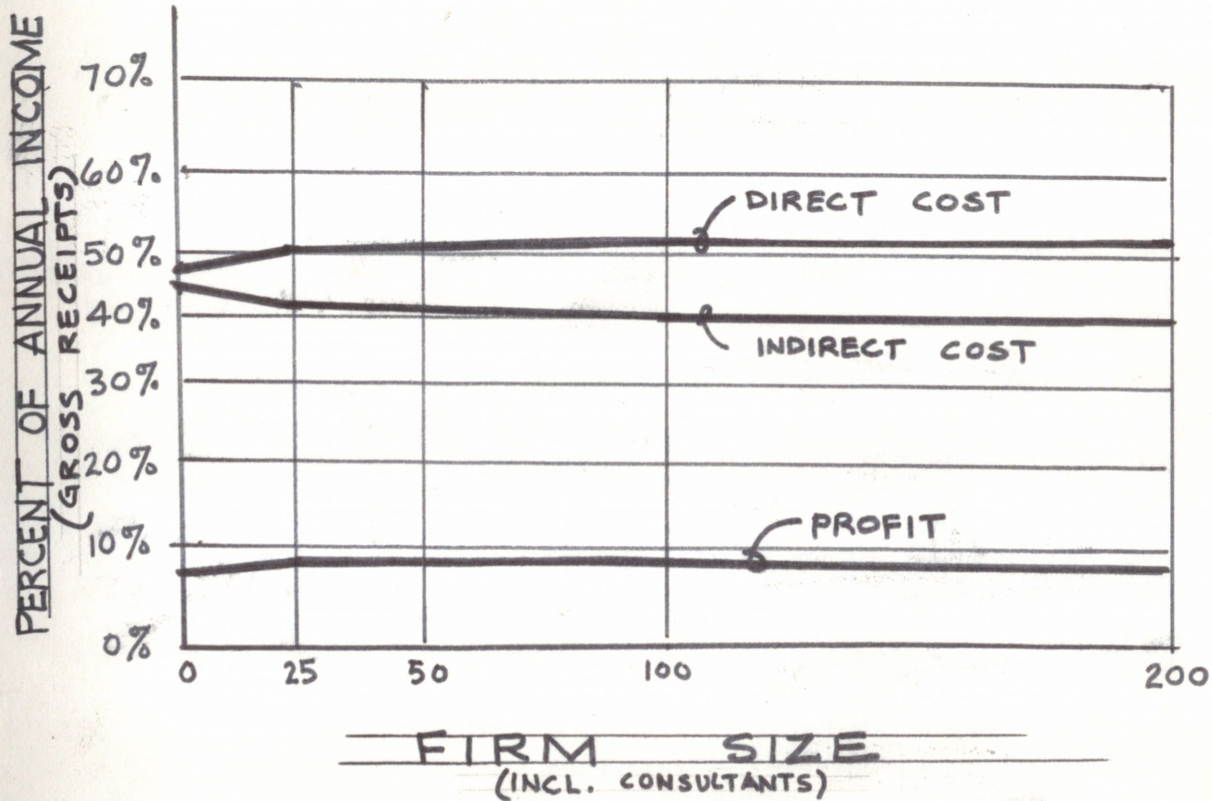
NOTE: A LARGE FIRM MAKES LESS PROFIT ON SMALL PROJECTS
SEE DASHED LINE.

BREAKDOWN OF DIRECT INCOME BY PHASE OF SERVICE

(INCL. ENGINEERING)



INCOME BREAKDOWN



AVERAGE ANNUAL
INCOME BREAKDOWN

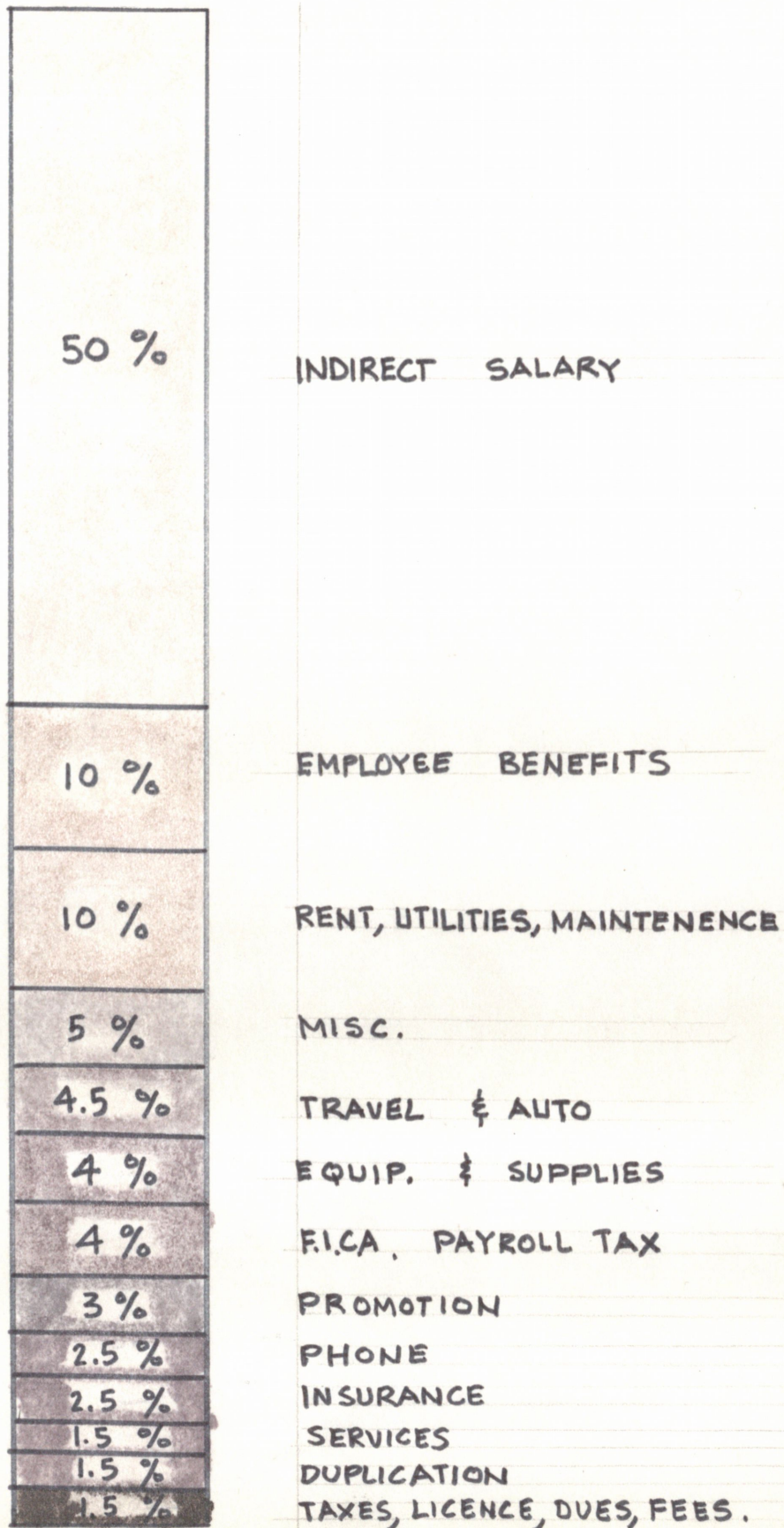
(AVERAGE OF ALL FIRMS)

AVERAGE INDIVIDUAL
PROJECT INCOME

(AVERAGE OF ALL FIRMS)

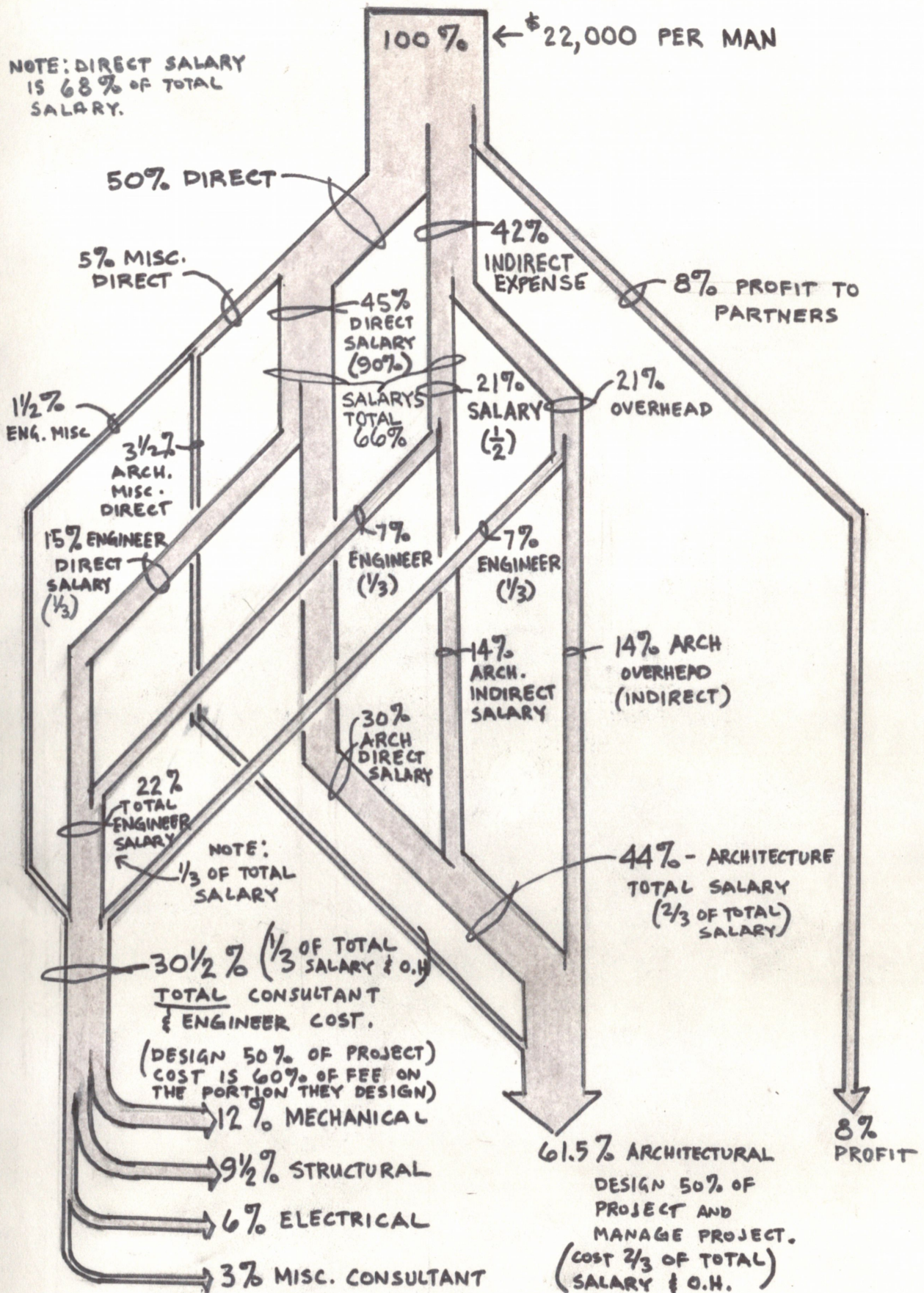
NOTE THAT THE AVERAGE FEE
IS 2X DIRECT COST.

ANNUAL INDIRECT EXPENSE



% OF GROSS ANNUAL RECEIPTS

NOTE: DIRECT SALARY
IS 68% OF TOTAL
SALARY.



ANNUAL INCOME BREAKDOWN

(AVERAGE OF ALL FIRMS)

7. Firm Size And Organization

There are three basic sizes of architectural firms.

1. Small 1-10
2. Medium 11-30
3. Large 31-100

Only 1% have over 100 employees. 80% of all firms are small firms. In the last 20 years the average size of office is increasing but small offices are typical of the profession. There are many one man firms. A one man firm is not practical or efficient.

- a. Because someone should be at the office at all times for contacts.
- b. Some work can be done at a lower rate of pay than a principal is entitled.
- c. There would not be enough work to keep a secretary busy full time.

A two man office has usually the principal and one full time draftsman. The ideal employee is a recent graduate who hopes to practice someday. The employee should have intelligence, a basic background of knowledge of construction and a degree of skill in drafting and design. Since he is an architect in training and will experience all division of practice he should be willing to work at a reasonable pay. He must be able to make workings drawings from preliminary sketches, and most important of all he must know when to make decisions or when he should refer to the principal.

The small office of 3 to 5 usually still has one principal who finds time to take part in all divisions of practice. The principal of a small firm is best a generalist instead of a specialist. Also, the best location is in smaller communities. Like the 2 man firm the principal gives very little responsibility to his subordinates. A firm of this size could complete the plans for a one or two million dollar building in a reasonable length of time. Since jobs of this size will have engineering problems which cannot be solved efficiently by architects; and the firm is too small to keep a full time engineer busy; consultants must be employed. The draftsmen in this size office must be versatile. One of the employees should have over three years experience. If the firm is doing several small projects simultaneously the group may be divided into two groups; each under a job captain. This size firm has a full time secretary.

The small office of 6 to 10 men usually has 2 principals or 1 principal and 1 or 2 associates. The associate is given responsibility otherwise assumed by the principal.

The duties and responsibility can be broken down as follows:

1. The Senior Partner
 - a. all non-operating activities like legal and financial.
 - b. most development and public relations
 - c. prelim. presentation
 - d. production conference
 - e. general management
 - f. chief responsibility for the design
 - g. correspondence and travel
 - h. project manager of some projects
2. The Second Partner Or Associate
 - a. responsible for engineering design and consultants
 - b. administration of construction contract and inspection.
 - c. research
 - d. project manager of some projects
 - e. assists with development, client, conferences, prelim. presentation, and design
 - f. correspondence and travel
 - g. specifications
3. The Chief Draftsman Or Senior Draftsman Is In Charge Of The Architectural Drafting Dept.
 - a. responsible for production of working drawings
 - b. directs all draftsmen-- interpretation of the design, gets information from the partners to the employees
 - c. production management-- assists principal with the budget of manhours and cost accounting
 - d. helps with the project cost estimates
 - e. helps with specifications
 - f. checks shop drawings and checks plans
 - g. drafting

4. Job Captain. Has similar duties as the chief draftsman but is responsible for only a specific job. He is an assistant to the chief draftsman and assistant to the project architect.
 - a. a go between the project architect and the other employees
 - b. responsible for production of working drawings, directs draftsmen
 - c. does some design development and keep project records
 - d. drafting

The office size may vary with the volume of work but the work should be managed so the key personnel are kept permanently. Good employees are hard to find.

Small firms have the following advantages:

1. Employees get to experience all division of practice and are closer to the project. Employees do several functions.
2. Management is less formal and less complicated so principals have some time for architecture. There is better communication.
3. The organization is less formal. Employees like this.
4. There is less pressure and worries for the principal.
5. If one man does all the work on a project it is very efficient because there is no time wasted on showing someone else what to do less management. The more draftsmen that work on a job the less efficient it is.

The disadvantages are:

1. There is less chance for advancement unless the firm grows to medium size.
2. Clients, especially on big jobs are demanding comprehensive services.

It is impossible for 1 man to know everything and the firm is too small to hire full time specialists in all of these fields. To offer a complete and high quality service the architect must hire consultants. A small firm might not afford the services of all these consultants. It would take half the income of the firm and thereby reducing the profit in half. Also there is not the ideal close contact of in-house specialists like large firms have.

3. Small firms cannot afford specialized expensive equipment, like computers & reproduction equip.
4. The small firm cannot complete large projects over 4 million dollars in a reasonable length of time.
5. The small firm has trouble getting clients, especially large jobs over 1 million dollars. These jobs that are given to large firms are the ones which give the best profits, and are the most exciting.
6. Small firms usually charge less fees they usually provide less service.

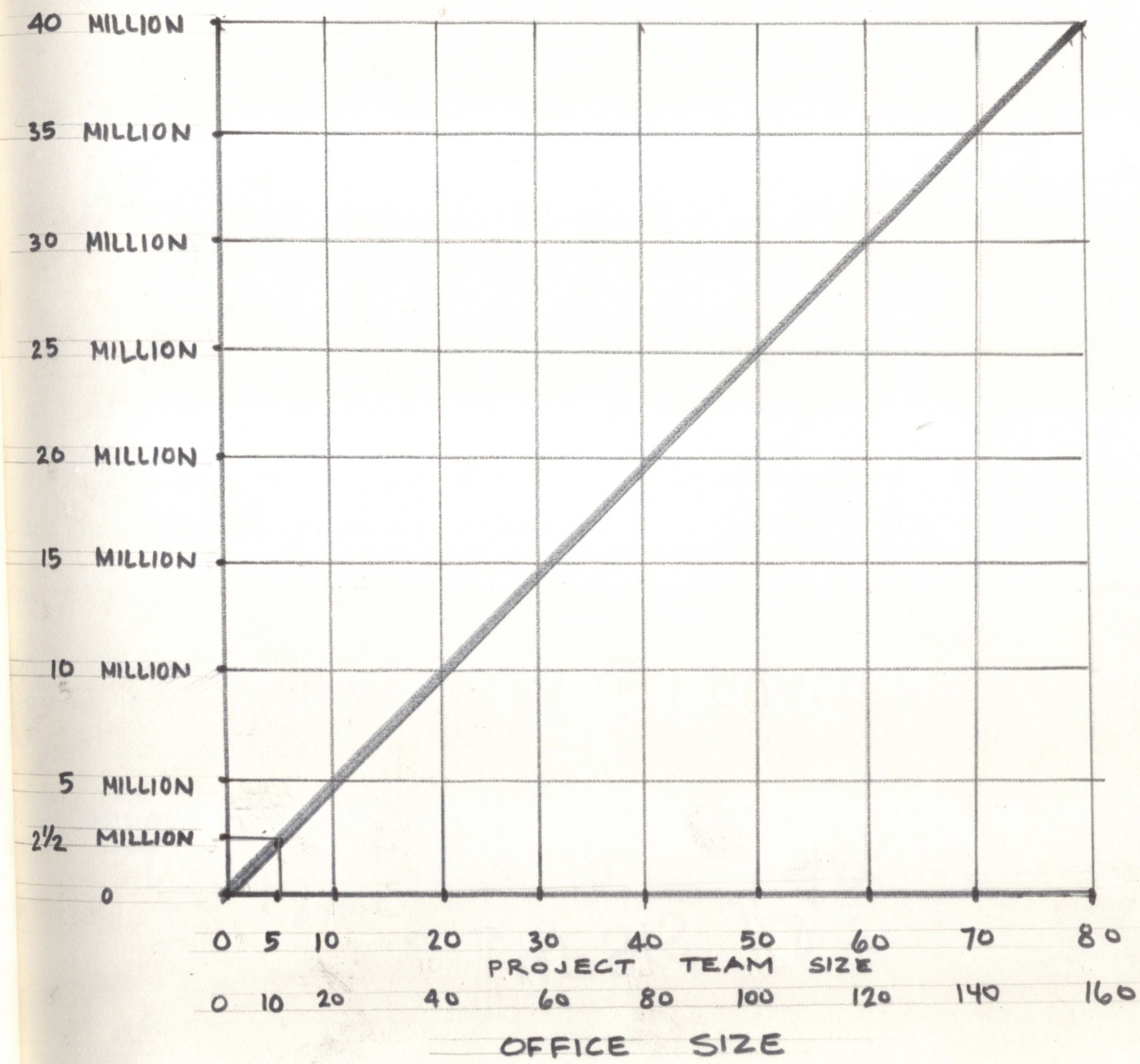
The medium size office of 10 to 30 people usually has from 2 to 6 partners. The average ratio of partner to employee is 1 to 4. The organization becomes more formal and there is much more management. The partners find themselves spending full time on management and development. Medium size offices are slowly disappearing. There will always be small offices to do the small jobs and residences. But as projects become larger and more complex; and as service becomes more comprehensive, the firm adds new specialists and engineers.

The medium size firms thrive on million dollar projects but are in direct competition with the large firms. So most medium firms are growing into large firms. The large firms are getting larger. The competition is getting tougher. In a medium size firm the employees must specialize for maximum quality and quantity of production. Some draftsmen do general drawings, some details, some do design and others do engineering drawings. For those draftsmen who want to enter practice as a principal it is useless to specialize. They must be shifted from one field to another. Extreme specialization is not the most efficient because the employee gets bored and to get the best effort out of employees they must be kept interested in the projects. Production line methods kill interest. An employee should relate to the entire project. A medium size firm has the advantages of both the large firm and small firm. In a medium size firm the responsibility must be divided. In a typical 20 man firm there would be 4 partners and maybe 4 project managers who might be associates and a separate design department. The draftsmen would be divided into 4 categories: job captain, senior draftsman, draftsman and architect in training. The typical 20 man firm would have one full time mechanical-electrical engineers. The partners

would each do some development and each might be in charge of a specific department. One partner usually assumes the general office management. In the medium and large firm must be control. A 20 man firm might design a 5 million dollar project and might do a total of 10 million dollars a year. So a medium size firm should locate in a large and growing city. A minimum population to support a 20 man firm might be 50,000 people.

The large firm of 31 to 300 always has several departments. The organization becomes very complex. A large firm can be thought of as several small firms joined together to share many specialists, common management, and physical plant. This form gives the "small office" a larger resource which helps to give a better service to the client. Large firms locate in areas of concentrated population and usually practice in many states. When a large portion of a firms work is in another state it is advantageous to open a branch office. It might start out as only one man to handle public relations and development. Many clients prefer to deal with a local firm. The large firm usually designs very large projects from 5 million to 100 million.

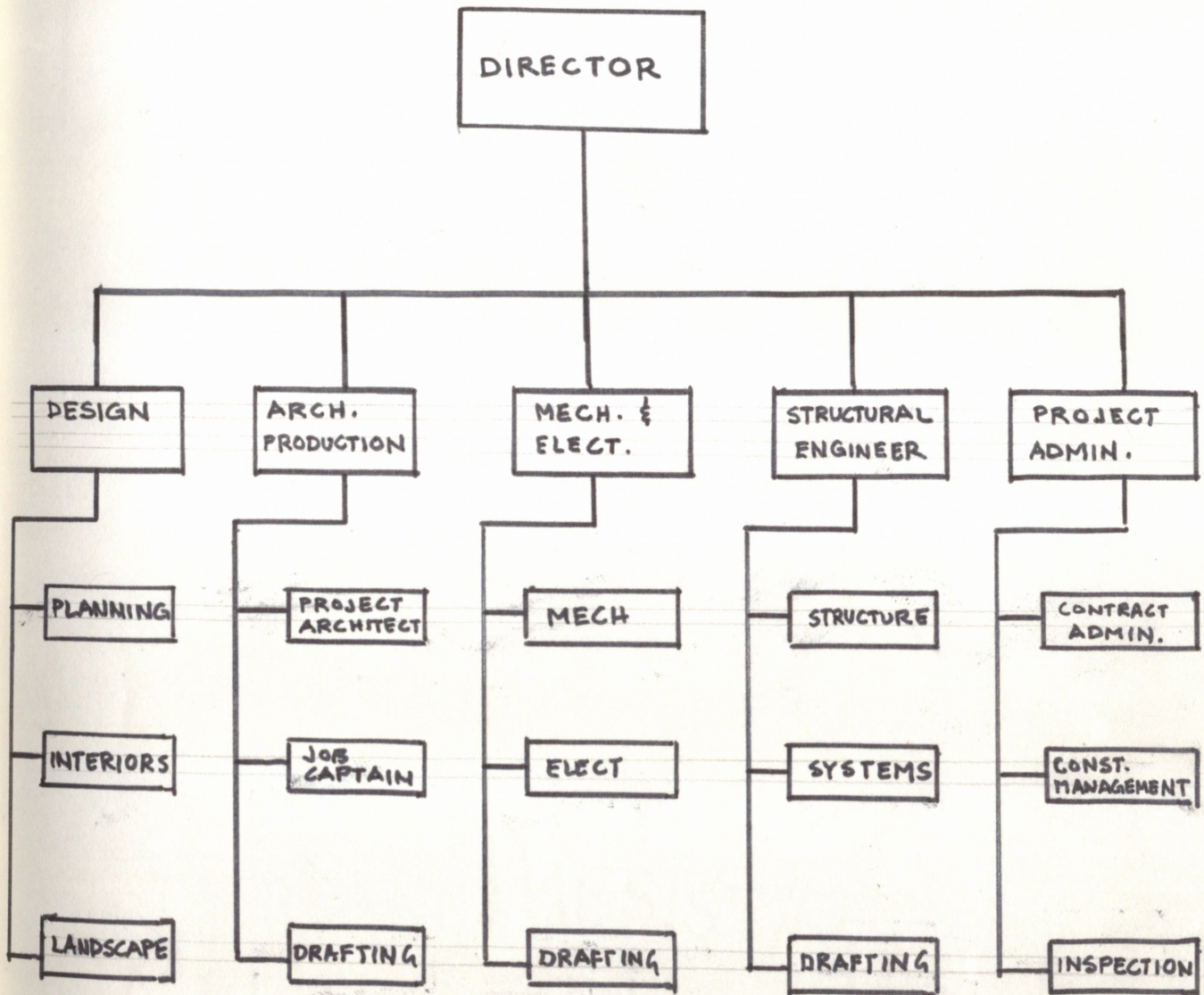
PROJECT SIZE



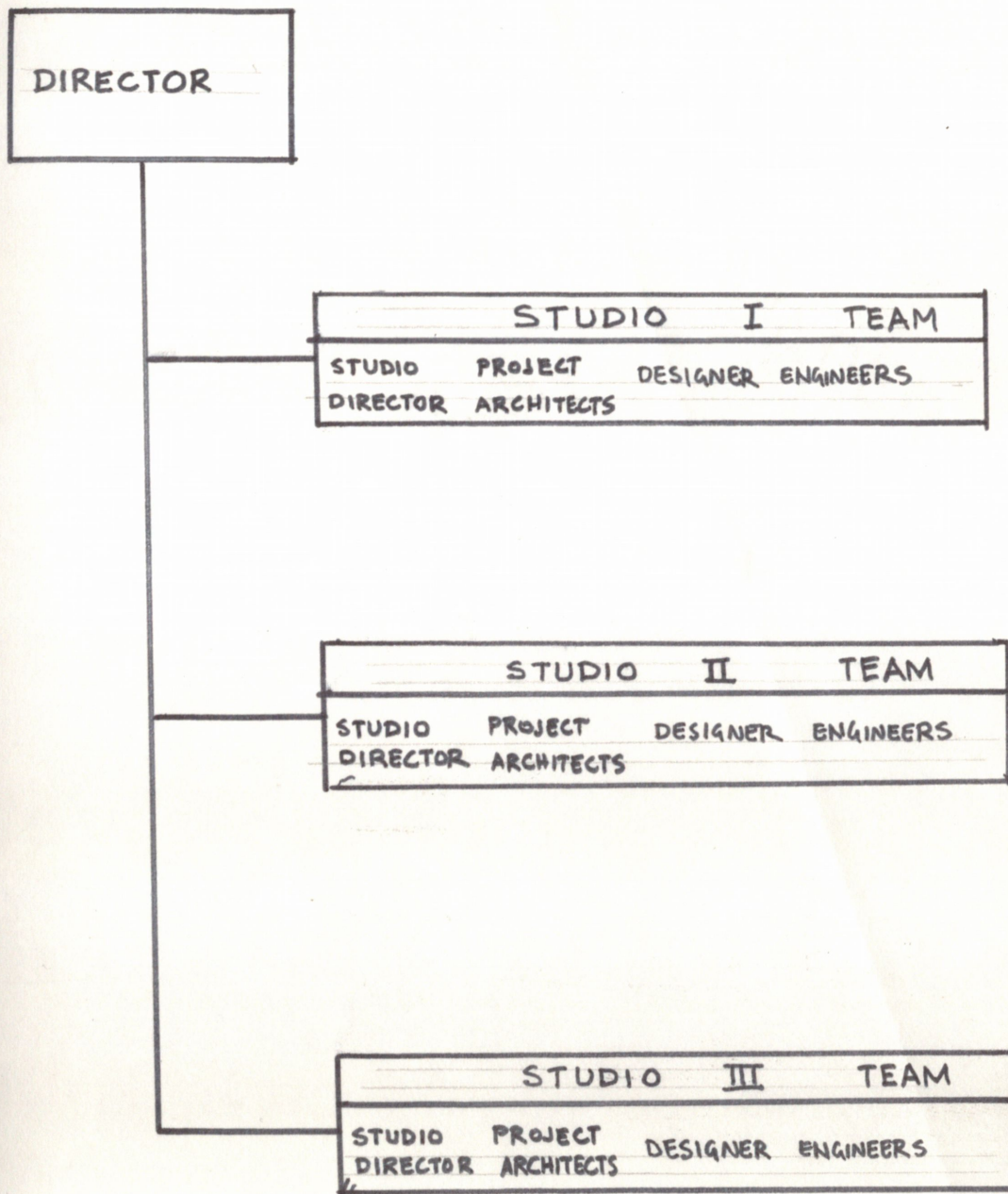
ASSUME OFFICE CAN PUT HALF IT'S STAFF ON ONE PROJECT FULL TIME. BALANCE OF STAFF ON OTHER PROJECTS. OUTPUT = 1/2 MILLION/MAN/YR.

MAXIMUM SIZE PROJECT A FIRM CAN HANDLE
DESIGN TIME = 1 YEAR

VERTICAL ORGANIZATION



HORIZONTAL ORGANIZATION



These large projects require the services of many specialist. In order to keep these specialized employees busy the firm must always have several large projects on the boards at the same time. A large firm will usually have a full time office manager, a full time man in development, and usually a full time man in project administration and production management. These men are architects because a business management executive is not suited to make the architectural decisions. By having a full time project administration department the project architects are free to spend their time on architecture rather than administrative detail. The partners in a large firm are usually in the ratio of 1 to 4 employees. There are two basic types of internal organization:

1. Horizontal
2. Vertical

The whole concept of organization is the division of management responsibility. The basic rule is that a man's responsibility must match his capability. The division of management is required in large size firms because the partners can no longer be directly involved in every aspect of every project. No matter which of the two types of organization is used there still must be one man designated as the project architect who takes the ultimate responsibility for the project.

A large size firm needs a second level of management besides the partners. The type of internal organization is influenced by the type of legal organization. The typical problem is that the partners confuse their ownership right with their management right. In a large firm it is inefficient to have all the partners vote on every management decision like they would in a true partnership. In this respect the corporation legal firm is best for large firms. The type of internal organization must be suited to the type of projects the firm usually designs, and must also be suited to the firm size and type of employee. If a firm specializes in one or two building types it should be organized into a team department for each type. Architecture is a research profession. The best way to get a client to pick your firm over other firms is to be a specialist in that building type. This means that the firm is an expert at doing the job. One can then command a large percent of the work in that field in the area. It is also nice to specialize in a field that one is interested in. But, if bad economic times slow construction in that field the firm is in real trouble. It is hard to specialize in another field overnight. Specializing in one particular phase like design or engineering is one thing. Specializing in one job type as well might be boring.

If the firm is large and does large projects it is best to have a vertical organization where a project moves from department to department. This is very efficient but it does not give an employee a chance to work on all phases of a project unless he is the project architect or job captain. The firm must be careful not to turn into a plan factory by insisting on over specialization. Most large firms use the vertical organization especially when they add many specialists to their staff. If a firm is small and does many small projects it might be better to use the horizontal type of organization, where the office is broken down into several studios. Each studio is like a small office and designs the entire project from start to finish. This is good if the members of the studio are generalists and can do all phases of the work. Each studio must be matched to its task. The advantage of the studio is that the employees have a closer relationship to the job, work harder and get satisfaction of working on all phases of the project. It gives all the advantages of a small firm.

There can also be a combination of the horizontal department and the vertical studio.

It would have the advantages of both. This is the team approach. The employees are organized by their specialization into departments but each project has a team set up to solve the problem. This team follows the project from start to finish like the studio but instead of generalists it is made up of the specialists required to solve the problem. Each team must be matched to its tasks. The team has capabilities in in management, design and technology. The advantages of the team is that it gives the sense of belonging like the studio does; and problems are solved by the group, each of whose opinions are valued--but more so when matters fall within his area of specialization. The entire team gets credit for the design. One advantage of a team is that all members are in from the start of the program. Some firms use squatters that visit the client for one week and work out the concept together. This gives a better chance of pleasing the public because of the diversity of opinion. The team is a genius because each man knows his field better one man can know all fields. This gives a higher quality design. One problem is that the team must learn to work together with a common goal.

Another problem is communication. When the person is not working on the project he reverts back to his department to be assigned to another project team. Some specialists are assigned permanently to a department and are consulted as the team needs his services.

The advantages of a large firm are the many resources available like the many specialized people. The large firm is better equipped to do large projects and complex projects. The large firm gives a more comprehensive service. Also most large firms are constantly growing thus providing a good chance for advancement. The disadvantages of a large firm are that the main interest tends to be to just please the client and make money. The office turns into a plan factory. It is hard to be innovative or be capable of distinction. The quality of performance drops in design but it is far superior in technological competence and construction economy and practicality. A large firm does not have the flexibility of a small firm and there are more pressures on the principal. One main disadvantage of a large firm is that employees are forced to specialize and are not given any interesting or creative work.

Not all work is creative or interesting to an active mind, but if each man is given some work that calls for his best efforts, the quality will be better and the employee happier even if the quantity is not better.

8. Legal Structure

There are three types of ownership,

- a. sole proprietor
- b. a partnership
- c. corporation

A. Sole Proprietor

Advantages:

1. Can retain full control of firm.

Disadvantages:

1. To grow to large size takes a principal with brilliant talent, drive, social connections, genius of salesmanship, and business sense. No one person has all these qualities so firm must remain small or take in partners.
2. As the firm grows the partner has no time for anything except management.

B. Partnership

Advantages:

1. The load of the principal can be spread out. The ideal partnership is one where the partners compliment each other and each has his own responsibility.
2. A way to keep exceptional employees is to make them a partner in the firm where they get full recognition for their work.
3. All income is taxed only once. The partnership itself pays no taxes.

Disadvantages:

1. Benefits to the partner are not tax deductible.

2. There is a big gap between the partners and the employees. And there is less opportunity for advancement. It is harder to get a team effort.
3. Often partners are at odds with each other and have cross purposes and overlapping responsibilities. This takes more conference time and re-drafting. Personal friendly relationship interferes with business. An equal partnership assumes equal talent. Each partner should be a true architect in his own right.
4. Partners often get mad and quit, taking away much of the firms capital and clients.
5. A Jr. partner is a bad thing because as soon as he excels the senior in some things he wants an equal share or he will quit. Jr. partners are given too much too soon and don't appreciate it.
6. Death of a partner causes problems.

C. Corporation

Advantages:

1. There is limited liability.
2. Possibly less taxes. Any sale of stock is treated as a long term capital gain. And benefits paid to principals is tax deductible.
3. The corporation is a separate legal entity so the partners are employees. The principals can get benefits such as disability, medical and life insurance and a retirement plan paid by the corporation and it is tax deductible.
4. The corp. has permanent existence so no problem when a partner dies or quits.
5. It is easy to divide the ownership. If employees are share holders there is more incentive to work hard. Also there is a better chance for advancement in a corporation form.

6. It is a more efficient organization form.
7. Capital may be raised by selling stock to employees.
8. Gives good client relations when the client is also a corporation.

Disadvantages:

1. Costs more to establish but the cost is tax deductible.
2. The partners must now pay unemployment and worker compensation and more social security tax. But the cost is tax deductible.
3. The increased benefits cost the firm more.
4. The principals salary must be reasonable, any excess profits are taxed twice-- once by the corporation and once by the employee.
5. There is more red tape, more accounting and legal expense.
6. A profit making image and limited liability downgrades the professional image.

PART THREE

Decisions Of The Firms Operation

1. Firms Goals
2. Management Decisions
3. Organization For Management
4. Organization For Project Process
5. List Of Employees
6. Budget For 1 Year

1. Firms Goals

The primary goal of this firm is to be successful.

This means:

A. Create good architecture and achieve a major reputation as a design oriented firm.

B. Make a good profit

The secondary goal of this firm is

C. To satisfy the employee needs.

A. The primary goal of creating good architecture is a broad statement. Good architecture means to solve the human environmental problem; to create an aesthetic art form; spaces that are exciting and have emotional impact; functional buildings that the users enjoy, are structurally sound, safe and give the owner the most for his money. When a person creates architecture he is designing. Architecture is a design profession. A degree in architecture and a license assure a person has the minimum design ability. But, to create good architecture takes people with better than average design ability. So, the solution to the primary goal is to hire the best talent available. If the firm creates good architecture then it will naturally achieve a major reputation. To do the best job on a building type calls for specialization in that type.

Specialization in a few building types is the best way to get distinction over other firms.

B. To make a good profit calls for getting large projects and plenty of work at a good fee. If the firm creates good architecture and achieves a major reputation then it should have no trouble getting work. But the project must be managed well to get the maximum profit. The firm should have a financial management plan and a good set of books.

If profit and reputation follow from good architecture and good architecture requires talented employees then the solution of achieving the firms goals is to hire the best talent. To hire and keep the best talent takes a good profit so can pay them well. Notice that this all forms a vicious circle.

- a. hire the best talent
- b. so can do the best work and service and get distinction
- c. so can get the best jobs at the best fee and get plenty of work
- d. so can make a good profit
- a. so can pay to hire and keep the best talent
- b. etc. etc. etc.

It forms a circle. The firm must break into the circle at some point and the logical point is: a. hire the best talent. So now the secondary firm goal becomes very important.

FIRMS GOALS

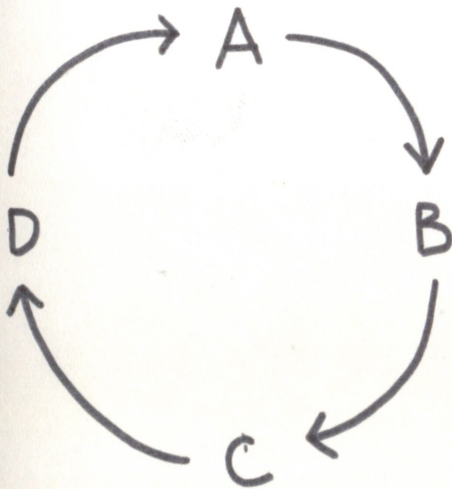
PRIMARY GOAL:

BE SUCESSFUL

1. CREATE GOOD ARCHITECTURE.
2. ACHIEVE A MAJOR REPUTATION.
3. MAKE A GOOD PROFIT.

SOLUTION:

A CIRCLE:



A. HIRE BEST TALENT
B. SO DO BEST WORK
C. SO GET BEST JOBS
D. SO MAKE BEST PROFIT
A. SO PAY BEST TALENT
B. ETC.

START:

HIRE THE BEST TALENT

SECONDARY GOAL; SATISFY EMPLOYEE NEEDS.

C. Provide satisfaction of employees needs. This calls for the correct management decisions.

1. High wages
2. Short hours
3. A share in the profits (a reward for hard work and talent).
4. Interesting work all types of buildings, interesting types, complete service, large projects, small projects, social projects, a chance to become involved in all phases of a project. Belonging to project team. Not have to over specialize.
5. A chance for recognition, responsibility and advancement. A chance for personal growth, the firm must grow.
6. Self image responsibility, recognition, the firm must do good architecture and have a good reputation.
7. A secure job plenty of work
8. Good social relationship with other employees, good morale and esprit de corps.
9. Good physical working conditions-- view, atmosphere, adequate space, equipment, heat, light, plants, and a chance to decorate ones own private area.
10. An efficient and clear-cut organization for the workflow. Everyone knows what his responsibility is and knows what is expected of him and how to do it. Not too much detailed supervision.

2. Management Decisions The Firm Policy

1. Firm Size:

The existing firm size is 25. The goal is to grow slowly to provide a means for advancement of employees. Try not to ever cut the size of the firm to provide security. The ideal size firm is a large firm which can get and do large projects and can have many specialists and engineers.

2. Employee Type:

The goal of the firm is to employee the very best talent available. And to employ specialists in every aspect of architecture. But each specialist will ideally also have a general knowledge of architecture. It is a policy of the firm to only employ people with a college degree.

3. Type Of Practice:

This firm is an architectural firm which does general practice of architecture.

4. Service Offered:

The firm offers complete, comprehensive service including program, cost estimating, feasibility study, site selection and procurement, arrange financing, construction management and interior design.

The firm offers a quality service by qualified employees. The firm provides in-house engineering.

5. Types Of Building Specialize In:

- a. schools and college buildings
- b. hotels and motels and convention centers
- c. shopping centers
- d. hi-rise office buildings
- e. hi-rise apt. complex
- f. recreation and resort complex
- g. ocean developments
- h. earthquake resistant construction
- i. hospitals
- j. banks

Most are large, deluxe, commercial projects for corporate clients. The firms main specialty is resort hotels and condomineums on the beach world wide. Many projects have spaces that are rented and require feasibility studies and economic consideration. The firm does all building types but concentrates development on the above list and tries to get distinction in these types.

6. Area Of Practice:

The firm does resort hotels all over the world and is willing to take a project anywhere. But, most of the firms work is on the west coast.

7. Fee:

The firm charges the full fee as stated in the recommended AIA fee schedule. The firm uses the percent of construction cost method.

The firm feels that to do good architecture requires a complete service at the full fee therefore the firm refuses to do reduced service at reduced fee. The firm's policy is to get clients because of our excellent reputation for doing quality work, complete service creating quality buildings, giving the owner the most building for his money; and not to get picked because of reduced fee. If the client is tight on the fee chances are he is also tight on the building budget and demands more space than he can afford. The results will be poor architecture and a loss of money for the firm.

8. Profit:

Profit is very important to the firm. A large portion goes to build up a reserve account to cover contingencies, to be able to keep the employees paid during slack times, to give capital to grow, the rest is paid to the shareholders. The firm's goal is to keep talented employees very well paid. To insure a profit on each project a manhour budget is set up. The firm also has a financial plan and adequate system of accounts. The main solution for adequate profit is to get plenty of work at the full fee. Reduced fee's will take away all profit. The firm's break even budget calls for a profit of 8% based on total project construction of \$4000,000.00 per employee.

9. Client Relations assigned to one of 4 departments.

The firm's policy is to always use the standard A.I.A. owner-architect contract and to always insist on being paid for each phase as it is approved or stop work. The firm includes the client as part of the design team. At the start the client must be told that any delay in approval of a phase will add that much time until the project can be bid and any changes made after a phase is approved must be paid for extra. Always present a good schematic presentation as the client must be sold on the idea. The more input the client puts into the design team the more likely he will go along with the scheme. It is important to know the client and to stay on good terms for that project. The architectural task

10. Legal Organization: king/action. a. design b. man-

The firm is a corporation. The main reason is so every employee can own a share in the firm. Secondary reasons are limited liability, an efficient form of organization for proper management, and tax advantages. project from

11. Organization For Management: ple make decisions as

The firm's management and responsibility is on several levels. The long range plan is by the board of directors who are elected by the shareholders. The board elects a president who has full control over day to day firm management.

Every employee is assigned to one of 4 departments. The dept. head is responsible for his own dept; supplies, employee needs, assigning work & man power budget, supervising and training of employees, getting the best efforts, work. The more effective the management the less emportant it appears. This the goal.

12. Organization.To Do The Work:

The firm uses a horizontal organization for porject developemtn process. A project team is assigned to each project. Bring together the combination of people who can do the best job for a specific task. Each project team led by a director of facility who is the project architect. He has full responsibility to the client and the firm for that project. The architectural task requires 3 kinds of thinking/action. a. design b. management c. technology so the team is broken down into these three groups. The department heads appoint a leader who is responsible for that group. These three and the project architect stay with the project from start to finish. These four people make decisions as a team. Everyone's opinion is respected but more so when it relates to his area of expertise. These team leaders must learn how to cooperate, coordinate and work together.

13. Employee Relations:

Each must know what his own responsibility is and know what to do without supervision. The first duty of the project manager is to make an estimate of the manpower required, have each dept. head assign employees to the project team, and then assign duties. The project manager keeps a budget of manhours as well as complete records of the project. He is responsible for getting information to those who need it. He is also in charge of construction cost control and construction management. The project designer is responsible for the project concept and space design. Form and function. The firm's policy is as follows: Pay is based on an hourly rate based on a 40 hour week. The hours are from 7:30 to 12 and 1 to 5:30 Monday thru Thursday. This means employees work a 4 day week of 36 hours. The 4 hrs Friday is time off with pay. There is a two week paid vacation. There are no additional paid holidays. If a holiday falls on Mon, Tues, Thurs. he must make up the time by working. Employees Every employee then works 1,600 actual hours per year but is paid for 2,080. The firm's policy is to budget manhours so overtime is not required. The policy is to accomodate this organization for doing the work. to hire an extra employee during very busy times.

13. Employee Relations: employees will work 9 hours Friday

The firm realizes that creativity relies on freedom of action with few controls so the goal is to create the proper environment to allow people to perform their tasks with the least interference. The firm uses a quiet strong leadership. The idea is to make things happen in a controlled manner. There must be a delicate balance between permissiveness and authoritarian control. The goal is to motivate by inspiration rather than fear. Use persuasion not dictation. The more effective the management the least important it appears. The firm's policy is as follows: firm's policy of slow Pay is based on an hourly rate based on a 40 hour week. The hours are from 7:30 to 12 and 1 to 5:30 Monday thru Thursday. This means employees work a 4 day week of 36 hours. The 4 hrs. Friday is time off with pay. There is a two week paid vacation. There are no additional paid holidays. If a holiday falls on Mon. thru Thurs. the employees take it off and then work Friday. There is no paid sickleave. If an employee is sick on Mon-Thurs. he must make up the time by working Fridays. Every employee then works 1,800 actual hours per year but is paid for 2,080. The firm's policy is to budget manhours so overtime is not required. The policy is to hire an extra employee during very busy times.

If overtime is required employees will work 9 hours Friday and be paid 9 extra hours at regular pay; or have the option of saving that time and taking it off during slack periods at the rate of $1\frac{1}{2}$ hours for every hour worked overtime. At the end of each year each employee who has worked 1 full yr. is given as a bonus, shares of stock in the firm equal to 5% of his salary. Any employee may at that time buy additional shares. Also at the end of each year the corporation pays earnings on the shares an employee owns. This profit sharing plan might pay the average employee a share of profit equal to 10% of his salary. The firms policy of slow steady growth provides opportunity for advancement. Promotions are made from within whenever possible. The firms organization into teams gives each person a chance for recognition, a chance for varied work and a feeling of being part of a project. Each employee feels like he owns part of the firm and has freedom of action. Performance is evaluated every 6 mo. by the head of each dept. and raises given for increased production or an advancement in rank. Cost of living raises are given also at this time. Two 15 minute coffee breaks are given each day, the employees gather in the lounge, on tape, photo equip. & darkroom and model shop.

This adds to social relations. Also, outside activities by the staff are encouraged. The office may be used for parties after hours and employees may use the beach on weekends. The firm holds special training and study sessions from time to time to keep up with new developments. If any employee wants to take a course the firm will pay for it. Also the firm has a complete library and any employee may check out books. The stock purchase plan make up the retirement plan. When an employee leaves the firm he must sell his stock back to the firm at the end of the year. The firm pays for 25,000.00 term life insurance and medical and disability insurance for each employee and their family.

14. Working Conditions: the building according to the One of the best employee benefits is the excellent working conditions in the new office building on the ocean. This is an environment that is good to work in and good to be in. Each employee has his own private space that is a clear cut concept giving harmonious union of function he can decorate as he chooses. The building has excellent light, and air conditioning, and acoustics. The 2. Structure: The building must have decisive structure view of ocean is terrific and the employee can walk out to the outdoor patio and down to the beach. The firm the physical environment. Must keep out heat, has adequate equipment including master specification, ity, dust and smog. Building must provide proper tape, photo equip. & darkroom and model shop. The physical environment should provide physical comfort.

15. Location Of Firm's Office:

The firm decided to locate the new office building on the beach just outside Santa Barbara because of the atmosphere of the ocean. It is only a 15 minute drive from employee homes in Santa Barbara. The new building

6. Refinement: The skill of the design developers, should be good advertisement for the firm. arts, continuity of details, unity of form, texture, color.

16. Design Philosophy:

The ultimate goal is to create good architecture. There

7. Space: Must be meaningful and memorable. The are two things to consider. First just what is good architecture and second how to achieve it. The firm has a design review board made up of all the senior officers of the firm. They hold a jury at the end of the preliminary stage and another after the building is

complete. They evaluate the building according to the following list. It is their responsibility to see that the firm turns out good architecture.

8 Qualities of Good Architecture:

1. Concept: The building must have a concept. Express a clear cut concept giving harmonious union of function and form. The form and function must be clear and meaningful.

2. Structure: The building must have decisive structural order and structural consciousness.

3. Physical Environment: The building must respect the physical environment. Must keep out heat, cold, rain, sun, wind, snow, noise, odors, humidity, dust and smog. Building must provide proper hearing condition, lighting, and temperature. The physical environment should provide physical comfort.

4. Emotional Environment: Emotion is all great in architecture. Must be much more than a dead structural shell. It must possess a spirit, giving man a feeling of importance. Provide the emotional environment for emotional comfort.
5. Technology: Take full advantage of advanced technology. Even pioneer new materials and techniques.
17. Development:
 6. Refinement: The skill of the design developers. The refinement gives meaning to all parts, continuity of details, unity of form, texture, color, and brings together a union of opposites--dark-light, line-plane, solid-void.
 7. Space: Must be meaningful and memorable. The experience of inspiring space can be more satisfactory than that of a great painting. Space can be awesome or intimate, cheerful or depressing, confining or non confining, stimulating or sedative. The art of defining space is most important. How well space is subdivided determines the success of a building. It is important that the users love the building and find it exciting visual stimulation. The spaces must function well.
 8. Land: The building is part of the land it rests on. It must be a marriage. The building must have components integrated as parts of a total composition including trees, sky, and terrain. The building should relate to the other buildings and people around it.

The firm believes that the way to achieve good architecture is to set up a team of talented people. Experts

in all fields who provide a comprehensive service. A full comprehensive service gives better architecture.

The team should be matched to the task and can only

be so big. The client should be part of the team. A good program helps give better design.

1. The best advertisement is successful buildings and satisfied clients

Economy is the most for the money not bareness without amenities. The team should design omni-directional; form, function and economy must be considered simultaneously and must carry equal importance.

17. Development: functions. Prominence in these carries valuable publicity. Join the Chamber of Commerce. Development has two phases:

- a. securing specific commissions
- b. public relations (a good firm name)

Any product no matter how sensational must be sold.

The firm must sell good, attractive, and interesting

buildings. The way to get commissions is to demon-

strate that the firm has:

1. Good standing in the profession and community
2. Design ability
3. Construction competence and technical knowledge
4. Practical efficiency
5. Business capacity
6. Good judgement
7. Experience and examples of work
8. And maybe most important -- stress the personal service they will get. Much more than just "blueprints"; planning, management, a work of art.

There are 3 steps in getting a commission.

- a. secure the interest of the prospect, understand the views of the prospect, use clarity of expression and emphasize the good points.
- b. create a desire for our service
- c. close the deal. This is the most difficult. Make several attempts new reasons and revise proposal. But use no persuasion in steps a. and b.

The public relations program must project the firm's

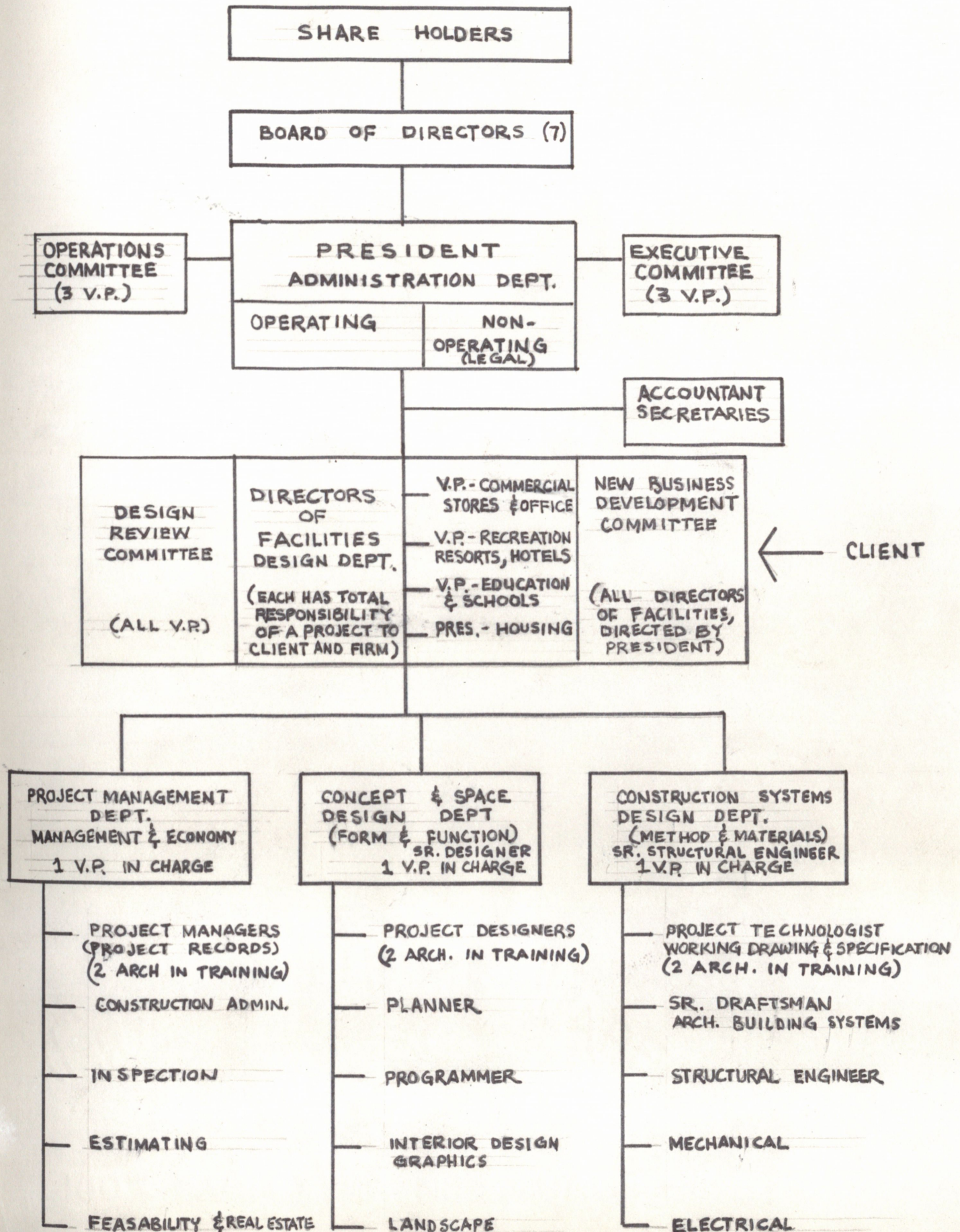
service to the public free to do the design. Be care-

1. The best advertisement is successful buildings and satisfied clients

2. Obtain newspaper articles about the interesting aspects of the firm
3. Let the public know of any awards
4. Enter competitions
5. Friends--show pride in the firm. Tell about a new building but don't over do it.
6. Social contacts are very important
7. Join clubs and public service organizations and attend the functions. Prominence in these carries valuable publicity. Join the Chamber of Commerce.
8. Serve on city planning boards.
9. Entertain newspaper writers, public officials, government agency personnel, building dept. heads and many others.
10. Get introduced to people who could be helpful in getting public commissions.
11. Meet people. Even ones physician, dentist, lawyer, minister, banker are potential clients.
12. Politics! have a cordial and social relationship with staff members of gov't agencies.
13. Hire a professional advisor.
14. Put a rendering of every proposed project in the paper along with a fact story.
15. Publish photo's of projects in home owner magazines, newspaper home sections, architectural magazines.
16. Have an opening ceremony for a new building, ground breaking.
17. Public education lectures.
18. The firms own office should reflect the skill, scope and ability of the firm. The waiting room and conference room should have pictures of projects. This will gain a reputation among the builders.
19. Insist on a high standard of workmanship when inspecting projects, this will gain a reputation among the builders.
20. Make any mistakes that the firm makes right. Avoid lawsuits.
21. Treat all parties fair and be cooperative, be professional. This will make friends of clients, contractors, consulting engineers, material representatives and other collaborators.
22. Some members of the firm should form a development corporation who go in partnership with other investors to form real estate investment projects. In other words promote new projects and hire the firm at full fee to do the design. Be careful not to be in direct competition with potential clients. This idea has unlimited possibilities.

23. Do research in areas such as earthquake design and ocean structures. Get publicity on findings and ideas.
24. Start a community design center, supervise student help.
25. Open 1 man branch offices one at a time all over the country. This has many possibilities.
26. Select the media of advertizing that will reach the people who might be interested in the firms service: circulars thru mail, publications, phone calls, personal interview where the firms portfolio and slides of work are shown, always leave a business card to be a salesman one must develop ones personality. People are attracted and have a hard time resisting and it inspires confidence. One should have personal magnetism--express emotion and be interested in other people. A dynamic personality exhibits enthusiastic ambition and a wide awake attitude.
27. Above all else the firm must have dignity. Use some restraint and be reserved--so to build a prestige. This gives a better relationship with the client later on. The ideal situation is when clients seek out the firm. Never make the amount of fee an issue. Stress the competence of the firm. Never give a prospect a free sketch until an agreement is signed.
28. On the second meeting with the prospective client bring along the employee who will be the project architect on his project. Introduce him as the man who will devote his entire personal attention on this project from start to finish. This man might even live with the client for a week. This assures the client of personal attention.
29. Keep in touch with former clients. Send a x-mas card with personal letter. Send them a new brochure of firm.
30. Public relations is gradual and takes constant vigilance.
31. The firm must have a development committee made up of each project architect and led by the president. Each member must become an expert in one building type. He will call on prospective clients in that field and demonstrate the firms expertise in that field.

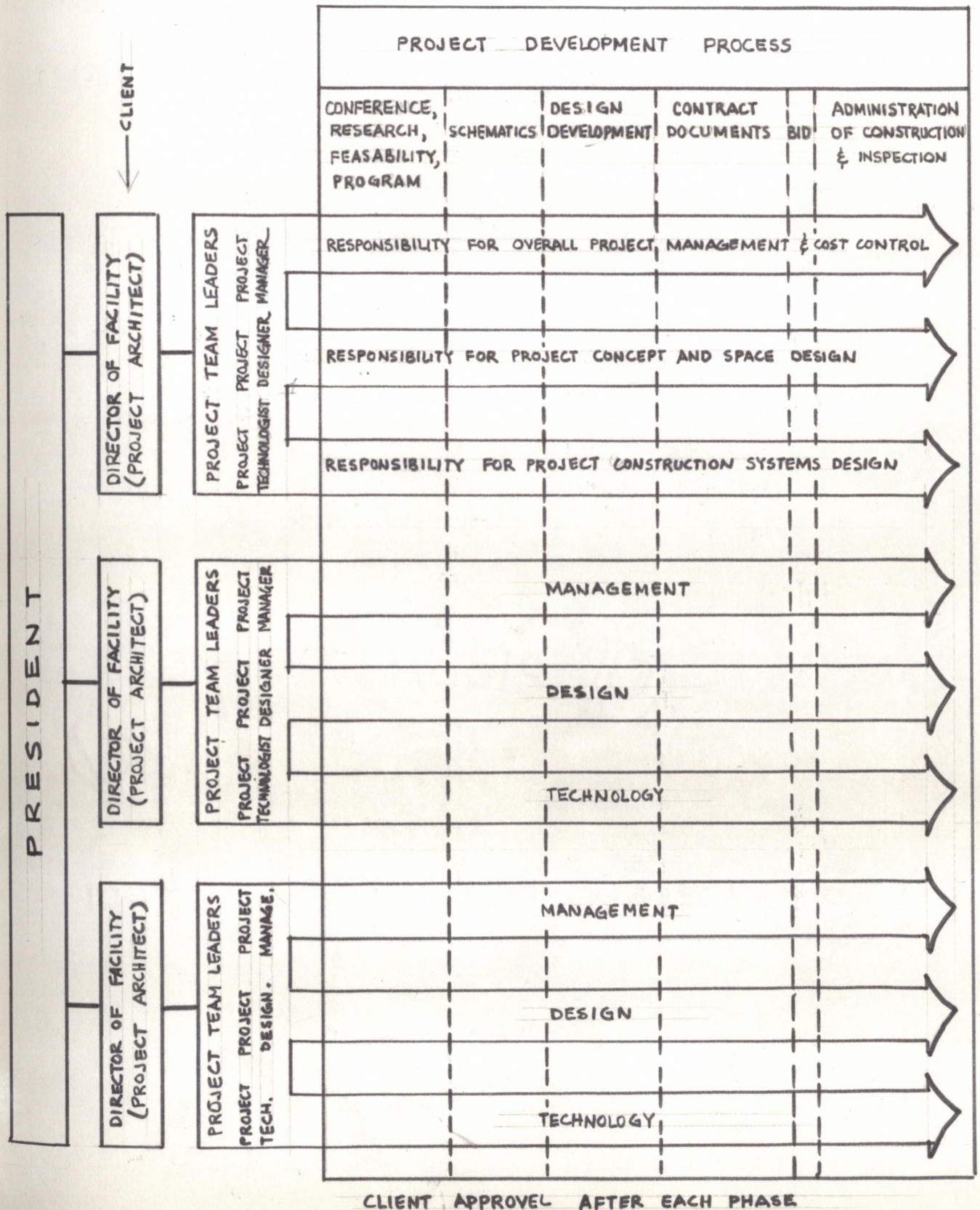
3. ORGANIZATION FOR MANAGEMENT



4. ORGANIZATION FOR PROJECT PROCESS

RESPONSIBILITY FLOW CHART

RESPONSIBILITY IS BASED ON EMPLOYEE'S ABILITY TO PERFORM



5. List Of Employees

1. President	\$30,000
2. V.P. Director of Facility	25,000
3. V.P. Director of Facility	25,000
4. V.P. Director of Facility	25,000
5. V.P. Project Management Dept.	20,000
6. V.P. Concept & Space Design Dept.	20,000
7. V.P. Construction System Design Dept.	20,000
8. Senior Draftsman	15,000
9. Planner	15,000
10. Architect in Training-Project Manager	12,000
11. Architect in Training-Project Manager	10,000
12. Architect in Training-Project Designer	12,000
13. Architect in Training-Project Designer	10,000
14. Arch. in Training-Project Const. System	12,000
15. Arch. in Training-Project Const. System	10,000
16. Jr. Draftsman	6,000
17. Structural Engineer in Training	14,500
18. Mechanical Engineer	17,500
19. Mechanical Engineer in Training	12,500
20. Mech. & Elect. Draftsman	10,000
21. Electrical Engineer in Training	14,500
22. Business Manager-Accountant	12,000
23. Secretary	7,000
24. Secretary	6,000
25. Secretary-Receptionist	5,000
	\$366,000

6. Budget For 1 Year

25 employees plus 3 consultants = 28 total x .4 million

Total project construction cost \$11,200,000.00

Total gross annual receipts @5½% = \$616,000.00

Budget for 1973

A. Direct expense 334,000.00

1. Employees Direct Salary \$150,000

2. Misc. Direct Expense 27,000

3. Consultant Fee 57,000

Total direct salary = \$279,000; so income fee is a multiplier of 2.25 times direct salary.

B. Indirect expense 232,000.00

1. Employee indirect salary 116,000.00

2. Overhead 116,000.00

a. Fica tax \$10,000

b. Employee benefits 25,000

c. Rent 24,000

d. Utilities 2,400

e. Maintenance 1,000

f. Phone 5,000

g. Equip. & supplies 12,000

h. Printing 2,000

i. Travel 12,000

j. Tax & licence 1,000

k. Insurance 4,500

l. Dues & fees 1,000

m. Service 1,100

n. Promotion 10,000

o. Other 5,000

C. Profit: (8%) 50,000.00

PART FOUR

Physical Plant Program

1. Physical Plant Goal
2. Functional Space Requirements
3. Space Relationships
4. Room Requirement Sheets
5. Site Data

1. Physical Plant Goals

The problem to be solved:

Design an attractive and well designed office building for the 25 man firm described in part three. The design must provide the space required to carry out the activities described, and in the manner described by the organizational charts. The firms goals and management policy decisions must be met. The building must be distinctive and must reflect the firms design philosophy; and also reflect the nature of the image of an architect. However the building must be able to be converted into an office building. The character must fit the character of the surroundings. The design should be pure and universal and follow the laws of nature. Consider the earthquake possibility. The space should be a place that is good to be in and good to work in. It must not be sterile. There shall be adequate lighting, air conditioning and acoustic control. There should be plenty of windows and plants---bring the outdoors in. Provide each man with a private work space of his own that he can arrange and decorate. Provide a view of the ocean from each mans private work space if possible. Provide parking but hide the cars.

Provide outdoor patios with easy access. Divide the production area into three departments also provide a studio team work area for each project. Keep the spaces flexible. Provide for future expansion at the rate of 1,000 sq. ft. every 5 years. Keep the plan as open as possible with a minimum of corridors. Provide an employee lounge area for coffee breaks, lunch, recreation and meetings. The new structure will be located on the ocean front lot owned by the firm. See the site data section. The budget for the new structure and site development is \$200,000.00.

2. Functional Space Requirements

Provide space for 25 employees plus 5 future employees

A. Administration:

1. Waiting	100
2. Receptionist	100
3. President office	150
4. (2) Secretary office	300
5. File rm.	100
6. Duplication	100
7. Print rm.	100
8. Accountant & Bookkeeper	100
9. (4) Director offices	400
10. Large conference	200
11. Small conference	100
12. Dead storage	100
13. Hall (display)	100
14. Library (some wall)	0
	<u>1950</u> sq.ft.

B. Project Management:

1. V.P. office	100
2. (3) Employee space	150
3. Common work area	150
4. Storage	100
	<u>500</u> sq. ft.

C. Concept and Space Design:

1. V.P. office (designer)	100
2. Planner	50
3. 3 Employee	150
4. Common work area	200
5. Storage	100
	<u>600</u> sq. ft.

D. Construction System Design:

1. V.P. office (struct. eng.)	100
2. Structural engineer	50
3. (3) Mechanical engineer	180
4. (2) Electrical engineer	120

5. Engineer common area	150
6. Engineer storage	50
7. Sr. draftsman	100
8. Jr. draftsman	50
9. (3) Employee space	150
10. Common work area	150
11. Specification desk	50
12. Plan racks	50
13. Plan vault	100
	<u>1,300</u> sq. ft.

E. Team Studios:

1. Studio A.	225
2. Studio B.	225
3. Studio C.	225
4. Studio D.	225
	<u>900</u> sq. ft.

F. Lounge:

1. Lounge	600 sq. ft.
-----------	-------------

G. Service:

1. Men toilet	75
2. Women toilet	25
3. Janitor	15
4. Mechanical	85
	<u>200</u> sq. ft.

H. Partitions: 250 sq. ft.

Building total 6,300 sq. ft.

Parking:

1. 30 Cars	9,000 sq. ft.
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Outdoor Patios: 1,000 sq. ft.

3. Space Relationships

	VALUE	CLOSENESS
A	ABSOLUTELY NECESSARY	
E	ESPECIALLY IMPORTANT	
I	IMPORTANT	
O	ORDINARY CLOSENESS	
U	UNIMPORTANT	
X	UNDESIRABLE	

RECEPTION	I																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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4. Room Requirement Sheets

ROOM REQUIREMENTS

Project: Architects Office

Room Name

Reception

No. 1

Dept. Admin.

Purpose Of Area

Reception of Clients and Public
Receptionist
Waiting area
Display work

Expression Of Space

Formal Quiet
DeLuxe, Luxury
Businesslike
Impressive

Relationship To Other Spaces

Should be near the
Conference
Directors
President
Secretary

People
Staff

Max. 7

ONE Receptionist

Access Main entry

Control Receptionist Desk

Equipment

Phone switchboard

Storage

Phone books for all cities

Furniture

Six chairs desks with typewriters
Coffee table chairs
Reception desk w/chair

Service

Method

Floors

Carpet

Electrical

Decorative lights
50 F.C.

Walls Partitions

Air Conditioning YES

WINTER: 73° D.B. 40% R.H.

SUMMER: 77° D.B. 50% R.H.

Doors Window

DeLuxe door

Plumbing None

Ceilings

Acoustic

A quiet area

35 Dba 30 NC

Dimensions

Area 200 #

Communication

Center of Communication Phone
System.

ROOM REQUIREMENTS

Project: Architects Office

Room Name

Secretary

No. 2

Dept. Admin.

Purpose Of Area

An Office for the Secretarys
A center of Activity of the
Admin. Dept

Expression Of Space

Efficient
Warm

Relationship To Other Spaces

Close to Accounting
President
Director
File rm.

People
Staff

Max. 7

Two Secretarys

Access
Control

Equipment

Specification Tape

Storage

File Cabinets

Supplies

Office Machines Dictaphone

Furniture

Two large desks with typing
table. W/chairs
Work counter

Service

Business machine repair

Method

Floors

Carpet

Walls Partitions

Storage Cabinets

Doors Window

Ceilings

Dimensions

Area 300 sq

Electrical

150 F.C.

Air Conditioning YES

15 cfm/person 40 dba 35 NC

Plumbing

None

Acoustic

Communication

Phone

ROOM REQUIREMENTS

Project: Architects Office

Room Name *Accounting* No. *3*

Dept. *Admin.*

Purpose Of Area

*An office for the Accountant
Personell Management
Book Keeping Comptroller
General Management & Correspondence*

Expression Of Space

Functional

Relationship To Other Spaces

*Close to
Plan vault
Secretary
File rm*

People
Staff *1*

Max. *4*

Access
Control

Equipment

Furniture

*2 Desk
1 Throw table*

Storage

Service

Method

Floors

Walls Partitions

Doors Window

Ceilings

Dimensions

Area *100 #*

Electrical

150 F.C.

Air Conditioning *yes*

Plumbing

none

Acoustic

Communication

Phone

ROOM REQUIREMENTS

Project: Architects Office

Room Name *File Rm* No. *4*

Dept. *Admin*

Purpose Of Area

*Keep all the papers
relating to specific projects in
the file rm.*

All other files

Expression Of Space

Efficient

Relationship To Other Spaces

*Secretary
Accountant
Project Manager Dept
File rm*

People

Staff *0*

Max.

3

Access
Control

Equipment

File cabinets (100)

Furniture

1 small table

Storage

Service

Method

Floors

Walls Partitions

Doors Window

Ceilings

Dimensions

Area *100 sq*

Electrical

50 F.C.

Air Conditioning *yes*

Plumbing

none

Acoustic

Communication

ROOM REQUIREMENTS

Project: Architects Office

Room Name

President Office

No. 5

Dept. Admin.

Purpose Of Area

An office for President
General Management
Client Conference

Expression Of Space

Formal
Digitized

Relationship To Other Spaces

Reception
Secretary

People

Staff 1

Max. 5

Access

Control

Equipment

Storage

Concealed drafting equip.

Furniture

1. Deluxe Desk
Conference table
4 chairs

Service

Method

Floors

Carpet

Electrical

200 F.C.

Walls Partitions

Air Conditioning Yes

25 cfm/person

Doors Window

Plumbing

None

Ceilings

Acoustic

Quiet

35 dba

30 NC

Dimensions

Communication

Area 150 #

Phone

ROOM REQUIREMENTS

Project: Architects Office

Room Name

No. 6

Director of Facility Office

Dept. Admin

(4 reg'd)

Purpose Of Area

Office and Private Work
Area

Expression Of Space

Dignified
Individual

Relationship To Other Spaces

Secretary
Reception
Team studio

People
Staff |

Max. 4

Access
Control

Equipment

Furniture

1 Desk
1 Draft Table

Storage

Service

Method

Floors

Walls Partitions

Doors Window

Ceilings

Dimensions

Area 100 sq

Electrical

200 F.C.

Air Conditioning

Yes
20cfm/person 35dba

Plumbing

none

Acoustic

35dba 30 NC

Communication

Phone

ROOM REQUIREMENTS

Project: Architects Office

Room Name

Conference Rm.

No. 7

Dept. Admin.

Purpose Of Area

Conferences WITH CLIENTS

moveable partition divides into
one - 12 man
one - 6 man

Expression Of Space

Formal
Quiet

Relationship To Other Spaces

Reception

People
Staff 0

Max. 18

Access
Control

Equipment

Furniture

3 TABLES 12 chairs
18 chairs

Storage

Service

Method

Floors

Carpet

Walls Partitions

Doors Window

Ceilings

Dimensions

Area 3000

Electrical

50 F.C.

Air Conditioning

30 cfm/person

Exhaust

Yes

Plumbing

none

Acoustic

Quiet

30 dba 25 NC

Communication

ROOM REQUIREMENTS

Project: Architects Office

Room Name

Duplication

No. 8

Dept. Admin.

Purpose Of Area

A room to print the specifications and pamphlets.
A room for Xerox

Expression Of Space

Efficient

Relationship To Other Spaces

Secretary

People

Staff 1

Max. 4

Access

Control

Equipment

XEROX

offset press

spec. binder

paper punch

paper cutter

Furniture

counter

mail equip.

Storage

Service

Method

Floors

Walls Partitions

Doors Window

Ceilings

Dimensions

Area 100 sq

Electrical

150 F.C.

Air Conditioning Yes

exhaust

Plumbing

1 sink

Acoustic

Communication

ROOM REQUIREMENTS

Project: Architects Office

Room Name

No. 9

Print Rm

Dept. Admin.

Purpose Of Area

Print Machine to run
all sets of plans.

Wrap for mailing

Expression Of Space

Efficient

Relationship To Other Spaces

Dark rm

Project Technology

People

Max. 4

Staff 1

Access

Control

Equipment

Bruning Machine

Storage

Print Paper shelves

Furniture

three throw tables

Wrapping table w/ roll paper

Service

Method

Floors

Electrical

100 F.C.

Walls Partitions

Air Conditioning

ventilate & Exhaust well

Doors Window

Plumbing

none

Ceilings

Acoustic

Dimensions

Communication

Area 100 sq

Phone

ROOM REQUIREMENTS

Project: Architects Office

Room Name

No. 10

Project Manager Office

Dept. Proj. Manage.

Purpose Of Area

Private office for Head of Dept.

Expression Of Space

Individual

Relationship To Other Spaces

Dept.
File rm.
Team studio

People
Staff 1

Max. 4

Access
Control

Equipment

Furniture

1 desk
1 throw table

Storage

Service

Method

Floors

Walls Partitions

Doors Window

Ceilings

Dimensions

Area 100 #

Electrical

200 F.C.

Air Conditioning

yes

Plumbing

none

Acoustic

Communication

Phone

ROOM REQUIREMENTS

Project: Architects Office

Room Name

No. 11

Private Work Area (3 reqs)

Dept. Project Management

Purpose Of Area

A private work area where employee can get work done without bother. Can decorate himself.

Expression Of Space

Individual

Relationship To Other Spaces

File rm

Team Studio

People

Max.

Staff 1

4

Access
Control

Equipment

Projector
Shelves
Files

Furniture

1 Desk
1 throw table

Storage

Service

Method

Floors

Walls Partitions

Doors Window

Ceilings

Dimensions

Area 50 #

Electrical

200 F.C.

Air Conditioning yes.

Plumbing

none

Acoustic

40db

Communication

Phone

ROOM REQUIREMENTS

Project: Architects Office

Room Name

Work Area

No. 12

Dept. Project Management

Purpose Of Area

Circulation
Catalogs
throw tables
Open space
bulletin Boards

for Dept.

Expression Of Space

Open ness

Relationship To Other Spaces

Dept
Team

People

Staff 1

Max. 6

Access
Control

Equipment

A Magnetic Board
Shelves for Project Record book
Files

Furniture

Storage

Service

Method

Floors

Walls Partitions

Doors Window

Ceilings

Dimensions

Area 150 #

Electrical

200 F.C.

Air Conditioning Yes

15 cfm/person

Plumbing

none

Acoustic

40 db

Communication

ROOM REQUIREMENTS

Project: Architects Office

Room Name

No. 13

Space Design V.P. office

Dept. Design

Purpose Of Area

Private office for Dept head

Expression Of Space

Individual

Relationship To Other Spaces

Dept

Team studio

People

Staff 1

Max. 4

Access

Control

Equipment

Storage

Furniture

Service

Method

Floors

Electrical

250 F.C.

Walls Partitions

Air Conditioning

Doors Window

Plumbing

none

Ceilings

Acoustic

Dimensions

Communication

Area 100 #

Phone

ROOM REQUIREMENTS

Project: Architects Office

Room Name

Private Work Area

No. 14

Dept. Design (4 regd)

Purpose Of Area

Private work Area for a
single designer

Expression Of Space

Individual
Creative

Relationship To Other Spaces

Model shop, Dark rm, Team Studio

People
Staff 1

Max. 4

Access
Control

Equipment

Furniture

1 Drafting table
1 throw table

Storage

Service

Method

Floors

Walls Partitions

Doors Window

Ceilings

Dimensions

Area 50 +

Electrical

250 F.C.

Air Conditioning yes

Plumbing

none

Acoustic

Communication

Phone

ROOM REQUIREMENTS

Project: Architects Office

Room Name

Work Area

No. 15

Dept. Design

Purpose Of Area

Catalogs
A common area
work table
throw table
circulation
open space

Expression Of Space

Open ness
Not sterile

Relationship To Other Spaces

People

Staff 1

Max. 6

Access

Control

Equipment

CATALOGS- 6' HIGH X 10' LONG

Storage

Separate Storage Rm.

STORAGE FOR samples

Furniture

Throw tables

Service

Method

Floors

Electrical

200 F.C.

Walls Partitions

Tack boards

Air Conditioning yes

15 cfm/person

Doors Window

Plumbing
SINK

Ceilings

Acoustic

40 db

Dimensions

Area 2000 incl model shop

Communication

ROOM REQUIREMENTS

Project: Architects Office

Room Name

Const. Systems V.P. office No. 16

Dent. Const. Syst. (Grand)

Purpose Of Area

Private office

A Structural Engineer

Expression Of Space

Individual

Relationship To Other Spaces

Catalogs

Sr. Draftsman

Engineers

People
Staff 1

Max. 4

Access
Control

Equipment

Furniture

Storage

Service

Method

Floors

Walls Partitions

Doors Window

Ceilings

Dimensions

Area 100 #

Electrical

200 F.C.

Air Conditioning Yes

Plumbing

none

Acoustic

Communication

Phone

ROOM REQUIREMENTS

Project: Architects Office

Room Name

No. 17

Engineer Private Area

Dept. Const syst. (Gregd)

Purpose Of Area

Individual Work Area

Expression Of Space

Individual

Relationship To Other Spaces

Catalogs

Const. Arch. Dept

Team studio

People

Max. 4

Staff 1

Access

Control

Equipment

Storage

Furniture

Service

Method

Floors

Electrical

200 F.C.

Walls Partitions

Air Conditioning

Yes

Doors Window

Plumbing

none

Ceilings

Acoustic

40 db 35 NC

Dimensions

Communication

Area 60 #

Phone

ROOM REQUIREMENTS

Project: Architects Office

Room Name

Engineer Work Area

No. 18

Dent. Const. Syst.

Purpose Of Area

A common Area
Circulation
Catalogs
Throw table

Expression Of Space

Openness

Relationship To Other Spaces

Catalogs

People
Staff 1

Max. 8

Access
Control

Equipment

Future Computer corner
Catalog shelves - 6' HIGH X 20' LONG
Files - shop drawings

Storage

Separate Rm

Furniture

Throw table

Service

Method

Floors

Electrical

150 F.C.

Walls Partitions

Air Conditioning

yes

15 cfm/person

Doors Window

Plumbing

none

Ceilings

Acoustic

Dimensions

Communication

Area 150 ft²

Phone

ROOM REQUIREMENTS

Project: Architects Office

Room Name

Sr. Draftsman

No. 19

Dept. Constr. System

Purpose Of Area

Private work area
supervision of Drafting Rm.

Expression Of Space

Individual

Relationship To Other Spaces

Catalogs
Engineers
Dept.

People
Staff

Max. 4

Access
Control

Equipment

Furniture

1 drafting table
1 room table

Storage

Service

Method

Floors

Walls Partitions

Doors Window

Ceilings

Dimensions

Area 100 sq

Electrical

200 F.C.

Air Conditioning Yes

Plumbing

none

Acoustic

Communication

Phone

ROOM REQUIREMENTS

Project: Architects Office

Room Name

Private Work Area

No. 20

Dent. Const. System

(4 req'd)

Purpose Of Area

A private work area

Drafting

Expression Of Space

Individual

Relationship To Other Spaces

Catalogs

Plan Vault

Team Studio

People

Staff 1

Max.

4

Access

Control

Equipment

Furniture

1 Drafting table

1 Throw table

Storage

Service

Method

Floors

Electrical

200 F.C.

Walls Partitions

Air Conditioning Yes

Doors Window

Plumbing

none

Ceilings

Acoustic

Dimensions

Communication

Area 50 #

Phone

ROOM REQUIREMENTS

Project: Architects Office

Room Name

Common Work Area

No. 21

Dent. Const System

Purpose Of Area

A common area
Catalogs
Circulation
Throw table

Expression Of Space

Openness

Relationship To Other Spaces

Catalogs

People

Staff 1

Max. 8

Access
Control

Equipment

Furniture

Specification Desk

Storage

Service

Method

Floors

Walls Partitions

Doors Window

Ceilings

Dimensions

Area 200 #

Electrical

150 F.C.

Air Conditioning Yes

15 cfm/person

Plumbing

Acoustic

40 dba 35 NC

Communication

ROOM REQUIREMENTS

Project: Architects Office

Room Name

No. 22

Plan Vault Plan rack

Dept. Const. System

Purpose Of Area

Place to store all tracings on every Project. A place to store tracing paper. An Area for old rolls of plans. A plan rack for current plans. A Plan Desk. A place to order prints.

Expression Of Space

Efficient

Relationship To Other Spaces

Specification desk

file rm

All 3 depts espec const.

Jr. Draftsman

People

Max. 3

Staff 1

Access

Control Supervised by Jr Draftsman

Equipment

Drawers for plans - 100
on 2"x 50"x 38"

Shelves for 48" LONG PLANS - 12" HIGH
shelf for specifications

Furniture

Plan Desk

Storage

Drafting equip. in CABINET

Service

Method

Floors

Walls Partitions

Doors Window

Ceilings

Dimensions

Area 150 #

Electrical

50 F.C.

Air Conditioning

yes

Plumbing

none

Acoustic

Communication

ROOM REQUIREMENTS

Project: Architects Office

Room Name

Dark Rm.

No. 23

Dept. Design

Purpose Of Area

Dark rm to develop photo's
store Camera Equip.

Expression Of Space

Efficient

Relationship To Other Spaces

Design Dept
Print Rm.

People

Staff 1

Max. 2

Access
Control

Equipment

S.S. counter w/ trays
enlarger
camera

Furniture

Storage

Service

Method

Floors

Electrical

25 F.C.

Walls Partitions

Air Conditioning

Exhaust

Doors Window

Plumbing

1 sink

Ceilings

Acoustic

Dimensions

Communication

Area 20 #

ROOM REQUIREMENTS

Project: Architects Office

Room Name

Model Shop

No. 24

Dept. Design

Purpose Of Area

A place to use power tools without making noise. A place to store tools. A place to work on Models. Storage for old models storage for Materials

Expression Of Space

Utilitarian

Relationship To Other Spaces

Design Dept

People

Staff 1

Max.

4

Access

Control

Equipment

Table saw

Jig saw

hand tools

Furniture

work bench
counter

Storage

shelves

Service

Method

Floors

Walls Partitions

Doors Window

Ceilings

Dimensions

Area 64 sq ft

Electrical

Hot Plate
200 F.C.

Air Conditioning

Yes

Exh.

Plumbing

None

Acoustic

50 db

Communication

ROOM REQUIREMENTS

Project: Architects Office

Room Name

No. 25

Employee Lounge

Dept. Service

Purpose Of Area

Coffee breaks,
Lunch Rm.
Employee Meetings
slides
Parties

Expression Of Space

Warm Excitement
Relaxing
Ornamental
Nature
Textural

Relationship To Other Spaces

Project Manager

People

Staff 30

Max.

50

Access

Control Project Manager

Equipment

Coffee pot
Refrig.

Storage

Furniture

chairs
tables

Service

Method

Floors

Tile

Electrical

Hot plate

30 F.C.

Walls Partitions

Air Conditioning Yes

15 cfm/person

Doors Window

Plumbing

Sink
Drinking Fountain

Ceilings

SKYLIGHTS

Acoustic

40 db

Dimensions

Communication

Area

600 #

ROOM REQUIREMENTS

Project: Architects Office

Room Name

No. 26

Team Studio Work Rm.

Dept. Admin. (4 reg'd)

Purpose Of Area

A place for the project team to meet for group design and conference. A place to post project plans, model and information. A place to build model and work.

Expression Of Space

Activeness

Informal

Openness

Excitement

Relationship To Other Spaces

A Center of activity close to all employees

Directors

People

Staff 1 to 10

Max. 20

Access

Control

Equipment

Tack boards

Chalk board

Storage

Furniture

1 Drafting table

2 throw table

1 work table

6 chairs

Service

Method

Floors

Tile

Electrical

200 F.C.

Walls Partitions

Air Conditioning Yes

15 cfm/person

Doors Window

Plumbing

None

Ceilings

Acoustic

40 db

Dimensions

Communication

Area 225 sq

Phone

5. Site Data

The Site is located at the edge of La Mesa subdivision inside Santa Barbara city limits. It is three miles from downtown and two miles from the freeway. The site faces south on the Pacific Ocean and has a 360 degree view. The chain of islands 15 miles offshore shelters the coast from storms and heavy seas while the mountains 5 miles inland protect it from hot desert winds and inland winter frosts. The area has a mild mediterranean type climate. Temperatures range from 66 degrees average in winter to 77 degrees average in summer, with occasional periods of colder or warmer weather. The minimum winter temp. is 35 degree with little frost. The summer is dry. The average rainfall is 18 inches per year. The average wind is only 4 m.p.h. average humidity is 50%. The latitude is 35 degree and longitude is 120 degree. The elevation is 150ft. There is no smog and little fog. The number of clear, sunny days is 230 days per year. The area is in the termite region I (severe). And is in the earthquake area 3 (major damage). The site is in a quiet, secluded residential neighborhood. The zone is A-1 residential but the firm has obtained a variance providing that the building "fits in" the residential

neighborhood and is limited to tow stories and 10,000 square feet of area on the 100,00 square feet lot. Off street parking must be provided for 30 cars. Set back is 25 ft. on all sides.

SUN ANGLE

Summer	<u>Time</u>	<u>Bearing</u>	<u>Altitude</u>
	6	25 N of E	0
	7	20 N of E	10
	8	10 N of E	25
	9	East	40
	10	10 S of E	50
	11	20 S of E	60
	12	SE	70
	1	South	78
	2	SW	70
	3	20 S of W	60
	4	10 S of W	50
	5	West	40
	6	10 N of W	25
	7	20 N of W	10
	8	25 N of W	0
Winter	7	30 S of E	0
	8	35 S of E	10
	9	SE	20
	10	30 E of S	25
	11	15 E of S	30
	12	South	30
	1	15 W of S	30
	2	30 W of S	25
	3	SW	20
	4	35 S of W	10
	5	30 S of W	0

Code Data

Building codes that apply are:

- a. Uniform Building Code
- b. Uniform Mechanical Code
- c. National Electric Code
- d. National Plumbing Code

Occupancy: Group F-2

Fire Zone: III.

Area of building = 8,000 sq ft. and max. 2 stories so;

Type of construction can be type V

Building does not have to be fireproofed.

Floor live load = 50 lb/sq ft.

Corridor width = 5 ft.

Min. space required: 100 sq. ft. per person

Ceiling ht. min.: 7'-6"

Exit: 2 required if over 30 people, so 2 are required.
No point can be 150' from an exit. Exit must
be 1/5 th. of the perimeter apart. Min. exit
door and corridor equal 36".

Stairs: Two required on second floor if over 10 people
min. width 3' if under 50 people. No stair to
roof req'd if under 4 stories, and no fire-
tower req'd. Use $7\frac{1}{2}$ " risers and 10" treads.

Railings: Not required in step or deck if less than
32" drop.

Day by day ground temperature readings for all months of the year - 1972
As recorded by authorized representative of U.S. Weather Bureau

Compiled by Santa Barbara Chamber of Commerce

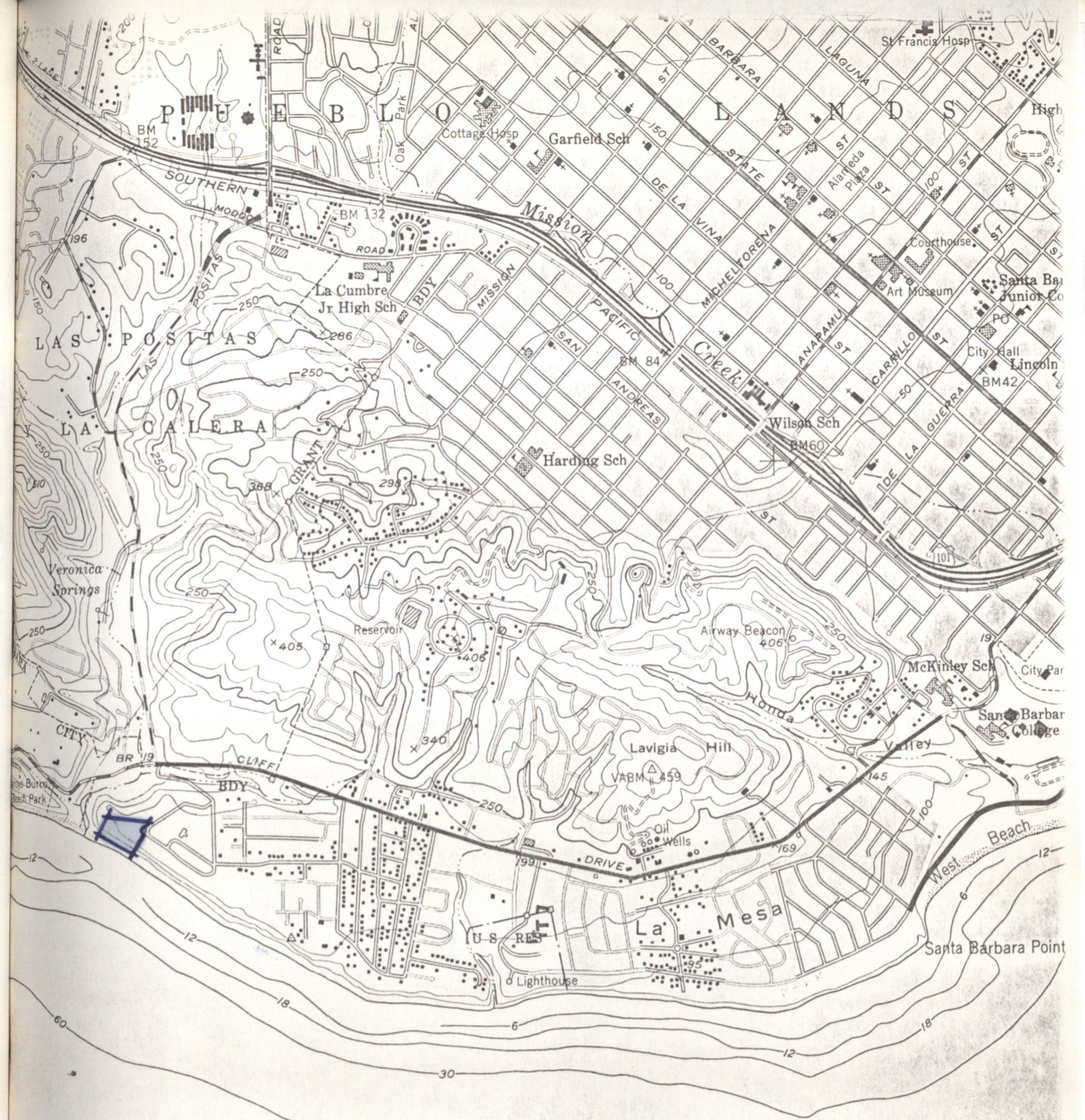
Date	Jan.		Feb.		March		April		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	65	35	64	38	72	45	74	43	72	48	76	57	68	55	84	63	84	62	75	61	72	47	76	41
2	68	35	60	39	80	57	68	42	68	55	75	55	69	54	76	58	78	62	81	59	68	47	78	41
3	64	34	66	35	81	56	68	42	69	54	67	54	71	53	72	57	80	63	71	57	68	48	65	46
4	63	35	67	34	78	55	64	48	65	54	68	54	73	54	77	56	75	62	71	56	77	57	62	48
5	61	34	61	33	91	53	68	51	63	52	67	53	76	55	75	57	78	61	75	54	66	58	60	35
6	60	34	53	32	59	52	69	48	66	52	73	57	74	56	77	58	79	59	91	57	67	47	57	36
7	71	33	60	32	56	52	77	47	69	48	69	59	79	55	85	60	75	61	94	63	70	55	54	44
8	62	32	71	42	57	53	69	46	68	47	73	60	75	54	83	62	76	63	69	64	67	50	56	42
9	55	36	65	46	64	46	67	45	67	50	72	58	73	53	81	61	72	65	71	60	72	43	56	31
10	60	37	65	45	67	48	71	45	70	52	70	57	74	58	75	60	73	61	71	57	71	42	51	32
11	62	38	61	41	65	51	65	50	72	53	71	54	76	60	81	61	72	57	72	54	63	42	55	33
12	60	40	73	40	64	50	65	45	73	52	83	53	81	58	77	61	75	53	74	53	63	40	55	33
13	65	42	73	40	61	54	65	51	81	57	79	58	70	57	79	60	75	54	73	53	63	45	57	34
14	59	41	67	39	61	54	71	46	78	51	72	58	78	57	79	62	76	56	73	53	60	53	60	33
15	65	40	61	45	62	53	70	45	69	51	74	56	70	57	78	59	73	55	71	53	65	51	62	36
16	77	39	68	45	64	53	69	44	65	53	78	55	74	56	77	57	69	55	72	53	64	53	63	39
17	73	39	66	46	66	52	67	44	67	55	74	53	76	57	76	60	72	54	70	55	59	49	67	43
18	57	44	60	45	58	51	65	47	67	50	73	55	80	64	77	59	71	51	69	57	63	43	69	45
19	56	49	59	44	63	50	68	44	68	49	73	50	76	62	76	60	76	51	72	52	64	44	70	43
20	56	42	67	44	63	49	62	47	63	46	72	54	70	63	76	58	77	49	75	52	64	44	72	41
21	58	41	71	43	60	58	64	45	64	45	75	52	73	56	80	58	85	59	73	51	68	42	75	47
22	58	40	68	46	66	50	74	44	69	44	70	58	77	55	88	62	94	59	74	51	68	43	75	47
23	62	39	68	45	73	47	73	43	68	54	66	59	78	54	90	64	86	61	61	50	68	41	70	44
24	60	39	64	45	67	47	67	43	68	54	70	53	84	55	75	61	72	51	71	53	67	41	67	45
25	63	40	63	44	78	47	76	52	67	53	68	54	84	58	75	60	73	55	71	50	65	40	70	44
26	56	39	69	44	67	47	73	49	67	51	72	52	84	59	75	60	74	54	79	53	72	45	76	42
27	59	37	65	42	70	44	76	53	68	50	71	56	82	55	75	60	73	53	69	53	78	44	77	41
28	50	36	75	42	69	40	74	50	85	49	76	58	75	56	71	61	76	62	72	50	77	46	74	38
29	60	35	60	47	63	42	68	49	80	59	79	57	78	56	79	61	73	62	73	50	77	44	61	33
30	67	34			63	45	66	48	75	58	80	56	76	55	85	63	77	60	74	50	82	42	62	32
31	69	34			74	43					89	55	89	55	80	66			75	42			63	34

(Min. temperatures bases on night readings)

	Clear		Overcast		Partly Cloudy		Rainfall	
	Days	Mornings	Days	Mornings	Cloudy	All Day	July 1-June 30	in.
1968	206	50	45	65			1967-68	13.67
1969	197	61	38	69			1968-69	30.47
1970	228	58	22	57			1969-70	13.03
1971	223	101	19	22			1970-71	14.42
1972	205	81	37	43			1971-72	8.64

Smog is practically unknown in Santa Barbara; small oxident measurements have been recorded on rare occasions.

The average annual rainfall is 18 inches. Rain usually occurs from October to May. Average air movement is less than four miles an hour. Humidity is in the medium range, between 40 and 60 percent, although it varies according to the season and area of the City.



S A N T A B A R

P A C I F I C

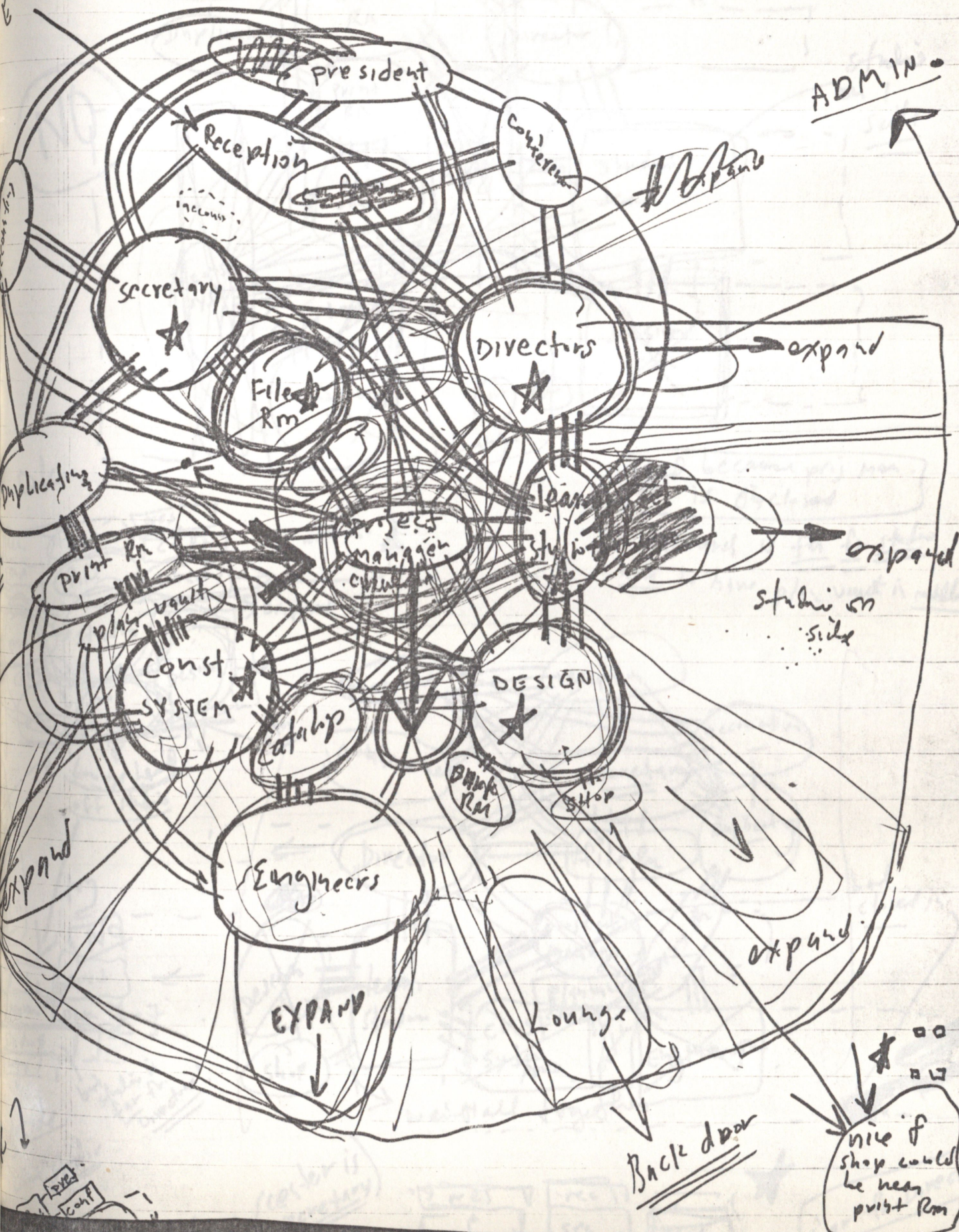
LOCATION MAP

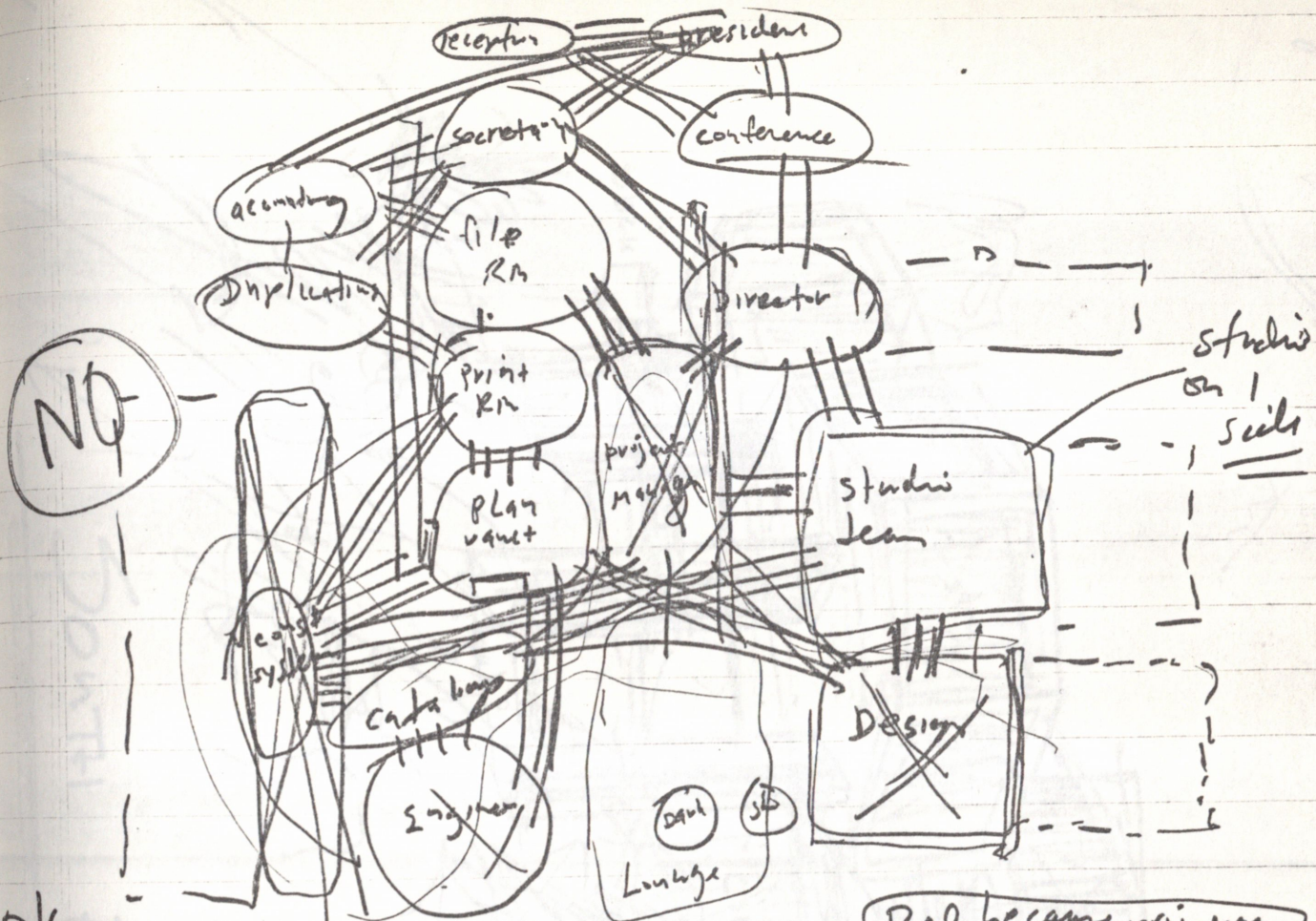
PART FIVE

Schematic Designs

Envy

tech

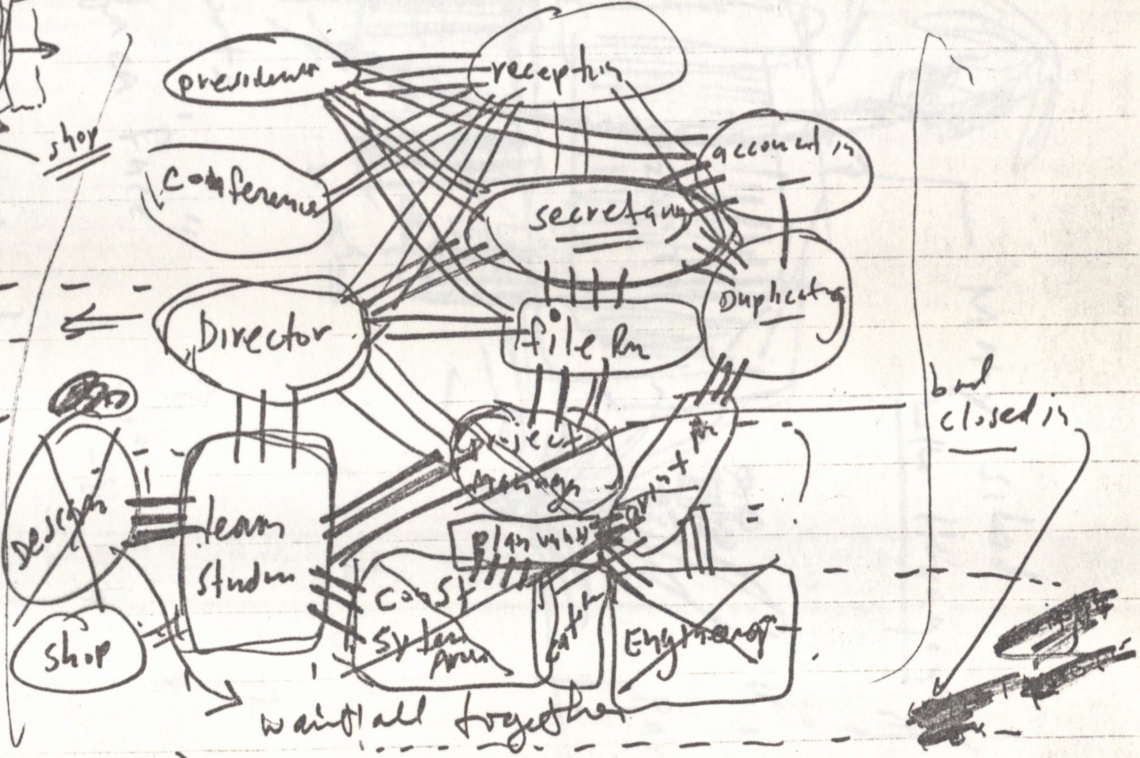
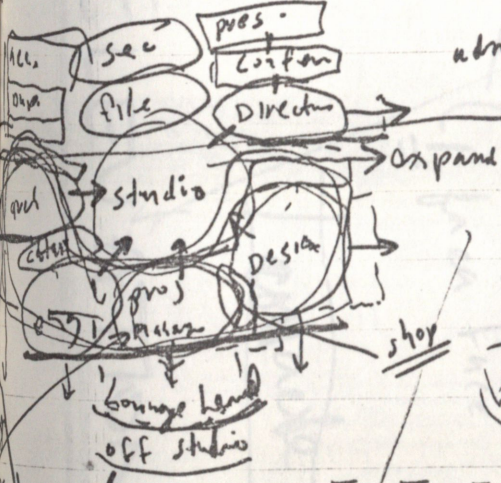




o/c

Bad became prij man. is closed

and and is for fr studio
 nia to have plan unit is mobile



bad closed is

Admin (center is secretary)

for fr. Director

try NO
 but studio is far fr Directors!
 decide
 want studio

100

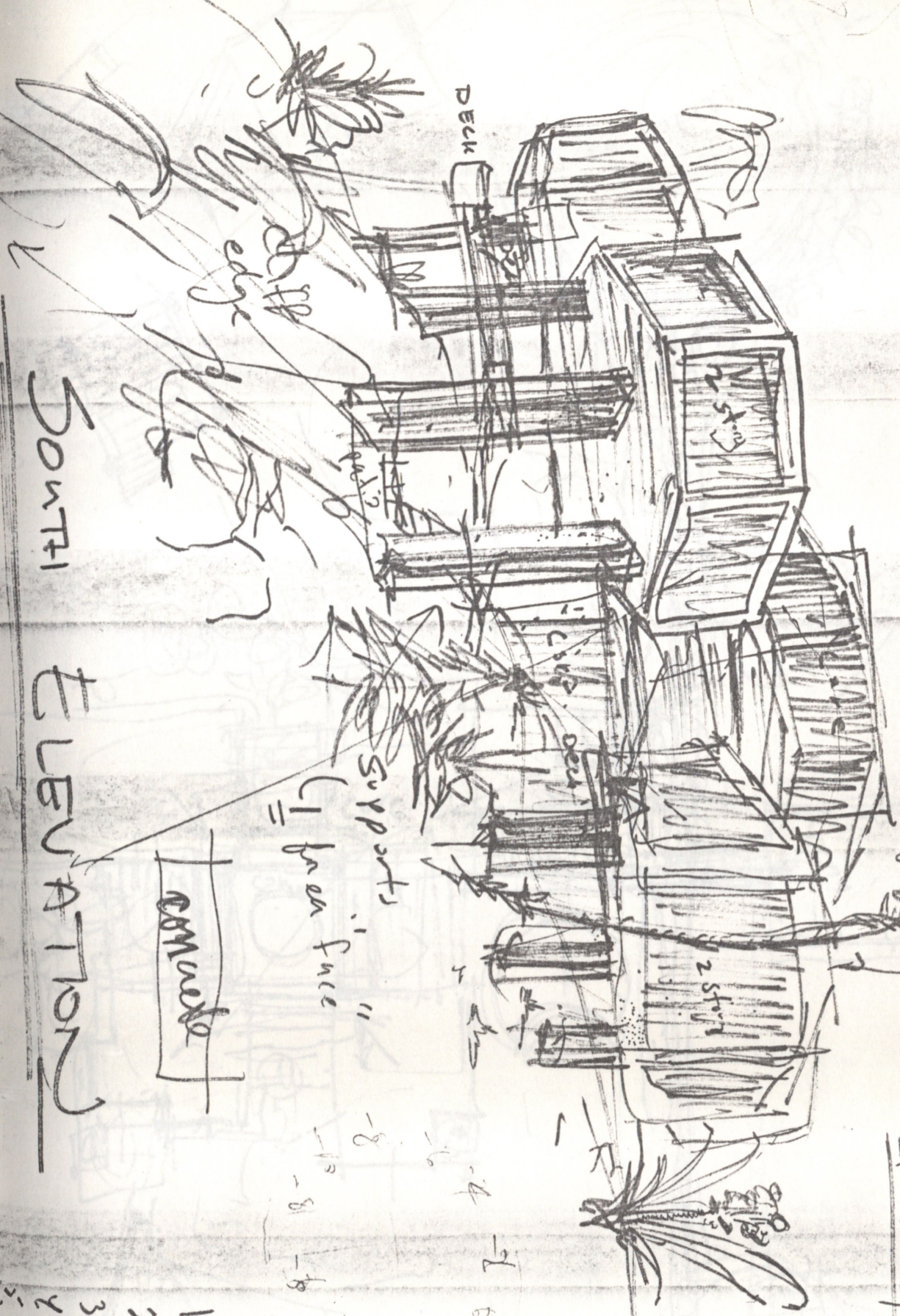
100



Many sided
Lila Hexagon



Park
side



Deck

edge

2 story

2 story

2 story

Supports

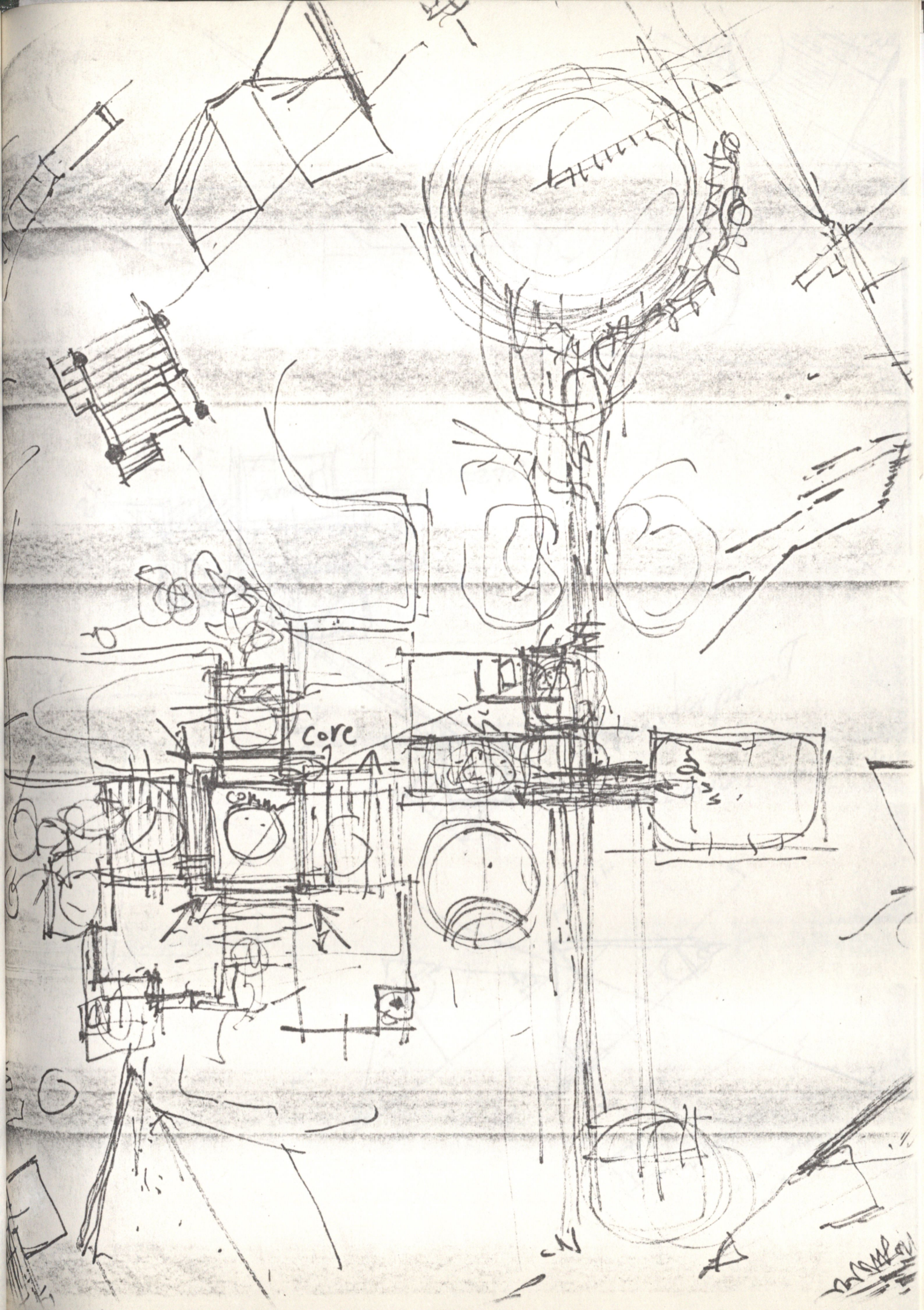
1 face

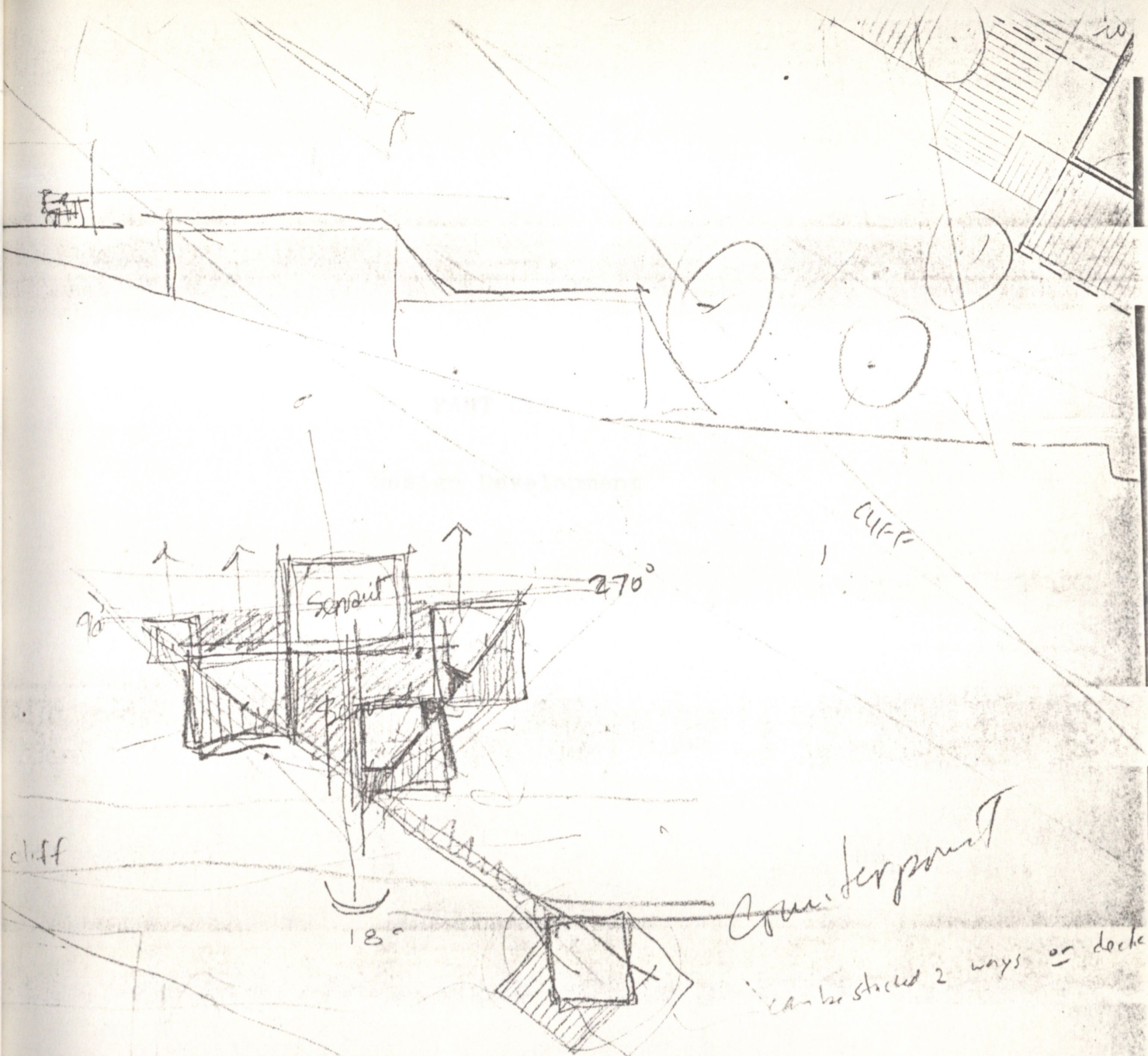
Concrete

SOUTH
ELEVATION

-8
-4
-2
0
-2
-4
-8
-6

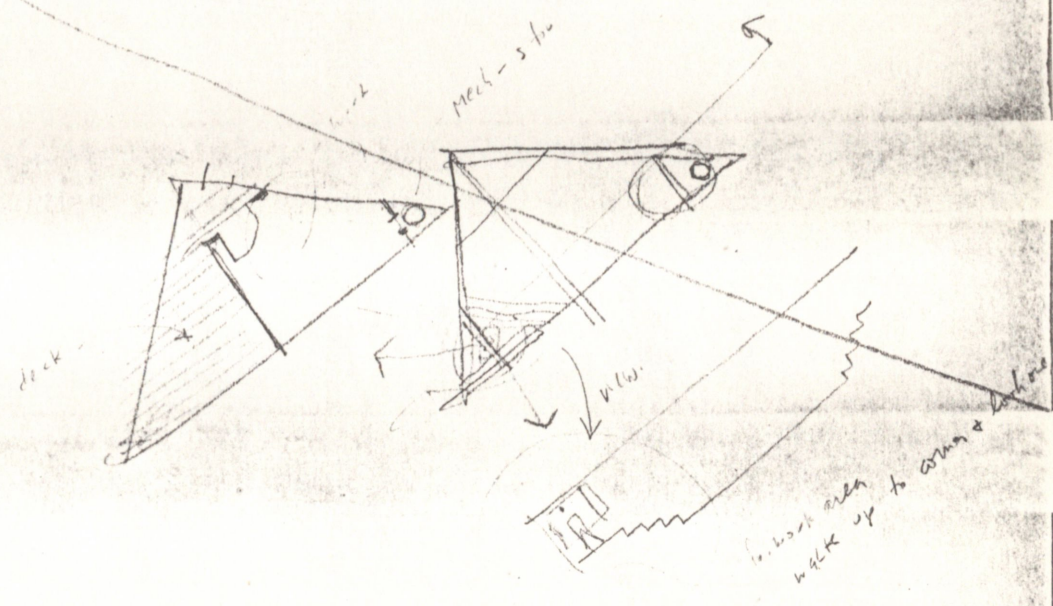
1. ft +
2. but
3. 24. Sp
4. small over
5. in the side
6. com





Corner for point

can be stored 2 ways on docks



to work area
walk up to corner & below

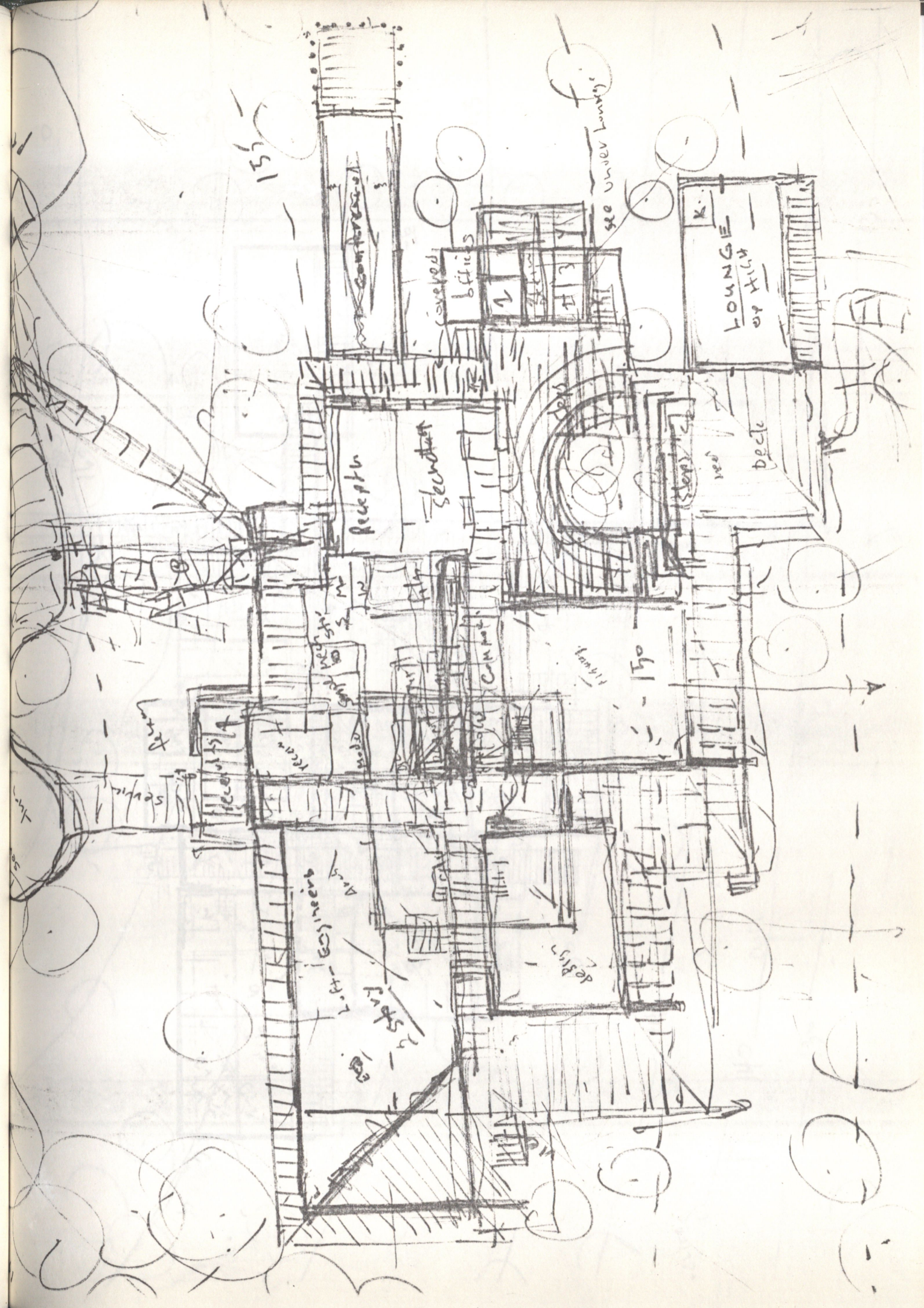
PART SIX

Design Development

Intentions

1. Fit site rather than contrast.
2. Several small level changes to fit site.
3. Decks on grade. Shape to fit site.
4. Express the level changes in the roof. Step down hill.
5. Express each team studio with a separate roof.
6. Put service core in center.
7. It is expandable, just add another box.
8. Interior is flexible. No permanent partitions.
9. Do not bury it.
10. Not too close to cliff because of cost, safety, ruin cliff, trees for shade and view, want the long view, keep vertical rise to two stories.
11. Keep near peak elevation for 360 degree view.
12. Keep structure simple.
13. Let the form grow out of the interior need, the site sun, and the "fit" appropriate for a production office.
14. Don't let the form become overwhelming.
15. Preliminary plan works well.
16. Form fit site: earthquake, slope, plants, sun, wind, rain, view.
17. 100 ft. is ok for employee to walk, gives a break.
18. Keep max. vertical to 12 feet. No reason for 2 stories.
19. Let the forms take on their variety of sizes as required.

20. Parking on grade.
21. Make approach interesting.
22. The studio meeting area is part of the work area.
23. Not too simple. Don't want the whole design to be seen at one glance. Subtle.
24. Use the long range view to give a break for the eyes. But put lounge at cliff for the interesting view of beach.
25. Keep direct sunlight out of studio's with a roof overhang.
26. Because of the ideal climate utilize outdoor circulation and outdoor work areas, yet provide an interior connection.
27. Roof form-- a. sun control b. structure c. interior space d. expression of stepping.
28. Orient building so it fits the contours. Use the 45 degree triangle concept to give the maximum view of the ocean.
29. Provide each employee with a view of the ocean.
30. Structure Wood post and beam.
31. Try to fit in the residential neighborhood.
32. Triangular rooms do not work.
33. Keep flexible for future changes is the office organization.



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see under lounge

K.
LOUNGE
or Hall

Reception

Secretariat

Covered
Office

Bed

Deck

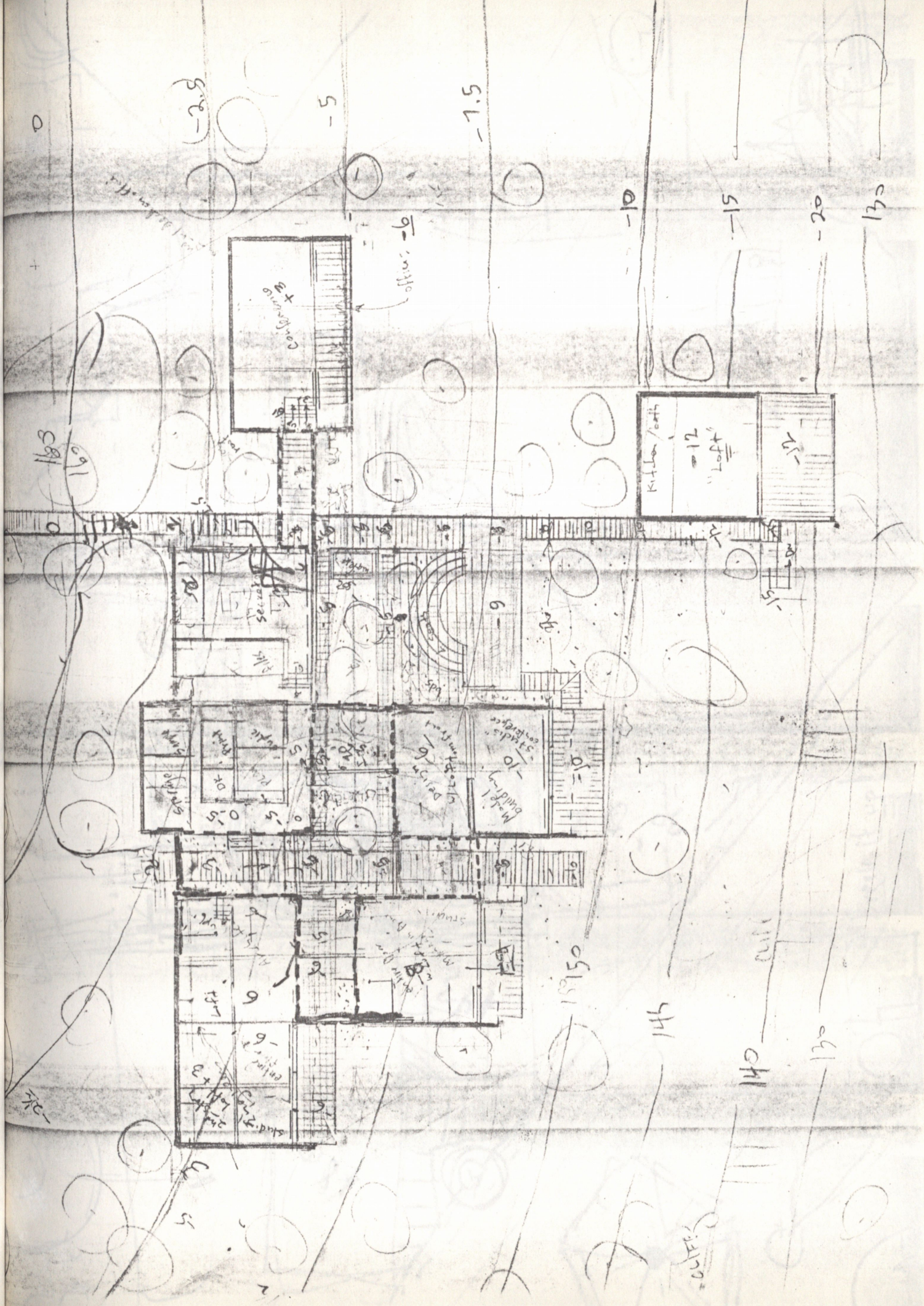
Service

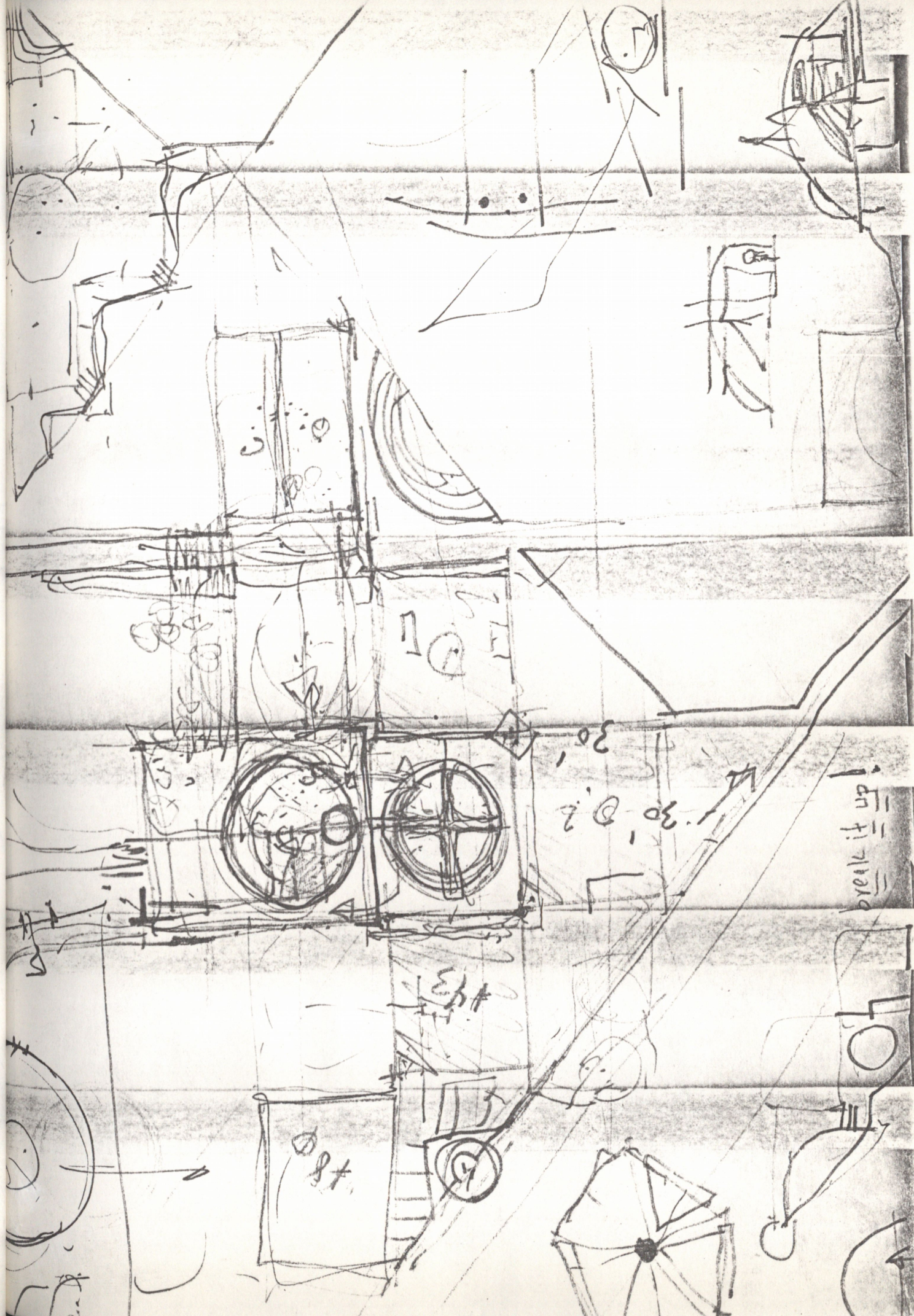
Kitchen

Storage

Design

Kitchen





break it up!

40

30' 30' 30'

143

8+

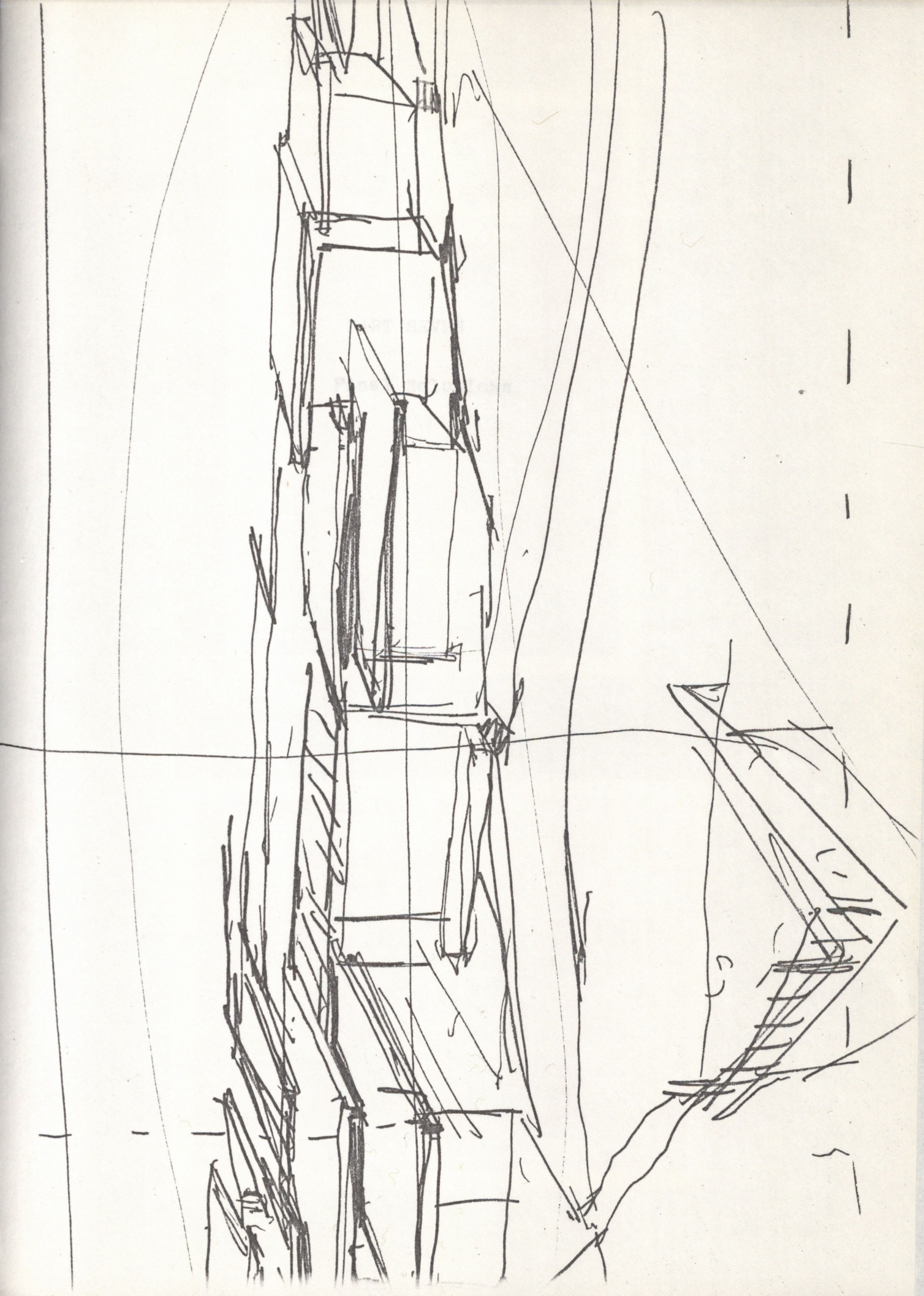
14



• MAY • 73



• MAY • 73



PART SEVEN

Final Solutions





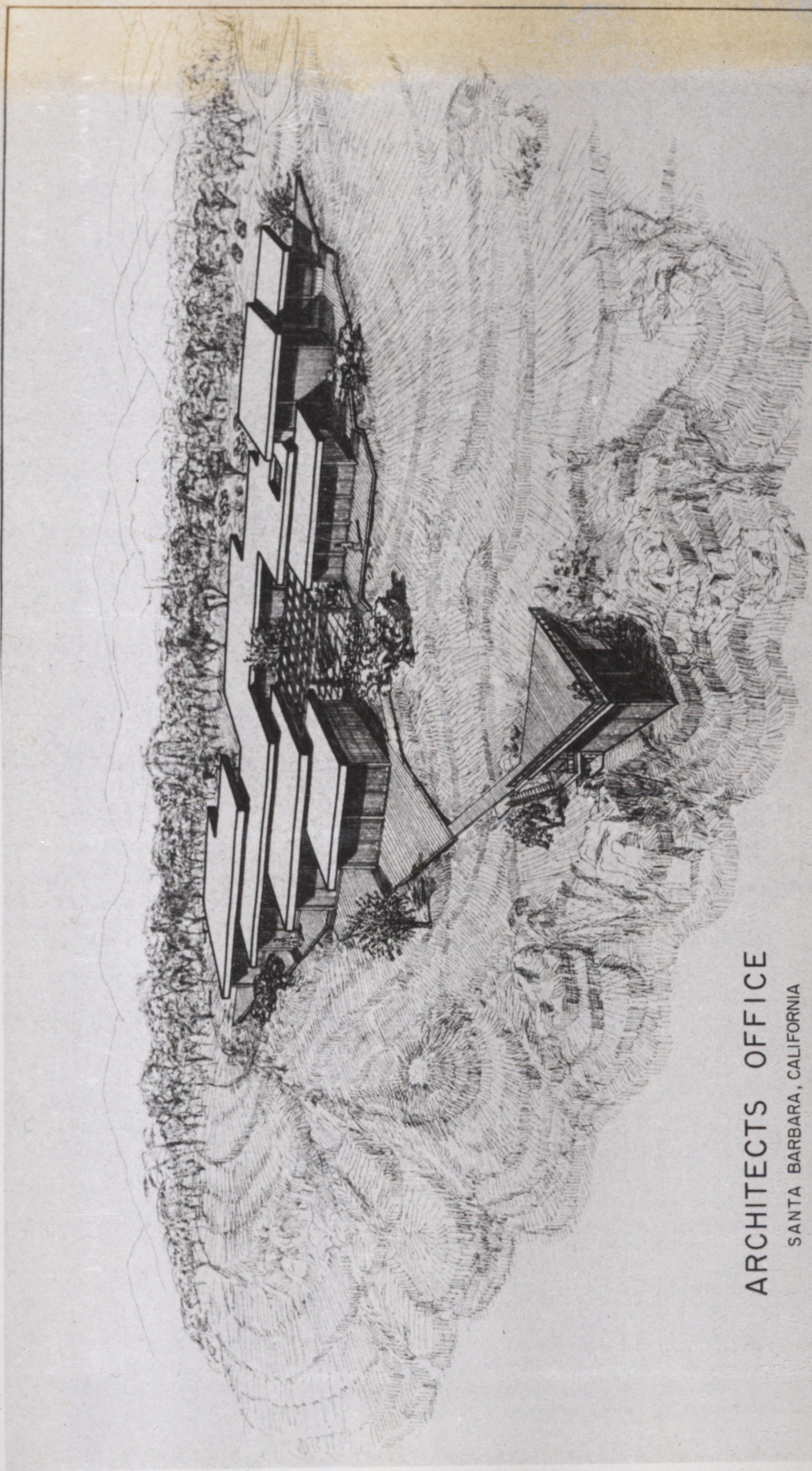
• MAY • 73



• MAY • 73







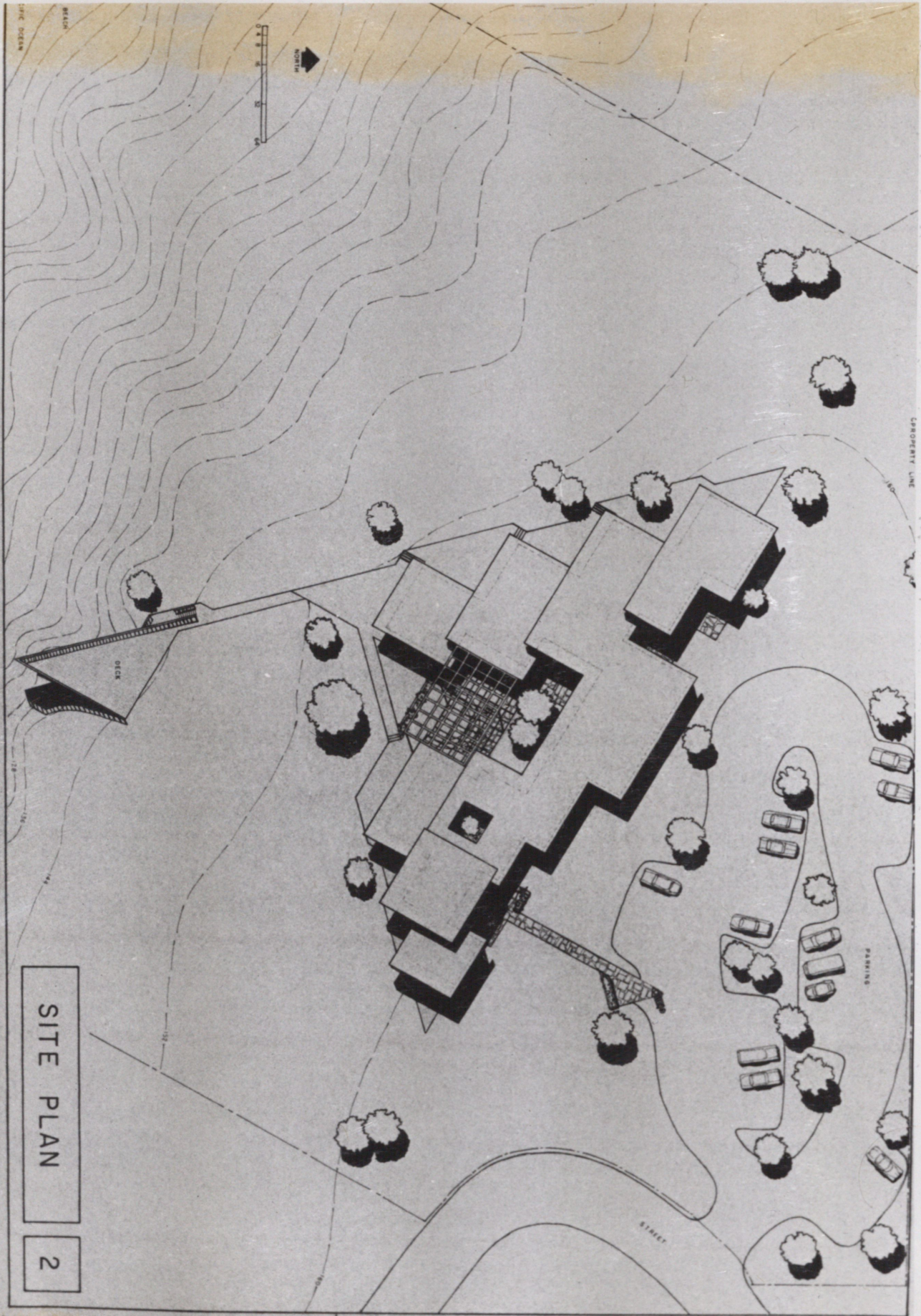
ARCHITECTS OFFICE

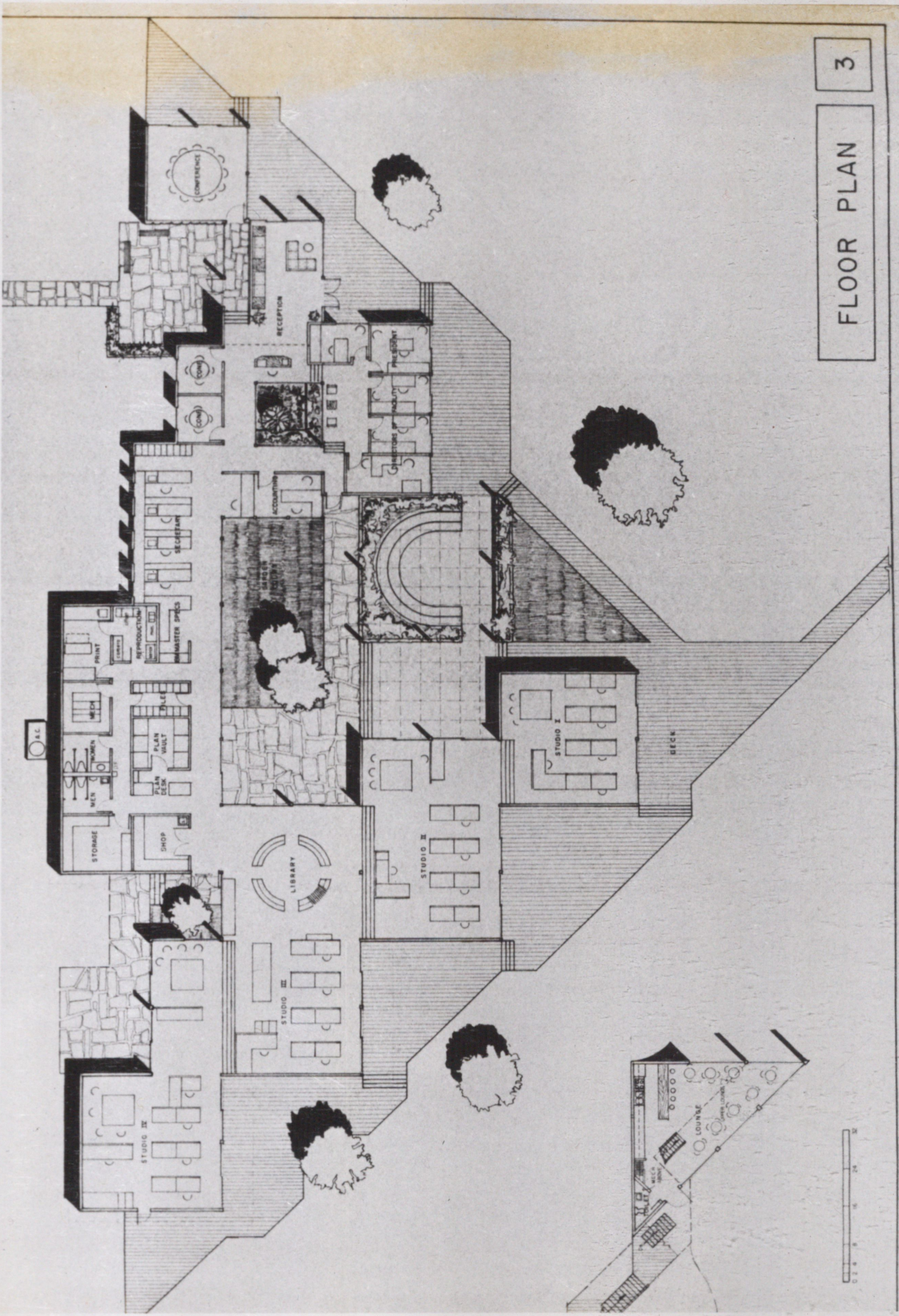
SANTA BARBARA, CALIFORNIA

DESIGNER: GIL BARRY 1973

PERSPECTIVE

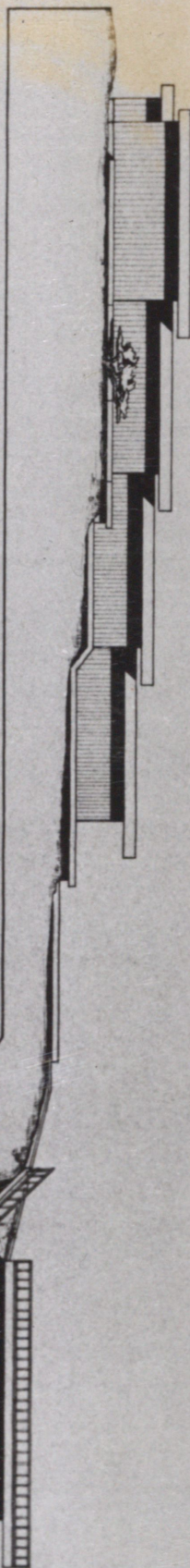
I







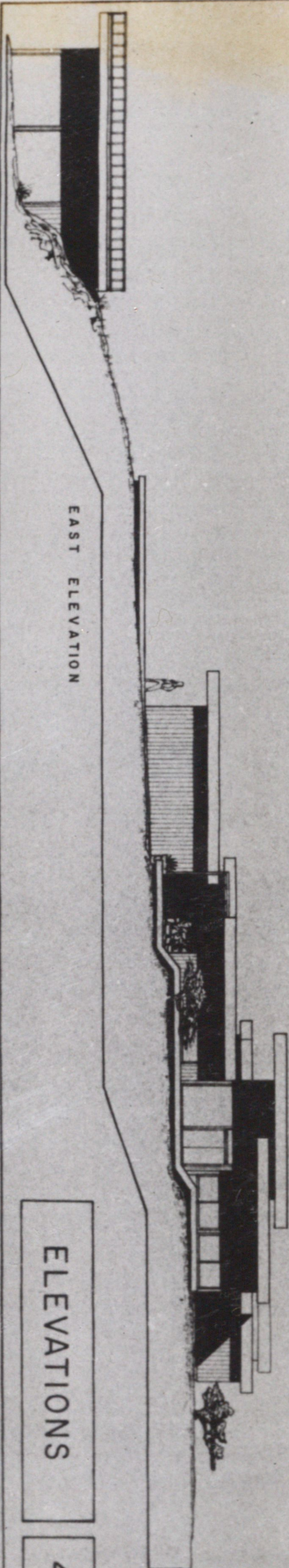
SOUTH ELEVATION



WEST ELEVATION



NORTH ELEVATION

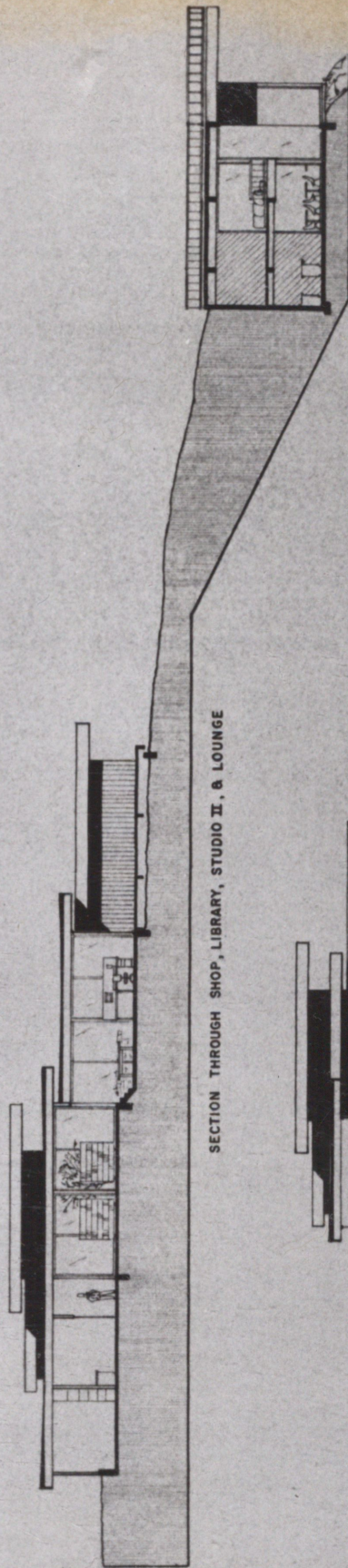


EAST ELEVATION

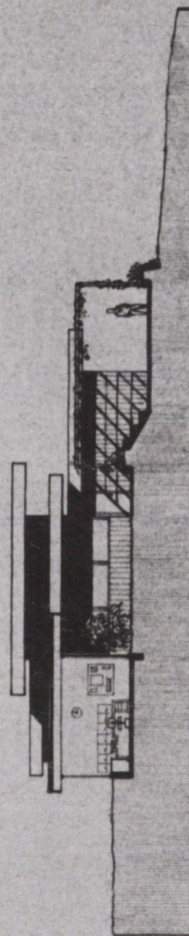
ELEVATIONS



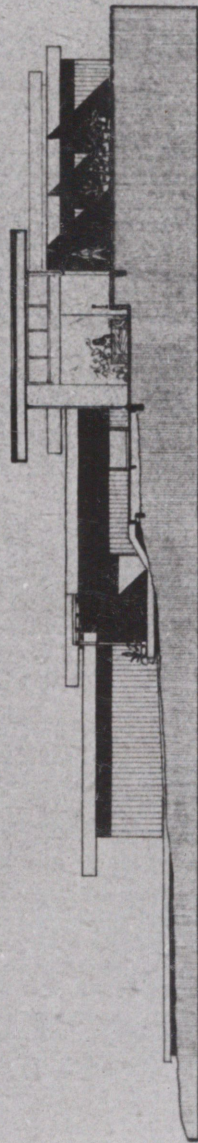
SECTION THROUGH CONFERENCE, RECEPTION, LIBRARY, & STUDIO III



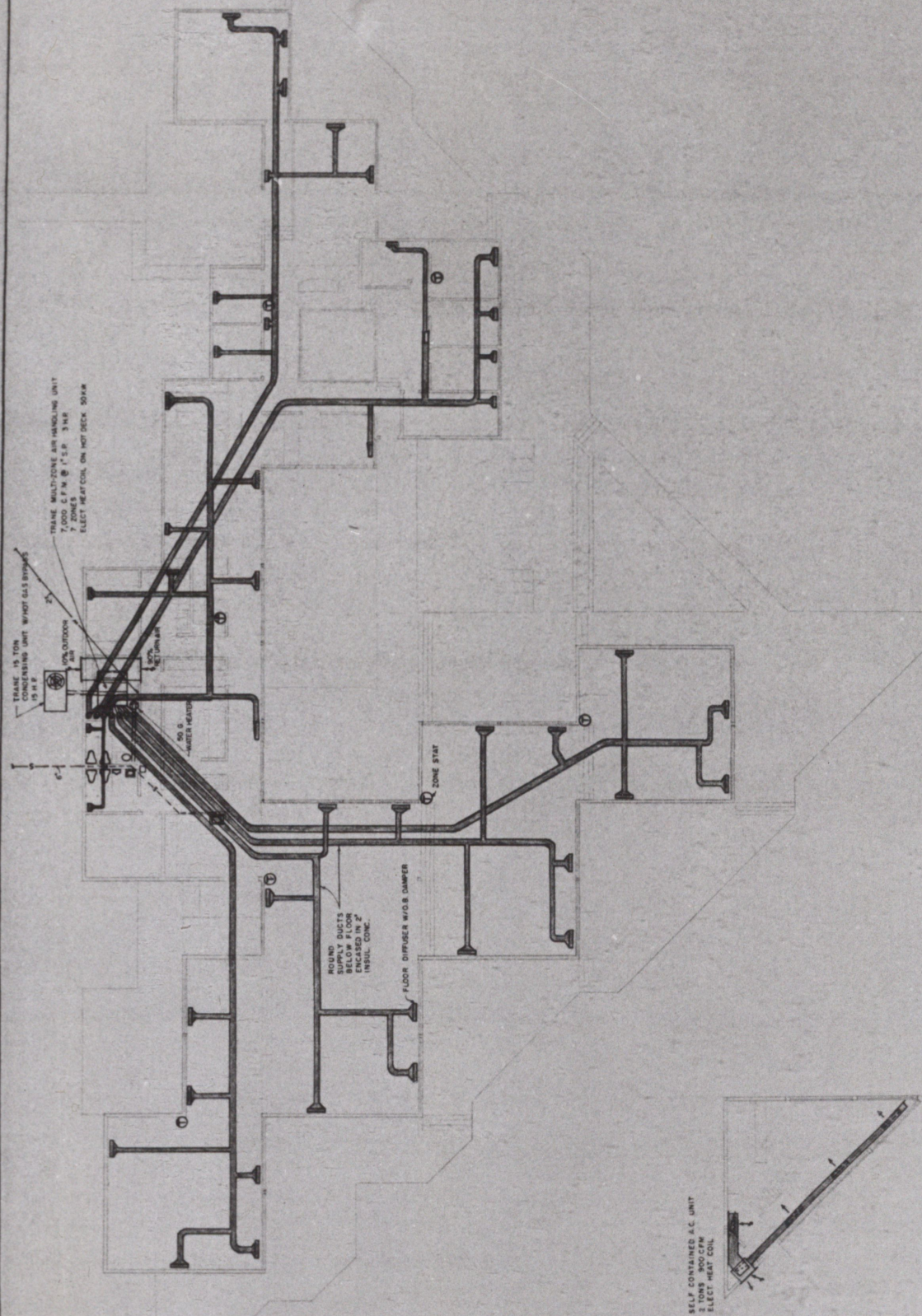
SECTION THROUGH SHOP, LIBRARY, STUDIO II, & LOUNGE

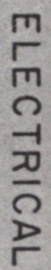


SECTION THROUGH SECRETARY & COURT



SECTION THROUGH RECEPTION





Summary:

The primary goal of my firm is to be successful. I have decided that the way to do this is to hire and keep the best employees. The primary goal of the physical plant is to provide the best possible place to work. The purchase of the ocean front secluded and quiet site is probably the first major decision. The concept of the building is to take advantage of this beautiful site. I tried to give the feeling of being close to outdoors by providing every employee a view of the ocean and a view of the site. The outdoor circulation helps to do this also. I provided all services in a central core for less confusion. The plan of the building fits the office organization for creating architecture. Each man is provided with a generous personal space of his own. I feel that my design was very successful in satisfying the goals. The final jury comments were all on minor points that could be solved by a few minor changes. Perhaps the roof changes should have been 5 feet instead of 3 feet. And a fence wall should be provided in the rear service yard for privacy. The jury conclusion was that this building would be a nice place to work and that it functioned well. I wish to thank Professors Ilmar Reinvald, James D. Gough, David Wessel and my advisor Donn Hogan for their help.

Gil Barry

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