

SECTION 1: DIGEST OF ACHIEVEMENTS

PART B. REFERENCES*

Name of Nominee NED H. ABRAMS

Name	Full Address & ZIP	Area Code & Phone Number	Zip
------	--------------------	--------------------------	-----

First year references (7)

- | | |
|--|--|
| 1. HERBERT WHEELER, F.A.I.A.
638 Franklin Street, State College
814-238-0067 PA, 16803 | 8. JAMES COWAN, F.A.I.A.
6305 Sand Point Way, Seattle, WA
206-253-0030 98115 |
| 2. BERNARD B. ROTHSCHILD, F.A.I.A.
3355 Lenox Road NE Atlanta, GA
404-261-8675 30326 | 9. Phillip M. Bennett, A.I.A.
432 Lake Street, Madison, WI
608-837-8029 53706 |
| 3. ROBERT LYON A.I.A.
2260 Bay Road, Redwood City, CA
415-261-8675 94063 | 10. KELLY R. McADAMS, Arch Prof.
5904 Lookout Mountain Drive, Austin
512-453-7177 TX 78731 |
| 4. E. RUSSELL MOLPUS, A.I.A.
180 Techwood Drive, Atlanta, GA
404-522-5719 30318 | 11. FRED STITT, Guidelines Pub.
Box 456 Orinda, CA
415-254-0693 94563 |
| 5. EDWARD R. AOTANI, A.I.A.
1026 Nuuanu Ave. Honolulu HI 96817
808-531-0586 | 12. JAMES M. HARRIS, F.A.I.A.
3624 North Union, Tacoma, WA
206-759-8798 98407 |
| 6. DAVID LYNCH, Architect
500 Golf Road, Lancaster, PA
717-397-7406 17602 | |
| 7. EDGAR POWERS, JR. 615-377-6309
3310 West End Avenue Nashville TN
808-531-0586 37203 | |

Second year references (3)

- | |
|---|
| 1. JOSEPH ESHERICK, F.A.I.A. (Gold Medalist)
2789 25th Street, San Francisco, CA
415-285-9193 94110 |
| 2. WARREN THOMPSON, A.I.A. Thompson Arch. Group
6790 NorthWest Ave., #104 Fresno, CA
209-432-6500 93711 |
| 3. BRUCE WALKER A.I.A.
P O BOX 1482 Spokane, WA
509-838-8681 99201 |

Third year references (3)

1. _____
2. _____
3. _____

*Of the seven references, a maximum of two may be other than AIA members.

SECTION 2: NOMINATION

1. Ned H. Abrams, AIA of the Santa Clara Valley Chapter
(Name of nominee) (Chapter assignment)

and member of the AIA since 1955 is nominated for Fellowship for notable
(Election date)

contribution to the advancement of the profession of architecture in Service to the Profession

(Category/ies; see Principles Underlying Advancement to Fellowship for a complete listing)

The nomination is made by: (check and sign either A or B)

A. Vote of governing board of Santa Clara Valley Chapter
(Name of component organization)

Michael P. Robinson 9-14-89
(Signature and title of Chapter president or secretary) (Date)

B. Individual members and/or Fellows as follows:

Written Signature and Date	Typed Signature and Chapter
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

2. The nominators designate the following member to be the sponsor of the nomination:

Name Gerald L. Erickson, FAIA Phone 408-252-0116

Address 18710 Newsom Avenue, Cupertino, CA 95014

SECTION 3: PROFILE

(Additional sheets may be inserted, but please be concise.)

TYPEWRITING ONLY

1. Nominee's name NED H. ABRAMS
2. Nominee's mailing address 298 South Sunnyvale Avenue, Suite 103
Sunnyvale, California 94086
3. Nominee's firm name and address as above, Ned H. Abrams, A.I.A.
Phone (408) 737 7977
4. Nominee is registered or licensed to practice architecture in the states or territories of
CA C-697; AZ 1344; OR 375; WA TL 533; NV 29; TN 19673
NCARB, 1027
5. Nominee is engaged in the profession of architecture as
Principal
6. Nominee's date of birth March 13, 1915
7. Place of birth Philadelphia, PA

8. Nominee's education

- A. High school, college or university, postgraduate school, etc.
(in chronological order from earliest to most recent):

Name/Location	No. of Years	Graduation Year	Degree
Simon Gratz High School, Philadelphia, PA	4	1932	--
School of Fine Arts, University Pennsylvania	5	1937	B/Arch.
School of Fine Arts, University Pennsylvania	1	1938	M/Arch. (City Planning)

- B. Scholarships received by nominee:

Undergraduate State Scholarship	4
Graduate Scholarship from Univ. Pennsylvania	1

9. Other data concerning nominee's record:

Was in top 10% of class; elected to Tau Sigma Delta, Honorary
Architectural Fraternity, Epsilon Chapter at U. of Penn. 1937.

NED H. ABRAMS - AIA

ARCHITECT

ARCHITECTURE · SITE PLANNING · CONSULTING · ECONOMICS

Architectural Licenses held by Ned H. Abrams

N. C. A. R. B. #1027

	<u>State</u>	<u>License #</u>	<u>Established</u>
*	1. Alabama	948	1967
*	2. Alaska	1247A	1964
	3. Arizona	1344	1949
	4. California	C697	1946
*	5. Colorado	300172	1958
*	6. Florida	4601	1967
*	7. Georgia	1588	1967
*	8. Idaho	AR959	1978
*	9. Illinois	3326	1948
*	10. Indiana	2417	1971
*	11. Iowa	1223	1968
*	12. Kentucky	1010	1967
*	13. Louisiana	1262	1967
*	14. Michigan	6761	1950
*	15. Minnesota	2511	1965
*	16. Mississippi	745	1965
*	17. Missouri	A2924	1972
*	18. Montana	1163	1979
	19. Nevada	29	1949
*	20. New Mexico	126	1952
*	21. Ohio	4177	1968
	22. Oregon	375	1947
	23. Tennessee	6100 (19673)	1947 (1988)
*	24. Texas	3609	1968
*	25. Utah	150	1947
	26. Washington	TL533	1950

///

*non-renewed, but in good standing

NED H. ABRAMS, ARCHITECT

Born, March 13, 1915, in Philadelphia, PA.

Attended the The School of Fine Arts, University of Pennsylvania, matriculating in 1932.

Received Bachelor of Architecture Degree, 1937; nominated to the Honorary Architectural Fraternity "Tau Sigma Delta" for position in top ten percent of the Class.

Received Degree of Master of Architecture in City Planning, 1938.

Subsequent employment:

My first employment was in Washington, D C for the Constructing Quartermaster of the Army, which was later absorbed into the Corps. of Engineers. Assignments while employed by the Corps. included designing large permanent structures, ie.; the depot supply center at Borinquien Field, Puerto Rico; a new installation at France Field, Canal Zone, Panama.

I was also in charge of developing the walkway systems for Army Hospitals at new posts, camps, bases and stations, and was a specialist in design of kitchens and mess hall installation at new Bases.

In March, 1942, I transferred to Colorado Springs as Architect for all buildings and additions at Fort Carson, duplicating the Installation at Fort Ord, CA. In 1943, I was transferred to the Pacific Division, which encompassed the eleven western States and Alaska, and placed in charge of excess and surplus Army property. This position involved removing construction materials from bases where they were not needed, to those with shortages. Particularly important, were the Hanford Engineering Works (site of the production of material for the first atom bomb), and the Air Force Station at Tonopah, Nevada, which was constructed in 30 days to receive the first B-29 bombers.

In 1944, I was transferred to San Francisco and asked to undertake distribution of all surplus materials from theaters of war in the Pacific. By the end of 1945, this surplus had been re-located either to other posts and camps or stations in the Ninth Service Command, or forwarded to the Treasury Department for use by the Public. There being no positions for architects in the Corps. of Engineers, I was retired from this Program.

In 1946, I entered into partnership with a mechanical engineer in San Francisco. Our practice was in industrial and process installations, such as paper mills, abattoirs, cereal plants and flour mills.

That year, I designed the first precast building in California for General Mills, at Lodi, Ca., the design of which won in a competition. The parts were made in Salt Lake City and shipped to Lodi and had, to the best of my knowledge, the first pipe chord truss, which fostered ease of cleaning. In connection with this building, a subsequent flour mill for Los Angeles, and a cereal plant in South Chicago, I developed the first of three Patents I hold for both dry and liquid storage, which design is especially suited to storage of toxic and nuclear wastes.

In 1947, I designed for construction in San Jose, CA, a pre-cast concrete structure (Kaufman Meat & San Jose Meat Companies), and pioneered the first tilt-up concrete construction, employing Simpson and Stratta as Consultants. They went on to become the major Engineering Consultants for this type of construction.

By 1948, I was equipped to open my own office in Sunnyvale, Ca.

1988

I believe that the qualifications you seek are in the field of community and/or public service, service to the profession and individual architects not necessarily given through the Institute, although local Chapters have benefitted.

My first public service came about when I met Fr. John Buchanan, a Jesuit missionary for the Archdiocese of Alaska. He had been a classmate of one of the franchise holders of a Mobilhome plant, and at that time (1951), I was the consulting architect for the parent corporation in Bakersfield, CA.. I was, at that time, designing a Hotel in Spokane, and met Fr. Buchanan while visiting in nearby Sand Point, Idaho. He told me that he was building log cabin missions along the Alaska Highway, and I offered to design a series of crosses for these installations. Several months later, he arrived at my office in Sunnyvale and stated that our mutual Idaho friend instructed me to design an installation for him; installation to these gentlemen meant church/school. It appeared that he would be able to receive a Grant of a section of land for his proposed Eskimo Boarding School if he could show to what use he would put this land.

He wanted a modular plan, progressing from a one-room school house, through grade school, high school, and finally college. He stated fairly "up-front" that there would be no fee in this for me, since he had better things to do with the limited funds he had at his command. With this understanding, I agreed, and proceeded to create such a Plan.

Alaska then was still a Territory, and in the ensuing months, the federal government made 320 acres available to his cause.

The next year, he arrived at my office and said he wanted a "T" shaped building that would house 50 students, six nuns, and two priests, and not to design anything longer than 16' since that was the size of the lumber his Idaho friend would give him. We prepared the plans for him and did not see him until the next year when he said he had got hold of a concrete block machine and "did we know where he could get cement cheap?" A friend of mine, an office of Kaiser Cement, made 3000 sacks available to him. Now he had plans, lumber and cement. On this same visit, he was accompanied by Fr. Spils who, it turned out, had come along to learn architecture and complete the drawings under my direction. This wholly new concept encompassed an open ring, with the buildings as spokes and, true to his plan, Fr. Buchanan's friend remained behind that summer to help get the show on the Yukon, so to speak. My office worked on this continuing project so long that we eventually became licensed in Aalaska in order to design schoolrooms, gymnasiums, dormitories, chapels and missions, all under the same fee schedule as the original in 1952, for a period covering more than twenty interesting years. Several years into occupancy, we were pleased to hear of the student exchange program, which included people from the Congo region of Africa, and I've privately held the view that this combined effort contributed in some part to Alaska's Statehood.

At about this same time, my office was developing the System! which has come to be called "cut and paste", using photographic techniques.

Our architectural work was progressing sufficiently rapidly to require licensing in 26 states (list enclosed), and we found it to be mutually beneficial to employ local firms who would assist us with local requirements and supervise projects using this design system. They then benefitted by employing these improvements in their own areas.

Our System entailed the use of copiers, offset, reduced size prints, in sufficient number so each Subcontractor could have complete plans - and in two color so that the discipline on any sheet would be clear and unambiguous. In 1967, one of these sets was sent to a Contractor in Philadelphia who was to build the housing project we were doing for a church group in Memphis, TN. He asked to take a set of these plans to Penn. State University, where he was to give a lecture to student architects on "better communications between architects and contractors." Professor Wheeler, the sponsor and a classmate of mine, asked me to attend a conference of Emerging Techniques to be held there the following Spring (1968). Attending were forty participants, including not less than two future National AIA presidents. This conference was repeated the following year, with many of the same group, and the third year it was expanded to include over 200 practicing architects. At this session, I was asked to be guest speaker and to bring exhibits of our System. Other speakers were from large firms, including Robert Hastings, then president of AIA; John DeMoll, of Ballinger, Inc., of Philadelphia, brother of Louis DeMoll, future AIA president, who later visited my office in Sunnyvale. He later reported to me that he had increased production output by over 200% from data learned on his visit.

In 1969, I was asked to conduct a seminar in my Sunnyvale office for six firms from the East Coast. I then realized a format would be needed if I planned to continue to present seminars. Subsequently, this format was developed and used for National AIA gatherings, in fact, my office of 6,800⁺ was designed to accommodate the seminars which utilized all the equipment we had learned to incorporate in our Cutting Production Costs system. These seminars continued, underwritten by National AIA until 1976, at which time I independently continued under my corporation title, Design Production Techniques.

A list follows of the major activities and entities who attended or asked me to speak to their organizations, or at their offices to principals and staff. One group came from as far away as Moscow.

In 1978, at the request of G.S.A. and A.I.A., I conducted a review of our techniques for a team of ten Russian architects and engineers at our Sunnyvale office.

Service to the profession is separated into groups as follows, approximate attendance is noted and times presented within ().

A.	Sponsored by Universities (11) attendees	1,465
B.	Sponsored by State AIA Conventions (3)	360
C.	Sponsored by Components (12)	658
D.	Speaker at National AIA Conventions (4)	440
E.	Seminars at firms, at their request (14)	510
F.	Sponsored by Organizations, Societies, and commercially allied firms. (8)	460
G.	Sponsored by National AIA Continuing Ed. Dept., with <u>Design Production Techniques, Inc.</u> at our offices in Sunnyvale, CA and Mt. Laurel, New Jersey	550

total attendees 4,440

H. List of representatives of major architectural offices.

I. Membership on Committees and Symposium (4)

J. Design Award*

K. Public Service**

* Won competition for Merilees Housing at Stanford University, best of 18 submissions and constructed as proposed.

** Public service in my community; as principal speaker in 1950 at bond drive which successfully raised \$20,000,000 for Fremont Union High School District.

** 1972 - 1975 Rotary Club of Sunnyvale; Director, Vice President, President; instrumental in directing the activity which resulted in the revitalization of downtown Sunnyvale, and subsequently the Town Center Shopping Mall. This project was initiated by Keith Pritchard, attorney, and myself and, in 1975 the City of Sunnyvale took over and completed what Sunnyvale Rotary had begun.

(Full information regarding above listed Colleges/Universities and other Sponsors is on file at my office).

5
In the course of my practice, I have generally specialized in housing and planning, and was selected by the Department of Defense to develop the design manual for cluster housing, which was adopted as a national planning standard by D.H.U.D.

I am also enclosing a reprint of Chapter 18 of Current Techniques in Architectural Practice, the current manual for practice, which I was asked to write.

Also enclosed is a reprint of my article for March 1970, AIA Journal, with forward and acknowledgement of J. P. J., Dallas, for their Integraph format; Paper Plane, March, 1978; Plan and Print, October, 1977, and letter from Russell Molpus, 1979, which relates to AAECK Design, outlined in the Paper Plane reprint, and lastly A. B. Dick Company's description of the seminars conducted by Design Production Techniques, Inc.

///

SECTION 4: SCIENCE OF CONSTRUCTION

Type each numbered item on a separate sheet.

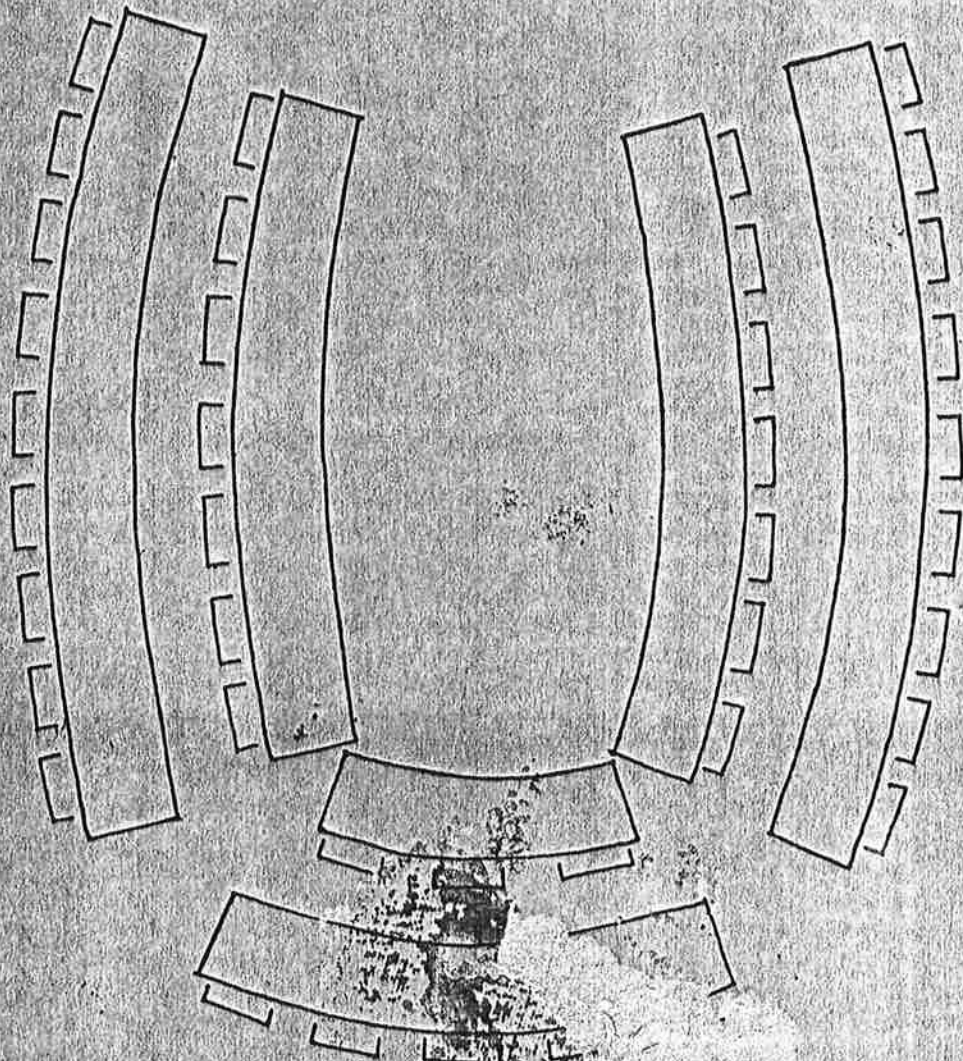
1. List the significant work of the nominee in this field:

Project	Location	Year of Completion
GENERAL MILLS CEREAL PLANT	LODI, CA	1946

2. Describe the nominee's achievements in science of construction that are considered notable contributions to the advancement of the profession: the nominee designed the first pre-cast building erected in CA. Fabricated in Salt Lake City, it was shipped to Lodi, where it has been in continuous use since occupancy by General Mills in 1946
- a) the nominee has three patents for concrete storage facilities (copies encld).
- b) the nominee designed precast concrete containers for Utah Copper Company, using only two forms to cast 1400 tanks in 100 days.
- c) the nominee initiated the use of tilt-up precast in northern CA and designed the first precast building in the Bay Area (1948), and designed the first all-welded steel high rise building west of the Mississippi in 1952. (The Ridpath Hotel, Spokane, WA.)
- d) List the significant awards, honors and recognition accorded by the Institute and other professional, governmental or civic organizations for the nominee's work in science of construction. *[List various types of awards together, i.e., AIA awards (national, regional, local), community service awards, etc.]*
- 2.e) the Nominee developed a complete system of Design and Production of Contract drawings.
- f) the nominee has designed a copyrighted system of steel construction which uses not over 60% of the steel usually required for high-rise buildings.
3. Institute recognition; in 1975, the Continuing Education Dept. recognized the value of nominee's design and production system, sponsoring regularly scheduled seminars at nominee's Sunnyvale office.
4. List the books or articles written by or about the nominee in connection with science of construction:

Author	Title of Book or Article	Publication Date	Publisher
NED H. ABRAMS	A DESIGN SYSTEM THAT PRODUCES CONTRACT DWGS	March, 1970	A.I.A. JOURNAL
NED H. ABRAMS	CURRENT TECHNIQUES IN ARCHITECTURAL PRACTICE	1976	A.I.A. and ARCH. RECORD

CONFERENCE II
MANAGING ARCHITECTS
in PRIVATE PRACTICE



A CONFERENCE SPONSORED BY
THE DEPARTMENT OF ARCHITECTURAL ENGINEERING
THE PENNSYLVANIA STATE UNIVERSITY
FEBRUARY 9-12, 1969

Kent Addis		Herb Wheeler	Roy Johnson	Don Witt
------------	--	--------------	-------------	----------

Wes Lane
Sewell Mathre
Stuart Knoop
Bill Reed
Harry Schroeder
Brad Shaw
Jim Cowan
Howard Sherman
Dick Sweitzer

Scott Ferebee
Herschel Walters
Ewing Miller
Gordon Arnott
Bruce Smith
John * Diehl
Frank * Miller

Gerry Cain	Herb Smith	Paul Craven
------------	------------	-------------

Carl Bradley
Don Jarvis
Henry Schirmer
Von von Brock
Dick Pearce
Larry Berri
Howard Keister

Ned Abrams
Harry Golemon
Herb Duncan
Frank Helyar
William Boney
Ralph Burt
Gene O'Neil
Warren Hardwicke
Calvin Howell

Peter Christie	Elton Gildow	Doug Smith	Duane Waldo	John McCrady
----------------	--------------	------------	-------------	--------------

* Did not arrive

MANAGEMENT CHALLENGES OF THE FUTURE
Introduction of Colloquy Faculty & Participants -
Colloquy Objectives, Program, Ground Rules &
Arrangements.

THE COLLOQUY FACULTY

- Part 1 - Orientation of Participants including review of Objectives, Program Schedule, Ground Rules and Arrangements by C. Herbert Wheeler, Jr., Program Director and Kent Addis, Conference Coordinator.
- Part 2 - The Challenges of Practice Management for the Future - for the Seventies - discussed by the Colloquy Faculty:

Ned H. Abrams
Carl L. Bradley
John M. Free
Harry A. Golemon
H. King Graf
Robert F. Hastings

Clifford R. Hayes
Frank W. Helyar
William M. Peña
Chester E. Roemer
Herbert H. Swinburne
C. Herbert Wheeler, Jr.

NATIONAL COLLOQUY: EMERGING TECHNIQUES OF PRACTICE MANAGEMENT
 THE PENNSYLVANIA STATE UNIVERSITY
 DECEMBER 14-17, 1969



WILLIE M. PENA, Partner
 Caudill, Rowlett & Scott
 Houston, Texas

ROBERT F. HASTINGS, President
 Smith, Hinchman & Grylls and Associates
 Detroit, Michigan



COLLOQUY FACULTY



CHESTER E. ROEMER,
 Executive Vice President for
 Production and Construction Services
 Hellmuth, Obata & Kassabaum, Inc.
 St. Louis, Missouri

H. KING GRAF, Executive Vice President
 for Management
 Hellmuth, Obata & Kassabaum, Inc.
 St. Louis, Missouri



JOHN W. FREE
 Senior Vice President
 Leo A. Daly
 Omaha, Nebraska



CLIFFORD R. HAYES, Partner
 Campbell, Rea, Hayes & Large
 Altoona, Pennsylvania



PROFESSIONAL PRACTICE SEMINAR FOR ARCHITECTS AND ENGINEERS

THE BANFF CENTRE

SEMINAR FACULTY

JANUARY 16-18 1972



C. HERBERT WHEELER, JR. Architect and Professor of Architectural Engineering, The Pennsylvania State University



HERBERT H. SWINBURNE, Senior Partner, The Nolen and Swinburne Partnership, Architects Engineers Planners Philadelphia, Pennsylvania



CYRIL F. T. ROUNTHWAITE, Partner, Marani, Rounthwaite and Dick, Architects, Toronto, Ontario



JOHN H. COOK, Partner, J. H. Cook and Associates, Architects, Calgary, Alberta



WILLIAM M. PENA, Senior Vice-President, Caudill, Rowlett and Scott, Architects/Planners/Engineers, Houston, Texas



NED H. ABRAMS, Proprietor, Ned H. Abrams - Architect, Sunnyvale, California

PROFESSIONAL PRACTICE SEMINAR FOR ARCHITECTS AND ENGINEERS

Banff School of Fine Arts

January 16 - 18, 1972

PROGRAM SCHEDULE

AB - Administration Building,
Banff School of Fine Arts

TC - Theatre Arts Centre Building,
Banff School of Fine Arts

SUNDAY 16/1/72

5:00 p.m.	Arrival of Seminar Faculty and Participants Reception and Orientation	Solarium, AB		
6:30 p.m.	Buffer Supper	Dining Room, AB		
7:30 p.m.	Social (one-half hour)	Solarium, AB		
8:00 p.m. to 9:00 p.m.	<table border="1"><tr><td>Session 1</td></tr><tr><td>PROFESSIONAL PRACTICE OF THE FUTURE Introduction of Seminar faculty and participants - Seminar Objectives, Program, Ground Rules and Arrangements THE SEMINAR FACULTY AND WHEELER</td></tr></table>	Session 1	PROFESSIONAL PRACTICE OF THE FUTURE Introduction of Seminar faculty and participants - Seminar Objectives, Program, Ground Rules and Arrangements THE SEMINAR FACULTY AND WHEELER	Conference Room G124, TC
Session 1				
PROFESSIONAL PRACTICE OF THE FUTURE Introduction of Seminar faculty and participants - Seminar Objectives, Program, Ground Rules and Arrangements THE SEMINAR FACULTY AND WHEELER				

MONDAY 17/1/72

8:00 a.m.	Breakfast (only one serving time)	Dining Room, AB		
8:45 a.m.	Orientation for Late Arrivals	Conference Room G124, TC		
9:00 a.m.	<table border="1"><tr><td>Session 2</td></tr><tr><td>PRACTICE MANAGEMENT AND NEW BUSINESS DEVELOPMENT - Principles of Practice and Organization of NSA - Management of New Business Program - Client Management Program including Client Presentations, Communications and Relations HERBERT H. SWINBURNE, Managing Partner Nolen-Swinburne and Associates, Architects, Philadelphia, Penn.</td></tr></table>	Session 2	PRACTICE MANAGEMENT AND NEW BUSINESS DEVELOPMENT - Principles of Practice and Organization of NSA - Management of New Business Program - Client Management Program including Client Presentations, Communications and Relations HERBERT H. SWINBURNE, Managing Partner Nolen-Swinburne and Associates, Architects, Philadelphia, Penn.	Conference Room G124, TC
Session 2				
PRACTICE MANAGEMENT AND NEW BUSINESS DEVELOPMENT - Principles of Practice and Organization of NSA - Management of New Business Program - Client Management Program including Client Presentations, Communications and Relations HERBERT H. SWINBURNE, Managing Partner Nolen-Swinburne and Associates, Architects, Philadelphia, Penn.				
10:30 a.m.	Coffee Break	Classrooms, TC		

MONDAY (cont.)

11:00 a.m.	<p style="text-align: center;">Session 3</p> <p>PRACTICE MANAGEMENT</p> <p>CYRIL F. T. ROUNTHWAITE, Partner Marani, Rounthwaite and Dick, Architects, Toronto, Ontario</p>	Conference Room G124, TC
12:30 p.m.	Lunch	Dining Room, AB
1:30 p.m.	<p style="text-align: center;">Session 4</p> <p>PROGRAMMING MANAGEMENT</p> <p>JIGGS H. COOK, Partner J. H. Cook and Associates, Architects, Calgary, Alberta</p>	Conference Room G124, TC
3:00 p.m.	Coffee Break	Classrooms, TC
3:30 p.m.	<p style="text-align: center;">Session 5</p> <p>PROGRAMMING MANAGEMENT AND TECHNIQUES Principles of Practice and Organization of CRS - Management of the Programming Function - Systematic Procedures for Programming - Squatters' Techniques and Evaluation Procedures</p> <p>WILLIAM M. PENA, Senior Vice-President Caudill, Rowlett and Scott, Architects/Planners/Engineers, Houston, Texas</p>	Conference Room G124, TC
5:30 p.m.	Gather in Lobby of Administration Building and leave for Banff Springs Hotel. (You will be bussed to and from the Hotel.)	Administration Building
6:00 p.m.	Social Hour and Informal Supper	Banff Springs Hotel
Evening	Participants' Bull Sessions - Informal (Taverns, etc.)	

TUESDAY 18/1/72

8:00 a.m.	Breakfast (only one serving time)	Dining Room, AB
9:00 a.m.	<p style="text-align: center;">Session 6</p> <p>A DESIGN SYSTEM ONLY INCIDENTALLY USING PHOTOGRAPHY AND PRINTING</p> <p>Principles of Practice and Organization of NHA - Development of a System of Design - Techniques of Photographic Documentation - Multiple Printing and Automatic Typing in Design</p> <p>NED H. ABRAMS, Proprietor Ned H. Abrams - Architect, Sunnyvale, California</p>	Conference Room G124, TC
10:30 a.m.	Coffee Break	Classrooms, TC

TUESDAY (cont.)

11:00 a.m.

Session 7
PRODUCTION MANAGEMENT
DONALD L. SINCLAIR, Partner Sinclair, Skakun, Naito, Architects, Edmonton, Alberta

Conference Room
G124, TC

12:30 p.m.

Lunch

Dining Room, AB

1:30 p.m.

Session 8
FUTURE DIRECTIONS OF PRACTICE
C. HERBERT WHEELER AND FACULTY

Conference Room
G124, TC

3:00 p.m.

Coffee Break

Classrooms, TC

3:30 p.m.

Session 9
EFFECTS OF NEW TAX LEGISLATION ON PROFESSIONAL PRACTICES
FRANK D. JONES, Professor Faculty of Law, The University of Alberta, Edmonton, Alberta

Conference Room
G124, TC

UNIVERSITY OF WISCONSIN-EXTENSION
ENGINEERING INSTITUTE
MADISON, WISCONSIN

JOHN P. KLUS, Chairman
Department of Engineering

WILLIAM W. WUERGER, Director
Engineering Institutes & Short Courses

INNOVATIONS IN WORKING DRAWINGS

APRIL 13-14, 1972

INSTITUTE SPEAKERS

NED H. ABRAMS
Architect
575 Britton Avenue
Sunnyvale, California 94088

PHILIP M. BENNETT
Program Director
Department of Engineering
University of Wisconsin-Extension
432 North Lake Street
Madison, Wisconsin 53706

ANTHONY J. GROH
Vice President and Project Manager
Jos. P. Jansen Co., Inc.
6333 West Douglas
Milwaukee, Wisconsin 53218

ARNOLD F. IGLEBURGER
Partner
Igleburger, Henderson & Nowak,
Architects Associated
635 Hulman Building
Dayton, Ohio 45402

W. RANDLE IREDALE
Architect, Partner
Rhone & Iredale Architects
1100 West 7th Avenue
Vancouver 9, British Columbia
CANADA

STANLEY R. KENT
Associate Professor
Department of Architecture
University of Toronto
Toronto, Ontario
CANADA

BILL D. SMITH
Senior Associate Architect
Jarvis Putty Jarvis, Inc.
2010 One Main Place
Dallas, Texas 75250

HERB TOWNSEND
Sales Representative
Dayton Blue Print Company
222 North St. Clair Street
Dayton, Ohio 45402

EDISON J. WILLIS
Assistant Director of Production
Odell Associates, Inc.
102 West Trade Street
Charlotte, North Carolina 28202

REGISTERED CONFEREES

Alvin Allen
Job Captain
Fabrap
44 Broad St.
Atlanta, GA 30303

John C. Anderson
Vice President/Secretary
Thorsen & Thorshov Assoc., Inc.
700 National Building
Minneapolis, MN 55402

Larry Anderson
Lorenz, Williams, Lively & Likens
2600 Winters Bank Bldg.
Dayton, OH 45402

Edward Bailey
Draftsman
The Upjohn Co.
Portage Road Plant
Kalamazoo, MI 49001

XPERIMENT!

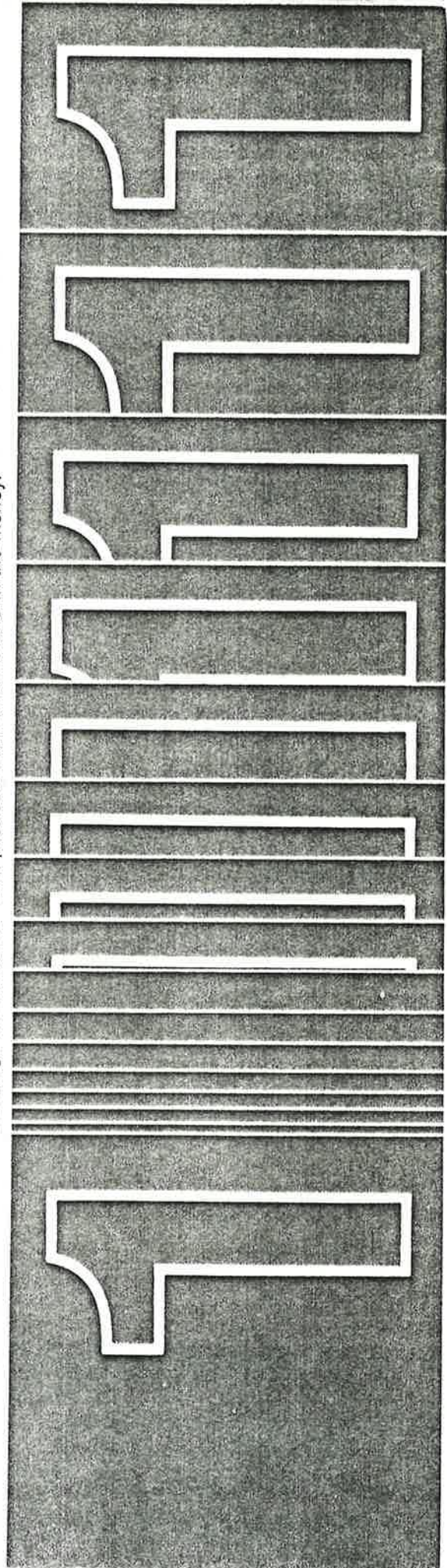
In 1968, I attended a management conference at Penn State where 40 architects were to bring reports of their unique techniques of practice. All of us enjoyed the clever presentation by Ned Abrams of Sunnyvale, California, the story of his office's use of offset lithography. This was a deep blow to my pride since I had come to that conference intending to show how our firm, Jarvis Putty Jarvis of Dallas, uses various printed literature in our design presentations. But Ned hit straight to our solar plexus — "You mean you and your partner/brother have grown up as the sons of a lithographer and you don't use his techniques at every stage in your architectural practice?" He then proceeded to describe great efficiencies and savings in his own approach.

I limped home, but for over a year rationalized that "after all, our work isn't repetitive like Ned's apartment complexes" and "we concentrate on innovative quality design, not production techniques."

Producing the contract documents on our largest job, however, exasperated us with routine drafting and led us to realize we had to find more efficient techniques of practicing architecture.

As we examined many of our plans we realized that untold dollars had been paid—and worse, hours of precious talent wasted—creating new north arrow symbols, drawing the wood grain on slab doors, repeating the same "Floor Plan" and "South Elevation" titles.

We know that simply recovering the time spent in these useless chores would make a tremendous increase in our efficiency. But a truly efficient system should do more than recover wasted hours . . . it should assist us in the creation of architecture. *By its nature* it should help us produce the buildings we conceive—and produce them on time and in the money.



KNOWLEDGEMENTS

We've relied heavily on the advice and encouragement from other professionals who have contributed significantly to our efforts.

- **Herbert Wheeler, AIA**, for his excellent continuing education conferences for architects at Pennsylvania State University.
- **Ned Abrams, AIA**, and other conferees from the Penn State Conference of 1969. Ned's work is a real pioneering effort and his enthusiastic sharing of his approach is a real example of professionalism.
- **W. E. Jarvis & Lynn Jarvis** at the Jarvis Press, who gave us our basic knowledge and initial encouragement for the experiment. Our thanks for the fine lithography of the cover and color process work in this book.
- **Thomas Blueprint Company**, who assisted our efforts greatly by printing technical parts of this book. Their interest and enthusiasm have been invaluable.
- **Our Consultants**, whose willingness to enter into the experiment with us is another example of their innovative professionalism. We are especially appreciative to Structural Engineers—**Mayer Brochette Duval**, and **Datum, Inc.**; Mechanical/Electrical Engineers—**Ratliff Purdy & McGuire** and **W. K. Hall**; Food Service Consultant, **Gene Rice**; and Landscape Architects, **Myrick Newman Dahlberg**.
- **Gordon Cathey**, for the graphic design of this book

JARVIS PUTTY JARVIS, INC.

PRINCIPALS

- Donald E. Jarvis
- H. Duane Jarvis
- Paul G. Putty, Jr.
- Z. E. Wilkinson
- Bill D. Smith

ASSOCIATE ARCHITECTS

- David L. Atteberry
- Richard E. Morgan
- William H. Workman

ASSOCIATES

- Weidon W. Nash, Jr.
- Joseph R. Drake
- George R. Hicks, II
- Jack E. Youngblood
- Pat Johnson

A 'Design System' That Produces Contract Drawings

by NED H. ABRAMS, AIA

The practice of drawing and redrawing identical elements for site plans and buildings is truly archaic. Here is an office that for more than 20 years has used and refined certain techniques which have become normal procedure.

Soon after opening our office in 1948, we acquired a client who constructed factory-built homes which he franchised to 19 producers in California and other parts of the country. These structures were to be completely built and ready for occupancy in 14 days. Delays in processing financing approvals being a problem, I suggested to my client that we reduce all of the drawings to a size which, when folded in half, would fit into an 8½x11-inch envelope for easier handling. Our next step was to modify our drafting system to satisfy the overall requirements of the client and his franchise holders. To solve this problem, we devised a system of coding for various floor plans, etc., and a means of producing the drawings more rapidly.

From window frames, 2x4 lumber, plywood and a photographic lens we made a simple fixed-focus camera, which would reduce the original copy to half scale or one-quarter size. We made all our drawings at ½-inch scale on 22x34-inch sheets. This was large enough to draw all of the details including studs. Since the drawing was large, there was adequate room for notes, finishes, dimensions and information which would have been crowded and unreadable if produced at ¼-inch scale. It was now no longer necessary to draw more than the change from the last drawing such as changes in the title, the finish, the fenestration, the roof, etc., to produce a new drawing. From photographic negatives of those drawings, now reduced to ¼-inch scale, we made diazo prints. Once approved by the lender, all of the subsequent prints resulting from the same negative did not require additional checking, except in the most cursory manner, thus cutting down the processing time.

When the client desired to cut down his blueprint bills, we contacted a local printer, who printed two pages at once on an offset press and cut them apart when printed. From the standpoint of simplifying the design work and keeping the client in production, our "design system" worked perfectly.

In 1952 we moved our office to a new location in Sunnyvale, where we built a homemade darkroom camera with a capacity of 48x96 inches on both copyboard and film holder, with which we could enlarge 10 times or reduce 10 times from the original copy.

The next project on which we used our design system was for a 500-unit Air Force housing project. Our contract for planning, designing and preparation of drawings and specifications was 45 days, exclusive of review time. After designing the houses, we reduced them to ¼₁₀-inch scale and did the site planning from accurate prints of the detailed floor plans. We prepared a base site plan, and on a clear sheet overlay we pasted all of the house plans, with the proper orientation and clearances. These were photographed and a positive film master was produced.

We then made reproducible prints to which were added the

house, and it became a very easy project to complete. The working drawings of the individual houses were done with overlays to change the plans, the locations of carports, the differing exterior treatments, varying roofs, etc. The project required two separate sets of plans totaling 156 sheets, one set for 253 houses and the other set for 247 houses, plus 21 sheets for the off-site set, and all were produced within the 45 days by four men.

The specifications were prepared on our Justowriters, automatic tape-operated typewriters which eliminate much retyping of standard specification items by re-use of the original tapes. The typed 8½x11-inch pages were stripped into columns, nine columns per drawing page. Seven drawing pages of specifications were equivalent to 200 sheets of 8½x11 typical specification sheets.

Further refinements to our system developed when we were consulted for a project in Mexico. For this we developed site plans where three different house plans, designed on a metric scale of 1:25 (1 centimeter equals 25 centimeters), were reduced to 1:100 and combined to form neighborhood blocks. These blocks were then reduced to 1:300, and four prints were combined into larger neighborhoods. These were further reduced to 1:1,000 (1 centimeter equals 10 meters) and 100 sheets were printed, each of which contained a neighborhood of approximately 200 houses. These sheets were assembled on the base map and reduced to 1:2,500, with every room easily discernible at the small scale on the final drawings.

The total siting encompassed 6,400 houses, but *only three were actually drawn*, and these at 1:25 scale. We completed 15 exhibits, which included house plans, neighborhood plans, reduced neighborhoods, site plans of the total development and comparison analysis between the client's original design and our houses demonstrating that our designed houses (although of different size and shape from the original and a completely changed street pattern)

(Mexico project shown on reverse side)

Project produced in month of September 1965

had the same number of living units as the original design, but the size of the living units had been increased. Several prints were colored to indicate the location of the different units, the delineation of open spaces and the roadways with an area computation. This entire effort required less than 80 man hours. Using the conventional design-drafting methods, the same effort would have required at least 800 man hours.

The results of this experience proved to me that any problem involving site planning could be handled in this manner. By approaching the planning effort from the detailed building plans, many hours of hesitation are eliminated in determining orientation, adjustment to grade and types of units because the use of exact house plans at small scale permits flexibility of placement during the design process, without the necessity of making the final drawings to determine the advantages of alternative schemes. In practice, each schematic stage, accomplished by the placing of these small plans, is covered with a sheet of yellow paper over the topographic plan and transferred with colored felt brushes. Thus we are able to determine roughly street patterns, traffic patterns, green space allocations, tentative utility routing and a reasonable impression of the overall density for each of the schemes thus developed.

After a number of schemes are prepared, we then evaluate the one which most nearly satisfies all of the criteria. Using this final schematic, we accurately affix the small-scale buildings or apartment units to an overlay sheet, making whatever minor adjustment are indicated when working at site planning scale. We trace the general arrangements and evaluate the different patterns and

Economics Equals Growth

The workshop, without question, is an impressive experience. Architects cautious and skeptic at first soon change to acceptance and then show all-out enthusiasm. Throughout the workshop experience, Mr. Abrams emphasizes the critical need for architects to use efficient methods to increase their productivity.

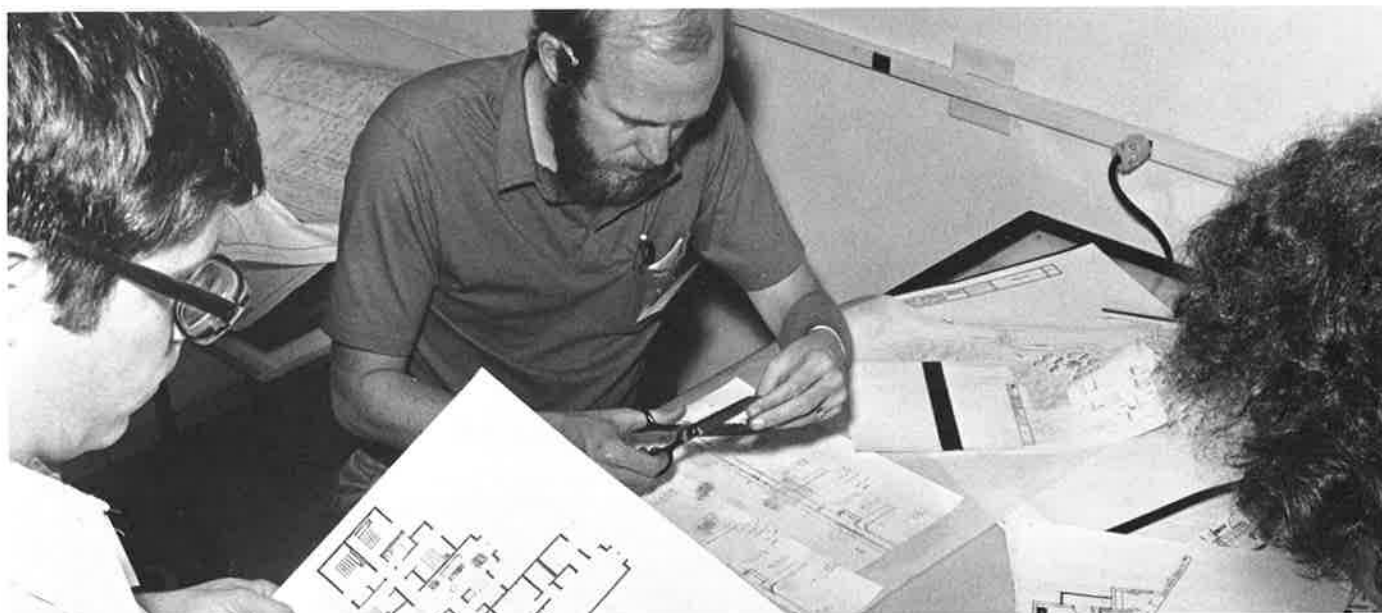
“Unless architects learn the economies of architecture, there will be package contractors—like those we’ve already experienced in the aerospace industry—who tend to believe the architectural part is simple and who will crank into their computers all of the possible parameters and have canned answers for ready resale, he declares.” “In many cases package contractors can afford to pay computer-oriented architectural graduates better than twice as much as an architect can, and they will never be called upon to do manually in a week what a computer can do in less than an hour.”

The day of the artistic craftsman, creating his architectural masterpiece at a leisurely pace for a generous fee, Mr. Abrams warns, is long gone. “Today’s architect must use 20th century work methods,” he says. “We feel the graphic techniques we’ve developed over the course of 20 years gives us the added capabilities we need to remain competitively strong in today’s market.”



12.

12. Reduced and reproduced key elements are then cut-out for preparation of paste-up which forms basis of finished drawing.



13.

13. Cut-out key elements are then pasted down. Drawing will be combined with other overlay drawings for finished plans. Base sheets and overlays then can be reproduced in quantity by offset duplicating or diazo printing.

ABDICK®

case history

Design Master™/ 695 Copier

Design Production Techniques, Inc.

Architects/Engineers

Workshop Teaches Graphic Techniques For Improved, Time-Saving Production

How many times does the wheel have to be re-invented and redrawn?

That blunt but basic question comes under intense scrutiny at Ned Abrams' Design Production Techniques Workshop (Deprotech)—a two-day learning marathon where architectural designers discover the cost economies, time savings and improved quality graphic arts techniques can bring to their project drawings.

Deprotech's workshop, sponsored by the American Institute of Architects' Continuing Education Department, takes place at Ned Abrams' own architectural offices in Sunnyvale, Ca. His firm, operating since 1948, specializes in architecture and site planning and the economics of both.

"We've found as much as 20 to 30 per cent of a typical drafting job to be repetitive," Mr. Abrams explains. "Obviously, the elements are not always identical—they vary in size or detail with upside down or reversed views. But from a graphic arts standpoint, they are the same—easily and quickly reduced, enlarged, photocopied and duplicated."

According to Mr. Abrams, plans which take weeks to draw by conventional drafting methods, can be done literally in hours and days by employing effective graphic techniques.

"We stress the efficiencies of graphic techniques as well as eliminating needless repetition of information that doesn't produce any new knowledge," Mr. Abrams notes. "Architectural plans are drawings which should clearly illustrate to contractors how something should be built. Plans are not intended to be artful exercises in drawing."

Opens New World

At Deprotech, architects are introduced to a new world of opaque drafting media, photocopying, enlarging/reducing equipment and offset duplicating.

Most importantly, architects learn first hand how to make the workshop's objectives work for them individually. Mr. Abrams describes those objectives as fourfold: 1) To increase efficiency in contract drawing while cutting operating costs, 2) To reduce tedious redundancies in contract drawing production, 3) To increase time which can profitably be spent on design with greater control over completion times, and 4) To reduce errors and omissions while adding both detail and readability.

Participants bring plans of jobs they are currently working on including schematics, preliminaries, construction and

DRAFTING & REPRO DIGEST

Primer series: drafting for microfilm

Learning by doing

Homing in fast:
affordable computer graphics

Clear stick-ons add value
to architectural drawings

THE MAGAZINE FOR MANAGEMENT IN DESIGN/DRAFTING, ARCHITECTURE AND REPROGRAPHIC SYSTEMS



cent with 83 per cent of the job completed using these graphic procedures. He also ran studies on two other projects and found his productivity increased by 111 per cent with 81 per cent job completion done and 278 per cent improvement with 75 per cent work completed on another job.

Besides increased productivity, greater flexibility can be achieved, Mr. Abrams quickly points out. Graphic techniques provide flexibility to reproduce key elements in different scales needed in other drawings as well as to position modules in a variety of configurations without having to redraw them.

Once key elements have been photocopied, they are cut out and ready to be aligned in various clusters to determine what the best options and combinations of options are, he continues. This approach permits architecture to evolve, giving designers the flexibility to look at many different approaches and solutions because they are not weighed down by a lot of drawings.

After key elements have been pasted down on these sheets, other disciplines such as general systems as well as dimensioning, notations and structural framing can be put together using overlays; then reproducing them in quantity by offset duplicating or by diazo printing. If more than 50 plans are needed, it is wise to offset duplicate because of the economies involved.

"Besides the time and cost savings gained from these techniques, they also permit revisions to base and overlay sheets to be made without having to manually redraw," Mr. Abrams explains. "Further, the quality of drawings is greatly improved. They are more readable, contain more detail and information so bidding contractors can more accurately account for costs instead of making contingency statements which can only add to a job's overall expense.

"Our objective is to get as much

critical information in our drawings as possible so contractors don't have to question intent. We want them to read our minds off our documents."

Economics equals growth

Throughout the workshop experience, Mr. Abrams emphasizes the critical need for architects to use efficient methods to increase their productivity.

"Unless architects learn the economies of architecture, there will be package contractors — like those we've already experienced in the aerospace industry — who tend to believe the architectural part is simple and who will crank into their computers all of the possible parameters and have canned an-

swers for ready resale, he declares." "In many cases package contractors can afford to pay computer-oriented architectural graduates better than twice as much as an architect can, and they will never be called upon to do manually in a week what a computer can do in less than an hour."

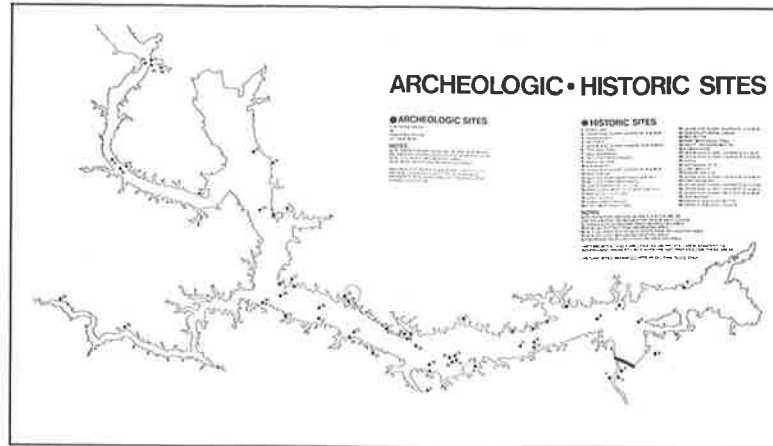
The day of the artistic craftsman, creating his architectural masterpiece at a leisurely pace for a generous fee, Mr. Abrams warns, is long gone. "Today's architect/engineer must use 20th century work methods," he says. "We feel the graphic techniques we've developed over the course of 20 years gives us the added capabilities we need to remain competitively strong in today's market." ■



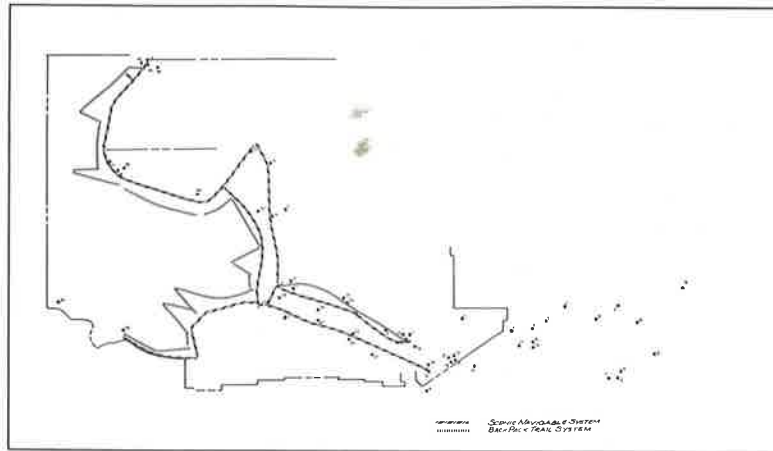
Reduced-scale modules are quantity-reproduced on a Royal Bond RBC 1 copier. The Royal can also produce reverse-reading and sticky-back transparencies for applying notes, details, etc. to a reproducible vellum or sepia Mylar, thus saving much drafting time.



To produce a sepia Mylar film, an opaque sheet (with elements from the Design Master camera and 695 copier) is put together with blank sepia Mylar film. It is exposed on the NuArc Flip Top 46 UP, creating a sepia Mylar film, which is then processed through a diazo machine.



Overlay of Trail and Navigable Systems



NED ABRAMS' WORK

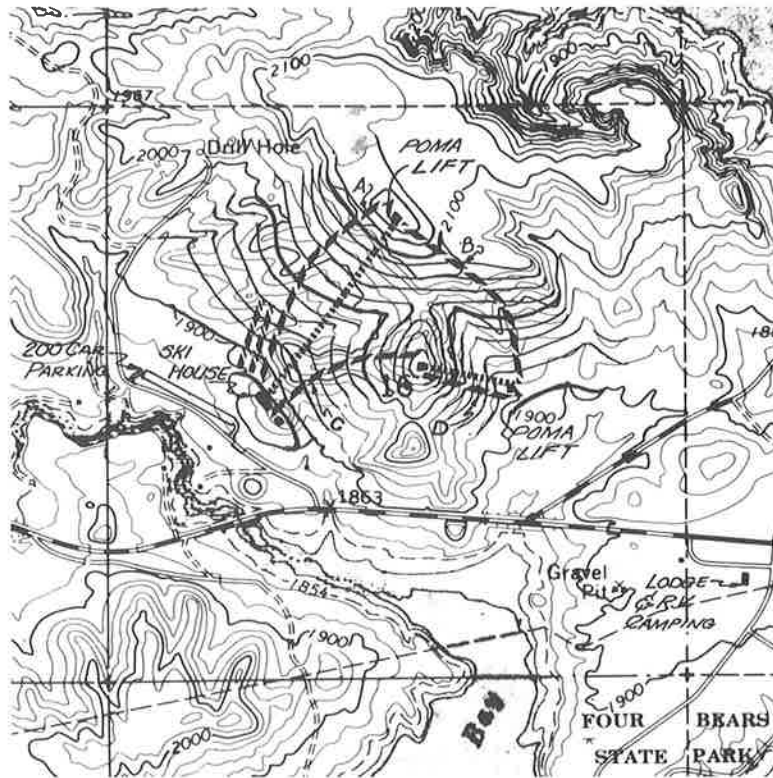
THE PAPER PLANE:







- ②a) sepia mylar in the vacuum frame to form the Ski Slope Planning Map. Additional copies were run on the office diazo printer.

- ②b) This same technique was used in laying out the Navigational Trail System Planning Map with equal success. First a 24x36 Corps of Engineers Historical Archeological Map was reduced to match a Corps of Engineers Vicinity Map. From this, an outline of Lake

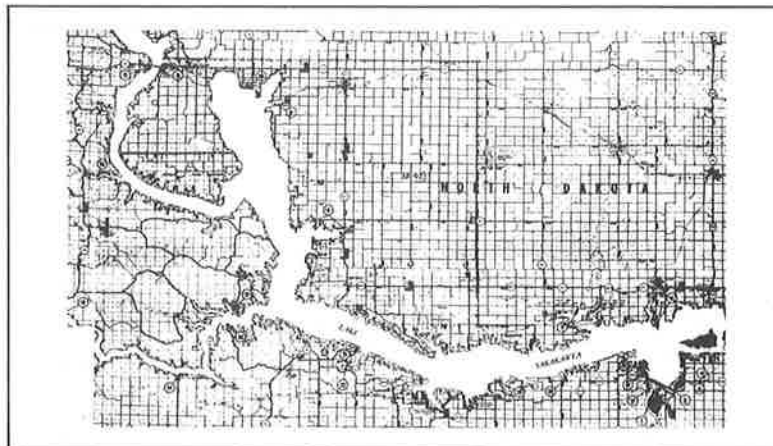


- ②a) Composite of Ski Slope Planning Map



SKI SLOPE
 A ~ 2100 @ 12% 
 B ~ 2100 @ 12% 
 C ~ 1300 @ 15% 
 D ~ 900 @ 22% 
SKI RUNS 
POMA LIFT 

- ②b) Base of Navigational Trail System Planning Map



INNOVATIONS IN WORKING DRAWINGS

April 13-14, 1972

Mail to: Architectural Programs
THE WISCONSIN CENTER
702 Langdon Street
Madison, Wisconsin 53706

INNOVATIONS IN WORKING DRAWINGS
April 13-14, 1972

Name _____

Title/Position _____

Company _____

Address _____

City & State _____ ZIP _____

Office Tel. No. _____

Social Security No. _____

Fee: \$80.00 Make checks payable to University Extension.
Enclose enrollment fee.

GENERAL INFORMATION

Enrollment. Register in advance by mail or phone. Early registrations are confirmed by mail. Be sure you have a confirmed enrollment. FEE covers cost of instruction, handout of course materials, noon lunches, one evening dinner, and break refreshments. Lodging is NOT included.

Meeting Place. Programs are held at THE WISCONSIN CENTER (unless noted otherwise), Madison campus, corner of Langdon and Lake streets. Check program schedule.

Lodging. Information on various hotels and motor hotels in the area and maps with campus details will be sent to registrants. Arrange advance reservations directly with the place of your choice.

Parking. Visitor parking on campus is extremely limited. University marked AREAS are restricted. A limited number of University parking permits at nominal fee may be available. Permit information will be sent to registrants. There is also daily-fee parking at the Murray Street lot, and metered public parking in the Lake Street Ramp (between State Street and University Avenue) one block from The Wisconsin Center.

Refund. Full refund of fee payment will be made if program is cancelled or if notice of cancellation by enrollee is received at least a day in advance of institute program.

A Certificate of Participation is awarded to each enrollee. No proceedings will be published.

Philip M. Bennett, Program Director
University Extension, The University of Wisconsin
Department of Engineering, 432 North Lake Street,
Madison, Wisconsin 53706

Telephone: (608) 262-2061 for program information
(608) 262-1122 for program enrollment

PURPOSE

The construction of our man-made environments is very much dependent upon the use of working drawings and specifications. It is through the designer's graphic message that the final construction becomes a reality. Unfortunately, the errors made in conveying this message are always preserved in the construction of a building. Therefore, it is dependent upon the designer to reduce graphic communication errors and improve on the techniques and methods used in the development of working drawings.

Past experience accumulated in architectural firms across the country will be reviewed to stimulate new thinking in graphic communication. A study of the progress and problems encountered in conveying construction information will enable us to improve upon the production of working drawings without losing the essentials of good communication. Individuals responsible for innovating new ideas will examine in depth the user requirements, management decisions, national and international drawing standards, and techniques available for graphic communication.

PARTICIPANTS

The program is structured for architects, engineers, contractors, draftsmen, educators, and others concerned with the preparation of working drawings.

SPEA

Ned H
Consu

Antho
Comp
Contr
Unive

Arnol
Nowa
Dayto

Rand
Archi

Stanle
Depar
Princi

Bill D
Putty
Dall

Herbe
Blue f

Ediso
Odell
Engin

UNIVERSITY OF WISCONSIN-EXTENSION
ENGINEERING INSTITUTE
MADISON, WISCONSIN

WILLIAM W. WUERGER, Director
Institutes and Short Courses
Department of Engineering & Applied Science

WORKING DRAWING PRODUCTION SYSTEMS

April 5-6, 1979

SPEAKERS

NED H. ABRAMS, AIA
President
Design Production Techniques, Inc.;
Architect and Owner
Ned H. Abrams Architect
95 First Street
Suite 200
Los Altos, CA 94022

PHILIP M. BENNETT
Program Director
Department of Engineering
UH-Extension
432 North Lake Street
Madison, WI 53706

DR. KAIMAN LEE
Director of Environmental Design
and Research Center
Newton, MA;
Faculty Member, Boston Architectural
Center;
Real Estate Broker/Investor/Developer
142 Lowell Avenue
Newton, MA 02160

ROBERT E. OLDEN, AIA, CSI
Architect
Reynolds, Smith and Hills
Architects Engineers Planners
4019 Blvd. Center Dr.
P.O. Box 4850
Jacksonville, FL 32201

GERALD S. PFEFFER, AIA
Vice President and Manager of
Information Processing
Caudill Rowlett Scott
Architects Planners Engineers
1111 West Loop South
Houston, TX 77027

FRED A. STITT
Architect and Editor/Publisher
of Guidelines Publications -
Publications on Design Firms'
Management
P.O. Box 456
Orinda, CA 94563

THOMAS A. ZIMMERMAN, AIA
Thomas A. Zimmerman Architect
1520 East Pierson Street
Phoenix, AZ 85014

List of Production Consultants

Listed below are those independent production consultants who have experience in serving architects, consulting engineers and planners. For further information about the services they offer, contact each directly.

NED ABRAMS - offers training and consultation in design analysis to accelerate the production process in large and small architectural, engineering, and planning firms. Contact Ned Abrams, P.O. Box 417, Los Altos, CA 94022 (415) 941-9400.

COMPUTER APPLICATION ENGINEERS, INC. - firm specializes in selection, development and installation of software for marketing, management and engineering applications. Contact Robert A. Radcliffe, P.E., P.O. Box 408, Exton, PA 19341 (215) 692-6654.

DESIGN & CONSTRUCTION PROCEDURES - consulting and production technology: design and working drawings; drafting systems; overlay drafting; computer application to architectural practice; analysis of technical operations -- tailored to firm size, equipment and skills. Contact Rolland Thompson, FAIA, 127 East 94th St., New York, NY 10028 (212) 289-6494.

ENGINEERING COMPUTER APPLICATIONS, INC. - A/E computer system justification, selection and implementation for small to large computers. Contact Kenton Johnson, P.E., ECA Inc., 5 Denver Tech Center, P.O. Box 3109, Englewood, CO 80111 (303) 771-5307.

WILLIAM FANNING - computer selection, justification and implementation including A/E/P software conversion. Contact William Fanning, 271 Cross Gate Drive, Marietta, GA 30067 (404) 971-7586.

GUIDELINES - provides one day in-house training on the basic techniques and management of systems draftings applications. Contact Fred Stitt, Architect, Box 456, Orinda, CA 94563 (415) 254-0639.

IN-HOUSE PHOTODRAFTING & DESIGN - consultation and installation of professional equipment, staff training, and recommendation of supplies and their application for users of overlay, photo and applique drafting. Contact Hank Singer, I.H.P.D., 197 Washington Ave., Carlstadt, NJ 07072 (201) 438-2500.

ROBERT J. KRAWCZYK - specializes in computer software development for architectural, engineering and interior design firms. Contact Robert Krawczyk, 5219 North Lockwood, Chicago, IL 60630 (312) 283-0313.

PRACTICE MANAGEMENT ASSOCIATES, LTD. - complete five-step computer selection and consultation including feasibility analysis, request for proposal preparation, vendor evaluation, systems documentation and implementation exclusively for design firms. Contact Richard Vendola, Jr., 45 Van Brunt Avenue, Dedham, MA 02026 (617) 326-4103.

PRODUCTION MANAGEMENT CONSULTANTS - five principal consultants provide in-house seminars; staff training and development; reprographics consulting; information processing consulting; and computer graphics consulting. Contact George S. Borkovich, PMC, 3400 Edge Lane, Thorndale, PA 19372 (215) 384-7262.

UNIGRAFS - provides in-house manuals, consultation and seminars for architects, engineers and reproduction houses on standardization; overlay, photo and applique drafting; and multi-color offset printing. Contact Ed Powers, c/o Gresham and Smith, 2222 State Street, Nashville, TN 37203 (615) 327-1071.

WORKING DRAWING PRODUCT

A cooperative venture in Continuing Education between the University of Wisconsin-Extension, the Texas Society of Architects, and the University of Texas at Austin.

August 17-18, 1979 at Austin, Texas

PURPOSE

New techniques in graphic communication will help architectural and engineering firms convey building construction information to the contractor. A survey of frequent construction errors and misunderstandings will show that most problems result from poor communication and unclear details. It is evident that many construction problems, legal suits, and increased project costs can be prevented by effectively developing and organizing all parts of the contract documents.

Improved methods and procedures used in developing architectural and engineering drawings will be studied to stimulate new thinking in graphic communication. The progress and problems encountered in conveying construction information will provide the basis for self-evaluation and motivation toward improved production of construction details and working drawings. Consultants and specialists will examine (1) planning for working drawings, (2) the implementation of new drawing production systems, (3) photographic techniques, (4) time and cost saving production techniques, and (5) the use of the computer in developing working drawings.

PARTICIPANTS

The program is designed for architects, engineers, contractors, draftsmen, educators, and others concerned with the preparation of construction details and working drawings.

SPEAKERS

Ned H. Abrams, AIA, President, Design Production Techniques Inc.; Architect and Owner, Ned H. Abrams Architect, Los Altos, California

Dr. Kaiman Lee, Director of Environmental Design and Research Center, Newton, Massachusetts; Faculty Member, Boston Architectural Center; Real Estate Broker/Investor/Developer; Newton, Massachusetts

Robert E. Olden, AIA, CSI, Architect, Reynolds, Smith and Hills, Architects Engineers Planners, Jacksonville, Florida

Gerald S. Pfeffer, AIA, Vice President and Manager of Information Processing, Caudill Rowlett Scott, Architects Planners Engineers, Houston, Texas

Fred A. Stitt, Architect and Editor/Publisher of Guidelines Publications — Publications on Design Firms' Management, Orinda, California

Thomas A. Zimmerman, AIA, Thomas A. Zimmerman Architect, Phoenix, Arizona



**Professional Development
Programs In
WORKING DRAWING PRODUCTION**

1 HOW TO ORGANIZE AND IMPLEMENT THE SYSTEMS APPROACH TO WORKING DRAWING PRODUCTION

A hands-on workshop designed to develop techniques and skills in using advanced (1) **SYSTEMS DRAFTING-OVERLAY, COMPOSITE AND PHOTOGRAPHIC**, (2) **DETAIL BANKING SYSTEMS AND (3) REPROGRAPHIC MATERIALS AND EQUIPMENT**. Structured to precede the topics presented in Program 2.

APRIL 11-13, 1983

2 DEVELOPING NEW TECHNIQUES IN WORKING DRAWING PRODUCTION

Our 13th annual institute that highlights new topics to update production personnel in (1) **PROCEDURES**, (2) **TECHNIQUES**, (3) **APPLICATIONS**, (4) **EQUIPMENT AND (5) COST EFFECTIVENESS** for manual, semi-automated and computer-aided systems. The latest applications of systems drafting and computer-aided graphics will be studied to improve production efficiency.

APRIL 14-15, 1983

Department of Engineering and Applied Science
University of Wisconsin-Extension

SPEAKERS

NED H. ABRAMS, AIA, President, Design Production Techniques, Inc.; Architect and Owner, Ned H. Abrams, Architect; 34 years experience in systems drafting and working drawing production innovation; Los Altos, California.

AVI ARIEL, Senior Design Engineer in charge of developing standards, specifications and systems for civil and architectural engineering, Lummus Company — A subsidiary of Combustion Engineering, a design/construct company that engineers and builds process plants; Many years of experience in engineering design, construction and developing "user applications" of computers and other systems; Bloomfield, New Jersey.

FRANK P. ETRO, JR., Job Captain and Producer of Production Systems, Hellmuth, Obata & Kassabaum, Inc., Architect Engineers Planners, New York, New York.

JAMES C. GAITHER, Territory Manager, Dupont Company; 15 years of experience with overlay, photographic and computer-aided production systems; Responsible for developing new techniques with CAD systems as they relate to the photographic process; Stow, Ohio.

DAVID GEORGE-NICHOLS, AIA, Senior Applications Engineer, Sigma Design Inc.; 10 years experience in architectural practice and development of architectural software; Englewood, Colorado.

REAGAN W. GEORGE, FAIA, Senior Vice President and Director of Operations for HOK Dallas, Hellmuth, Obata & Kassabaum, Inc., Architects Engineers Planners; Representative of the HOK Multi-Office Production Board; 20 years experience in project management for a variety of project types; Dallas, Texas.

DALE H. KOPP, Chief Draftsman and Manager of Graphic Arts, Huth Engineers, Inc., Consulting Engineers, Architects, Landscape Architectural and Land Surveying; Lancaster, Pennsylvania.

WAYNE WATSON, RSW, CCS, Director of Special Projects, Vinto Engineering, Ltd., Mechanical Consulting Engineers; 26 years

experien
sulting, c
tion and
ment; Ed
DA.

**PRO
THUR
APRIL**

**8:00 A.M.
REGISTR
The Wisc
702 Lang
Madison,**

**8:30 W.E.
Philip M.
Program**

**8:45
Maximiz
Overlay
Techniqu
Repro St
to Produc**

- Effectiv
- Product
- Process
- Project
- Time a
- Coordin
- With the
- Repres
- First H
- Quest
- Effect
- Techn

- In-hous
- Operate
- Firm
- Applic
- Bureau
- Cost V

- Setting
- Reimb
- Establ
- Reduc
- Overh

SPEAKER

10:00 C

**10:30
Maximiz
Overlay
Techniqu
Repro Sta
to Produc
Continued**

- Method
- Service
- Select
- Impact
- Service
- Produc

PROGRAM SPONSOR

BENNETT, PHILIP M.
PROGRAM DIRECTORDEV. NEW TECH. IN WORKING DRAWING PRD
04/14/83 - 04/15/83

CONFERENCE LEADERS & PLANNING COMMITTEE

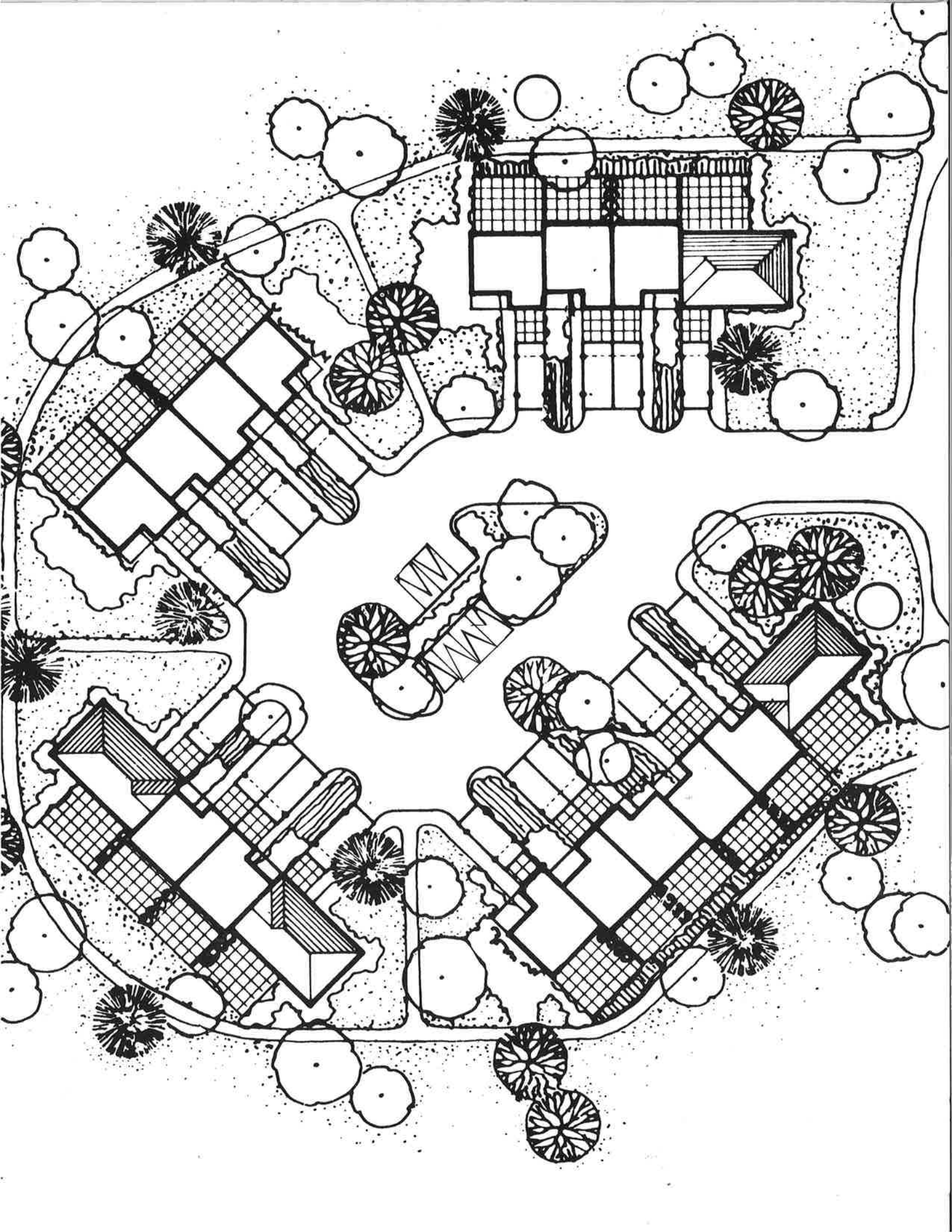
ABRAMS, NED H. PRESIDENT DESIGN PRODUCTION TECHNIQUES, INC., SUITE 200 95 FIRST STREET LOS ALTOS, CA	94022	ARIEL, AVI SR. DESIGN ENGINEER LUMMUS CO. 1515 BROAD STREET BLOOMFIELD, NJ	07003
BENNETT, PHILIP M. PROGRAM DIRECTOR UNIV. OF WI-EXTENSION DEPT. OF ENGINEERING 432 N. LAKE ST. MADISON, WI 608-262-1299	53706	ETRO, FRANK JR. JOB CAP. & MGR/PRD. SYS HELLMUTH, OBATA & KASSABAUM, INC. 1270 AVENUE OF AMERICAS NEW YORK, NY	10020
GAITHER, JAMES C. TERRITORY MANAGER DU PONT CO. 4454 FOREST HILL DR. STOW, OH	44224	GEORGE-NICHOLS, DAVID SR. APPLICS. ENGINEER SIGMA DESIGN INC. 7306 SOUTH ALTON WAY ENGLEWOOD, CO	80112
GEORGE, REAGAN W. SR. V.P. & DIR/OPERS. HELLMUTH, OBATA & KASSABAUM INC. 2501 CEDAR SPRINGS DALLAS, TX	75201	KOPP, DALE H. MGR/GRAPHIC ARTS HUTH ENGINEERS INC. P.O. BOX 3012 1650 MANHEIM PIKE LANCASTER, PA	17604
WATSON, WAYNE DIR/SPECIAL PROJECTS VINTO ENGINEERING 3708 118TH STREET EDMONTON, ALBERTA CANADA T6J 1W7			

PROGRAM SPONSOR

BENNETT, PHILIP M.
PROGRAM DIRECTORDEV. NEW TECH. IN WORKING DRAWING PRD
04/14/83 - 04/15/83

CONFERENCE LEADERS & PLANNING COMMITTEE

ABRAMS, NED H. PRESIDENT DESIGN PRODUCTION TECHNIQUES, INC., SUITE 200 95 FIRST STREET LOS ALTOS, CA	94022	ARIEL, AVI SR. DESIGN ENGINEER LUMMUS CO. 1515 BROAD STREET BLOOMFIELD, NJ	07003
BENNETT, PHILIP M. PROGRAM DIRECTOR UNIV. OF WI-EXTENSION DEPT. OF ENGINEERING 432 N. LAKE ST. MADISON, WI 608-262-1299	53706	ETRO, FRANK JR. JOB CAP. & MGR/PRD. SYS HELLMUTH, OBATA & KASSABAUM, INC. 1270 AVENUE OF AMERICAS NEW YORK, NY	10020
GAITHER, JAMES C. TERRITORY MANAGER DU PONT CO. 4454 FOREST HILL DR. STOW, OH	44224	GEORGE-NICHOLS, DAVID SR. APPLICS. ENGINEER SIGMA DESIGN INC. 7306 SOUTH ALTON WAY ENGLEWOOD, CO	80112
GEORGE, REAGAN W. SR. V.P. & DIR/OPERS. HELLMUTH, OBATA & KASSABAUM INC. 2501 CEDAR SPRINGS DALLAS, TX	75201	KOPP, DALE H. MGR/GRAPHIC ARTS HUTH ENGINEERS INC. P.O. BOX 3012 1650 MANHEIM PIKE LANCASTER, PA	17604
WATSON, WAYNE DIR/SPECIAL PROJECTS VINTO ENGINEERING 3708 118TH STREET EDMONTON, ALBERTA CANADA T6J 1W7			



Reprint of a chapter from

**CURRENT
TECHNIQUES IN
ARCHITECTURAL
PRACTICE**

COURTESY OF
THE AMERICAN INSTITUTE
OF ARCHITECTS
AND THE AUTHOR

ROBERT ALLAN CLASS, AIA
ROBERT E. KOEHLER, HON. AIA
EDITORS

© 1976, The American
Institute of Architects and
Architectural Record.
Reprinted by Permission.

Drawings ideally present those aspects of a project most easily explained graphically, and specifications those aspects most easily described by language. While they complement each other, their respective functions should not be interchanged or duplicated under normal circumstances.

Drawings, then, show what is involved, where it is located, and what the physical dimensions are. Specifications state what the materials are, how they are to function and from where they can be obtained.

The number of options available to architects for the graphic delineation of information is constantly growing, and at a rapid pace. Having an understanding of these options will allow the practitioner to use all, or parts, of any method described.

The customary hand process is still very much in evidence during the early design stages. Use of some of the described options could change this. With the application of more advanced techniques during the documentation phase, the task should become less laborious and more mechanical and economical. Trends affecting decisions to move toward systematization and greater efficiency are:

—The approach to interdisciplinary matters, such as environmental and behavioral aspects previously not a part of architecture, which increase the complexity of design problems and demand that the architect have more time to use primary talents for designing, planning and coordinating the total design effort.

—The economic necessity to find a means of offsetting costs of services, which are rising more rapidly than the rate of compensation within outmoded fee schedule recommendations.

—The need to compete both with sophisticated independent disciplines seeking to supplant the architect and with practitioners who have already embraced more sophisticated methods.

—The necessity to serve clients who have come to expect competence in architectural services which requires modern methods and techniques capable of conserving the client's time and money.

—The requirement to produce better, more detailed construction documents for contractors and subcontractors, requiring greater numbers of sets of these documents for better bids.

—The common-sense judgment to stay abreast of the latest developments in any profession and make a qualitative choice of acceptance or rejection based on reasonable understanding of the available options.

CONVENTIONAL DRAWING MEDIUMS

Fundamentally, most architects rely on some means of translucent material to prepare the design, usually a thin sketch paper, either white or canary. When defined, the design is committed to a final drawing surface, one of several mediums generally used on one side:

—Tracing paper or vellum. These basic drawing materials are used extensively.

—Tracing linen or cloth, used by some offices, particularly for official work, with either ink or pencil. For many years, this was the only material approved for permanent record drawings required by public clients.

—Drafting film (usually acetate or Mylar), generally replacing tracing linen. This has great dimensional stability and unsurpassed transparency over any other present drawing material.

Drawings are still made with pencil or pen, but the ruling pen of old has been generally replaced by reservoir pens with nibs of fixed dimension to produce uniform line character. Pencils vary in hardness to the degree of precision desired. There are many other drawing aids, such as templates, used with either pencil or pen, and wax-based transparent overlays

to transfer preprinted information of lettering, symbols and architectural elements. Many offices use special stamps for landscaping effects, but the design so done is permanent and cannot be removed easily.

ORGANIZATION AND STANDARDS

The architect must decide on the size and shape of the drawing medium. The final document size may determine this, but it must be resolved in advance of doing any work if the end result is to be uniform. The architect may elect to use a stock precut size (expressed here in inches), such as 18×24, 24×36 or 30×42, or may prefer those sizes compatible with commercial printing: multiples of the familiar 8½×11(A) such as 11×17(B), 17×22(C), 22×34(D) or 34×44(E).

Along with selection of sheet size, a manner must be determined giving each sheet a means of individual recognition. The numbering system can be strictly numerical, or can be a combination of numbers and letters, with the latter used for the discipline such as "E" for electrical, "S" for structural, etc. In this case, each subdivision under a separate letter would be numbered consecutively within the discipline, and a list or index is required to tabulate all the drawings in a set of documents, as described later on.

Drawings can be subdivided into multiples of 8½×11 (for that group of sizes, for example) with partial information provided in smaller format, and these sheets can be assembled to make a composite drawing sheet. Modular coordination, based on a 4-inch or 100mm module prepared on preprinted, gridded drawing surfaces, has been used by architects, as have systems using a grid of arbitrary size to identify cross-referencing from one drawing to another, much like a road map system of letters in one direction and numbers in another.

niques are especially well illustrated and documented in manufacturers' literature and trade publications.) The February 1972 *Architectural Record* article titled "Photo-Drafting: Time-Saving Aid to Quality" succinctly presents 16 steps in organizing and planning the process as used by Gruzen & Partners.

Three articles published in the *AIA Journal* are among the photo-drafting references. One by the author, "A Design System That Produces Contract Drawings," appearing in March 1970 utilizes techniques familiar to all commercial reproduction establishments. Illustrations of later extensions of these techniques accompany this text. Another by Donald C. Jarvis, FAIA, in the March 1974 issue titled "Integrations: An Experiment in Production" spells out the working of the system and the reasoning behind its adoption, based on an available publication which carries a similar name. He says in the original document, "But a truly efficient system should do more than recover wasted hours . . . it should assist us in the creation of architecture. By its nature it should help us produce the buildings we conceive—and produce them on time and in the money." The search for a better direction led to subdivision of documentation by Jarvis Putty Jarvis, Inc., into these 11 categories:

- Chapter 1. Site Improvements
- Chapter 2. Demolition
- Chapter 3. Structural
- Chapter 4. Envelope
- Chapter 5. Space Dividers
- Chapter 6. Ceilings
- Chapter 7. Fixtures and Fittings
- Chapter 8. Conveying Systems
- Chapter 9. Air Conditioning
- Chapter 10. Plumbing
- Chapter 11. Electrical

Segregating the work in this fashion allows, among other things, the development of concurrent activities without the necessity of awaiting the completion of other parts. The firm utilizes overlays for

better design effort as well as automatic capability of multicolor printing of the final construction documents. The drawings are identified with two sets of numbers, both large, in blocks, one over the other. The uppermost is the chapter number with the title of the chapter. Below this is the drawing number of the consecutively numbered complete set of drawings.

Jerry Quebe, AIA, of Hansen Lind Meyer, clearly outlines the characteristics and tools for registration drafting in "A Comprehensive Approach to Improving the Quality of Contract Documents" in the February 1975 issue. This firm organizes its documents into an integrated format in the following 12 categories:

- Section 1. General Information
- Section 2. Site Development
- Section 3. Structural
- Section 4. Building Enclosure
- Section 5. Building Division
- Section 6. Ceiling Construction
- Section 7. Fixtures and Furnishings
- Section 8. Plumbing
- Section 9. Piping
- Section 10. HVAC
- Section 11. Electrical Power
- Section 12. Communications

Additional subjects may be included in sections identified by further numbers in the series.

All sheets of each section are numbered with the number of the section as a digit, and each sheet as a decimal, e.g., 4.23 is the 23rd sheet in Section 4. There is no attempt to number the sheets consecutively throughout the set, and the complete drawing list is in the Index to Drawings in Section 1.

While a full discussion of all of the possible systems is not intended here, two offices—one very large and one medium size—use a tool known as an Itek Positive Printer to produce many of their contract documents. This piece of equipment, costing in the neighborhood of \$20,000 if purchased outright, and leasing for about

\$20 per day, has the capability of producing black copies on white background from original copy, or in the words of the reproduction people, positive to positive. The machine comes in two sizes, and the larger (which is what these offices are using) accommodates drawings up to 36×48 on the copy board. The size of the finished copy is limited to 18×24. There is no original tracing of any of the sheets, and when a large drawing is needed, the printed small sheet is sent out, a film negative of 105mm size is made, then a film positive at 36×48 size, and from this Ozalid prints can be made.

The Itek Positive Printer has mechanisms for producing halftones. Renderings, pencil drawings, etc., can be reproduced with the line quality and gradation intact, as well as making halftone positives of photographs for brochures and published material. As drawings are prepared, an 18×24 positive print is made, and if additional information, such as numbering, becomes necessary, it is either added to the print or a new portion is added where applicable. The positive print is sent to a commercial printer who makes a paper plate and prints the copies, usually 100 to 300 of each sheet.

The basic philosophy of Stone, Maccacini and Patterson (SMP) in producing contract drawings is, simply put, to convey the design requirements concisely in the most economical way, both in the amount of drafting and in labor cost. To accomplish this end, the firm incorporates two techniques: systems and photo-paste-up drafting.

Whenever possible, SMP sets up systems in documenting the design requirements. The majority of the firm's current systems are based on simple standard masters for all projects such as door, modular casework and finish hardware schedules. All masters are used completely for every project with only small additions for specific requirements. A certain code from the standard master

much less critical than for a drawing. When so commanded, the display will show the corrected format and will also permit the movement of previously displayed material in different configuration, arrangement, sizes and shapes. At the same time, it will keep track of all sorts of other input data such as area, perimeter, scanning for minimum sizes, orientation and estimating for materials. To date, however, it is expensive and can generally only be used conveniently by the larger offices which can support a programmer as a part of their work force. There are a few program packages available on the market that can be easily used by practitioners who do not have prior computer experience.

If the visual qualities of a project must be displayed in many aspects to the client or approving body, the computer is capable of producing any number of perspectives from a plan and elevation. It can draw eye-level, worm's-eye, bird's-eye, close-up or distant perspectives from every conceivable location in a full half sphere of space around the building. It can eliminate hidden lines or can even draw scenes from inside the structure looking outward, revealing elements of the design as seen from the interior. Very few of these are full drawings, most being well-defined armatures for the delineator, but it is possible to have a full perspective produced, as is seen in the example by Richardson Associates (Exhibit 18-9B).

PRINTING TECHNIQUES

The most common approaches to printing are described here, although progress is being made in such developments as four-color process printing.

DIAZO AND PHOTOCOPY PROCESSES. In conjunction with both conventional and photographic techniques, selection must be made of the medium by which the information will be transmitted

to the user. For conventionally drawn documents, where no intermediate level of information is required, the choices are limited, and the most generally used process is the diazo, or ammonia-developed, print. This can be produced in black, blue or even a deep maroon paper. These copies are almost invariably made at the same size as the drawings, and the costs are computed by the square foot.

It is possible, however, to have the original drawing reduced to a smaller size, usually half size, by a xerographic process by using a machine such as the Xerox 1860. This will make both opaque and transparent copies at smaller size. The transparency (either a paper or polyester base material) can be used to produce half-size diazo prints. While the initial Xerox copy is more expensive per drawing, once it has been reduced, subsequent copies made by diazo will be considerably less costly. As they are but one-quarter of the size of the original, the per square foot costs are proportionately less. The reproduction quality of later machines has improved over that of the original models, but care must be taken in storage of the reduced transparencies: There is a possibility of image transference from the face of one sheet to the back of another stored above it in a drawer. The photocopy process is indeed the first step toward photographic reproduction when the machine used is a type of camera with a lens system but with an electrostatic negative carrier and transference process.

Depending on the size of the data to be transmitted, office copiers are highly useful for the preparation of information for drawings as well as their distribution to the ultimate user. The author has used the office copier extensively in the preparation of final architectural documents to reduce and eliminate much of what would be a full photographic effort. It is important to determine in advance what information will be required and then to use

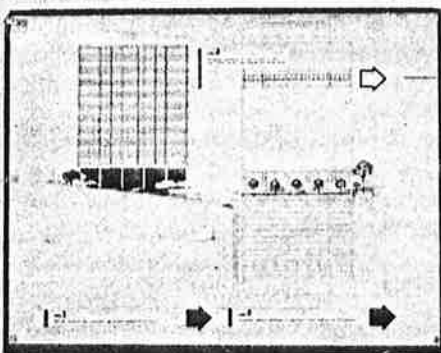
the most effective or economical means of producing this information in final form.

OFFSET PRINTING. This is most often used for the reproduction of sets of bidding documents, the majority of which are made in the range of 17×22. Some prints are produced up to 28 inches in length, but this requires a larger printing press which is not always available. Most printers have 17×22 presses and are quite competitive. If a set of documents has been prepared with reasonably large lettering, it can be reduced to one-half size quite easily for a substantial reduction in printing costs. A much larger quantity of these reduced size sets can be produced for the same price as the old-time "20 sets" by standard diazo process. Since the Standard Form of Agreement Between Owner and Architect, AIA Document B141, calls for the former to pay for reproduction, it is to the owner's advantage to secure sufficient bidding documents so that each subcontractor has access to the entire set for bidding purposes. This tends to reduce contingency factors in subcontractors' bids.

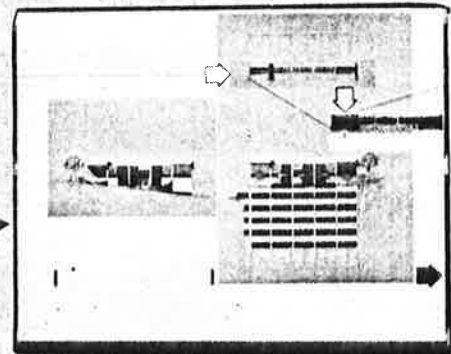
Offset printing also has uses in the production of the drawings before final printing of bidding sets. If there is a predetermined desire to use either half-sized photocopy or offset printing of the final documents, many standard details can be prepared by offset printing on 8½×11 sheets which are affixed to the base drawing in lieu of redrawing the same information over and over.

One word of warning at this point: No set of drawings should ever be marked or stamped "This is a reduced set of plans." Every drawing should be capable of being scaled at the exact scale indicated. If it is contemplated that the drawings be produced on reduced-size sheets, the scale stated on the drawings should be that at which they are shown. If there are two sizes of drawings, then each size should be shown with the proper scale in-

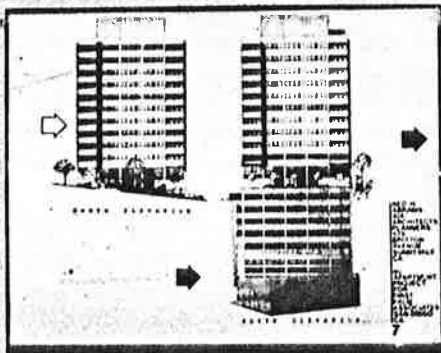
EXHIBIT 18-1. NED H. ABRAMS—ARCHITECT: PRESENTATION DRAWINGS (Demonstration of use of photographic equipment to create rendered tones automatically, without necessity of a delineator creating such tones)



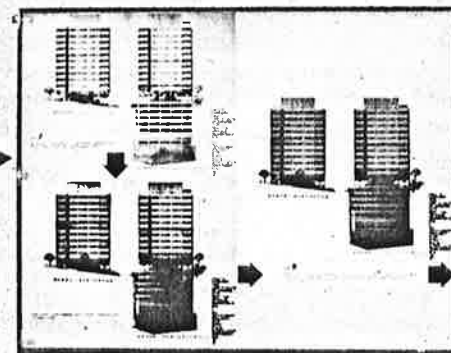
18-1A. a) Rough sketch of front and rear elevations; b) tracing paper strip elevation of one floor, upper right.



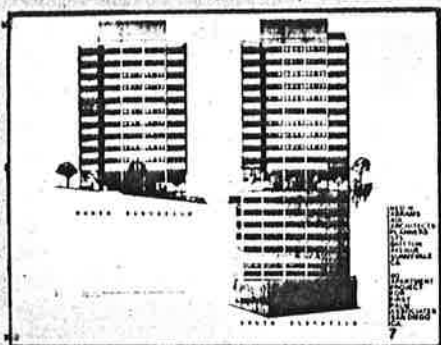
18-1B. a) Ozalid print strip elevation plus colored Zip-a-Tone; b) positive print of Ozalid of strip elevations, center right; c) Zip-a-Tone over openings on Ozalid print of elevations.



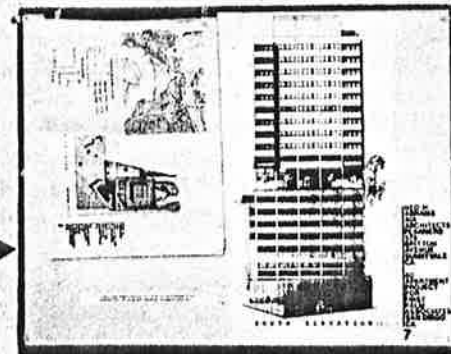
18-1C. Assembled elevation of positive print strips and positive print of front and rear elevations from 18-1B. All reproduction to this point is at same size and same scale.



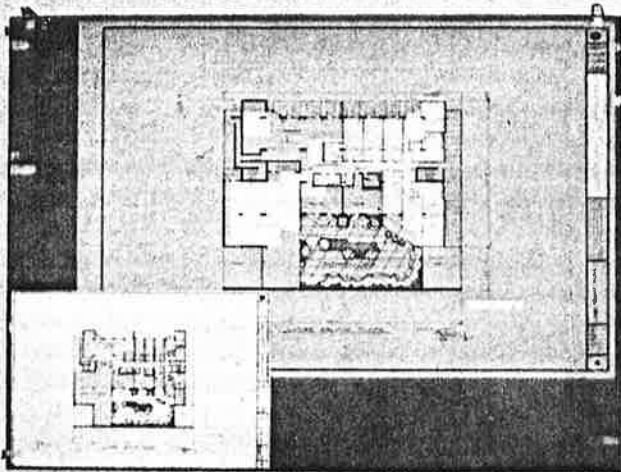
18-1D. a) Under- and overexposed prints, left, of drawing of sheet in 18-1C, which can be adjusted for tonal range desired; b) properly exposed positive print of same sheet cut out and pasted on plain background, right.



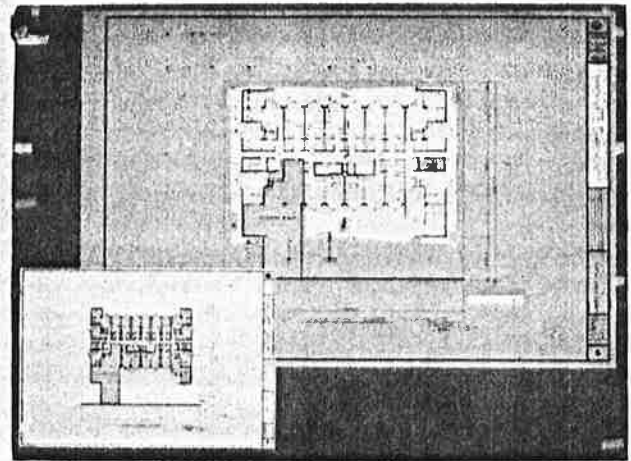
18-1E. Reenlargement of completed drawing in 18-1D(b) back to original size, producing drawing essentially the same as 18-1C from finished assembly.



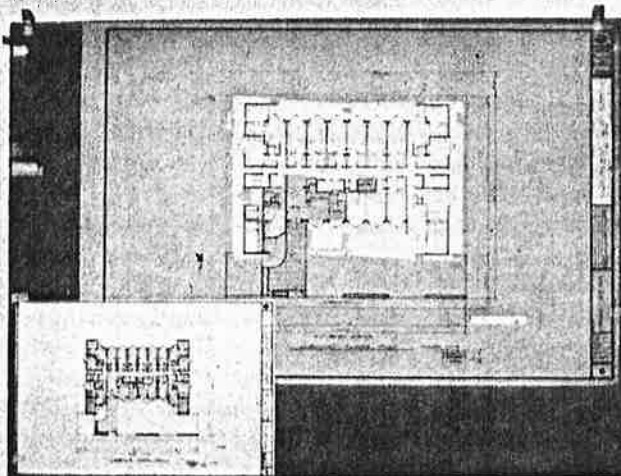
18-1F. Final presentation cover with site plan and location plan, together with portion of final elevation used for final submission.



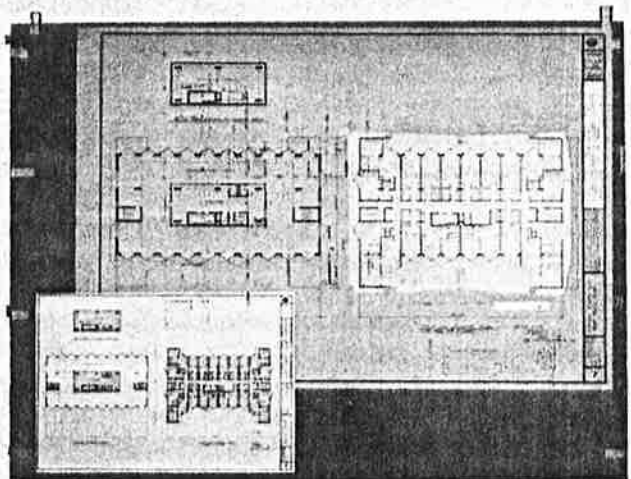
18-2E. a) Lowest level floor plan, with office copier reproduction of small Mylar in 18-2B(c), modified and cut out for appropriate location; **b)** reduced print of final drawing, lower left.



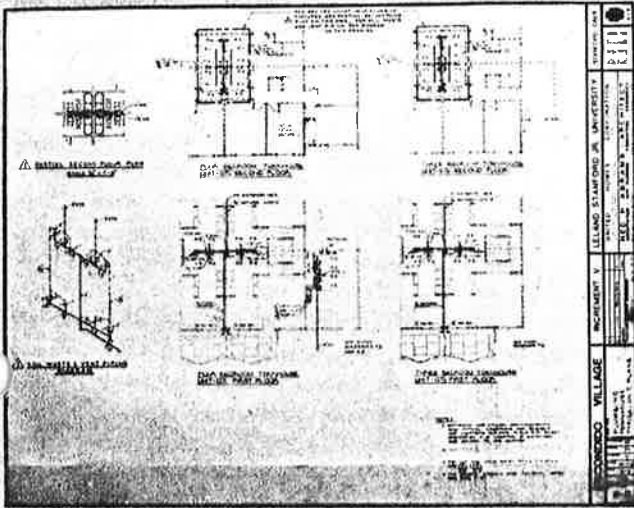
18-2F. a) Next higher level floor showing reuse of both right and reverse reading of office copier prints of reduced Mylar in 18-2B(c); **b)** cutouts for special conditions, darker tone; **c)** reduced print of final drawing, lower left.



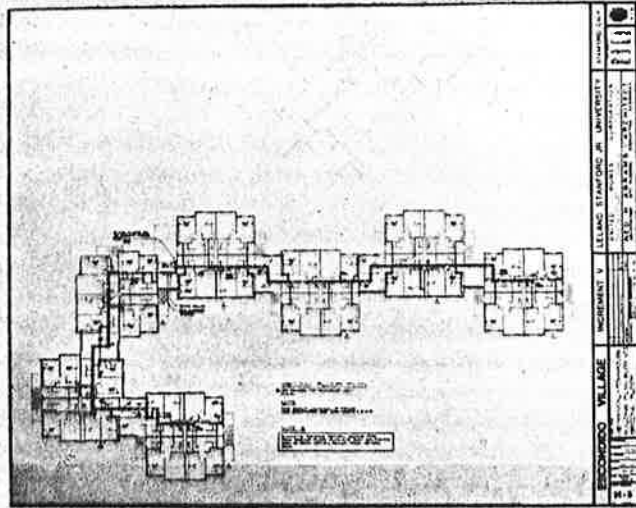
18-2G. a) Next higher level floor showing reuse of both right and reverse reading of reduced Mylar in 18-2B(c); **b)** cutouts for special conditions, darker tone; **c)** reduced print of final drawing, lower left.



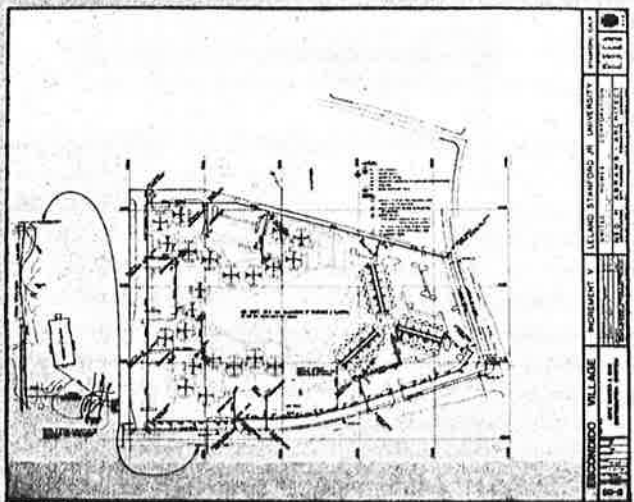
18-2H. a) Typical floor showing reuse of reduced Mylar used in 18-2B(c), with right and reverse reading office copier prints to delineate typical floor; **b)** roof and penthouse plans drawn separately on sheet of vellum, left; **c)** reduced print of final drawing, lower left.



18-3E. 1/4" scale mechanical engineering overlay.



18-3F. 1/6" scale mechanical overlay.



18-3G. 1/40" scale mechanical overlay.

18-3H. Enlargement of portion of site plan at 1/20" scale for landscaping drawing. Building in same orientation as in 18-3G.

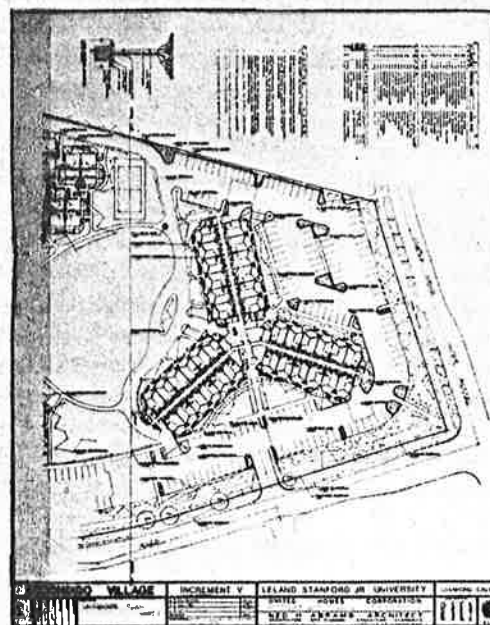


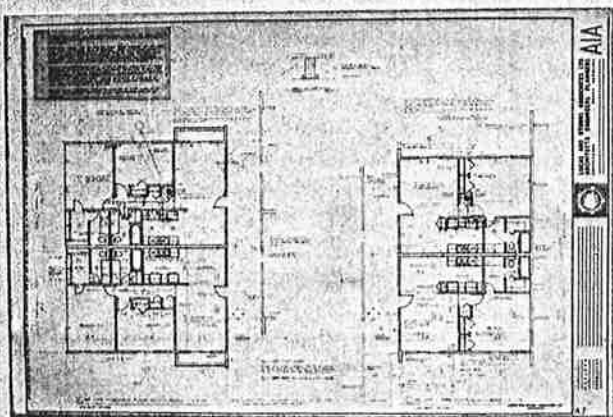
EXHIBIT 18-5. STONE, MARRACCINI AND PATTERSON: LEGENDS AND SCHEDULES

ARCHITECTURAL ABBREVIATIONS	ARCHITECTURAL LEGEND & SYMBOLS	DRAWING INDEX
<p>Architectural abbreviations list including: Architect, Engineer, Contractor, etc.</p>	<p>Architectural legend and symbols including: Walls, Doors, Windows, etc.</p>	<p>Drawing index table listing drawing numbers and titles.</p>
	<p>AREA</p>	<p>GENERAL NOTES</p>
	<p>LOCATION MAP</p>	

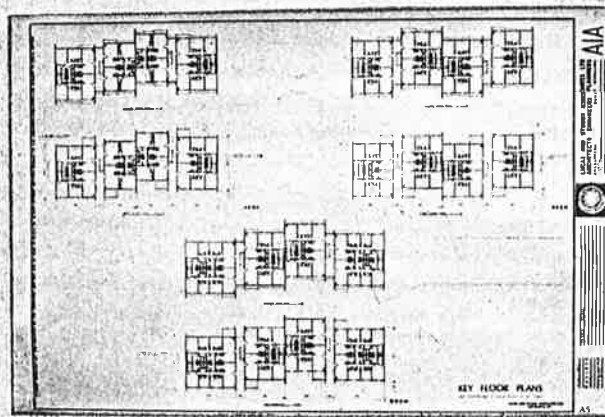
18-5A. Abbreviations legend, index and general notes, with applicable codes and regulations under general notes.

DOOR TYPES		DOOR MARK SCHEDULE
<p>Architectural details of various door types (e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10).</p>	<p>Architectural details of various door types (e.g., 11, 12, 13, 14, 15, 16, 17, 18, 19, 20).</p>	<p>Door mark schedule table with columns for door type, fire rating, and other specifications.</p>

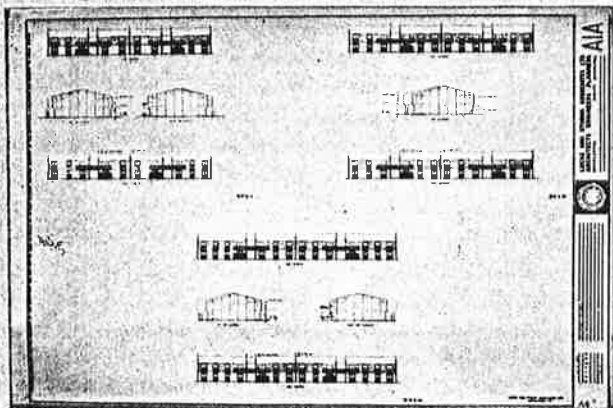
18-5B. Door schedule and details. Door types are covered with 10 typicals and door marks are numbered consecutively, a constant standard. Numbers in each type are increased by 4 for each fire rating (0-20 minute, ¾-hour, 1-hour, 1½-hour, 3-hour).



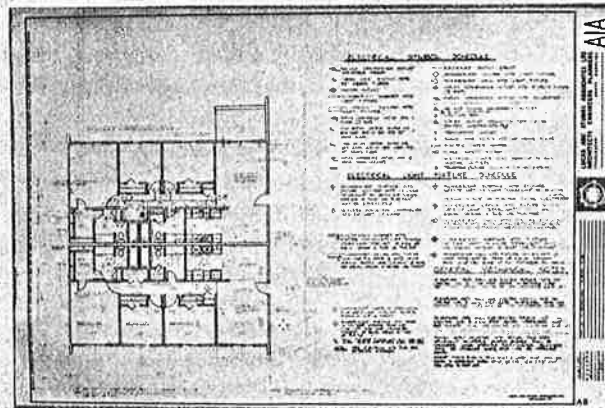
18-6E. Typical unit plans for apartment project.



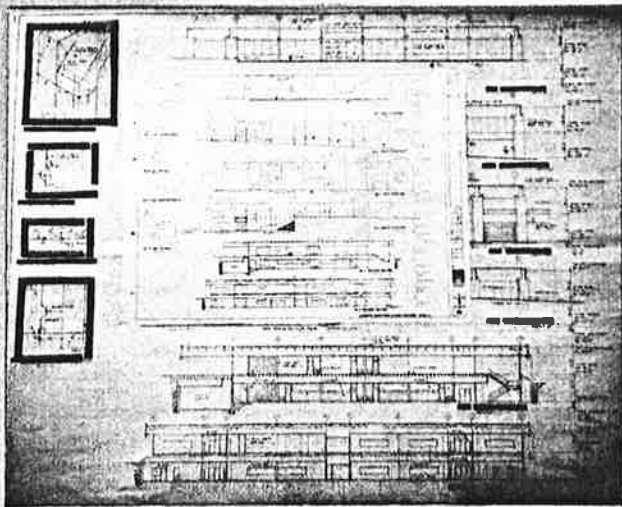
18-6F. Unit plans assembled into buildings.



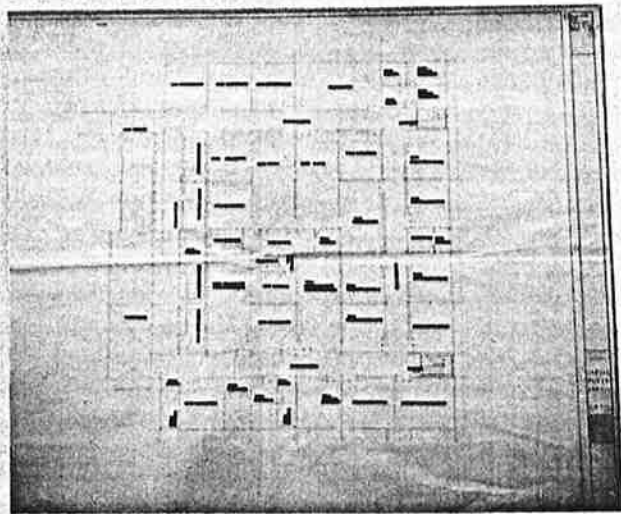
18-6G. Assembly of elevations from unit elements.



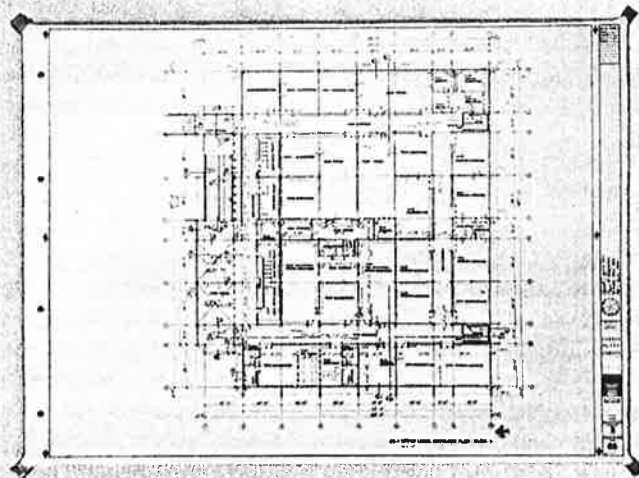
18-6H. Electrical overlay on unit plan (base sheet).



18-7D. Drawing of building elevations and sections superimposed over paste-up from which it was made.

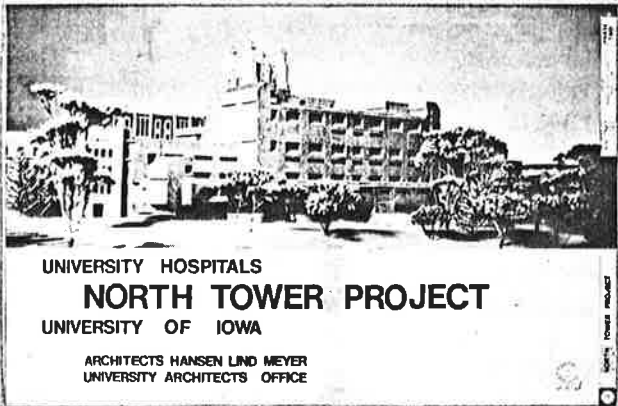


18-7E. Print of paste-up for a floor plan.

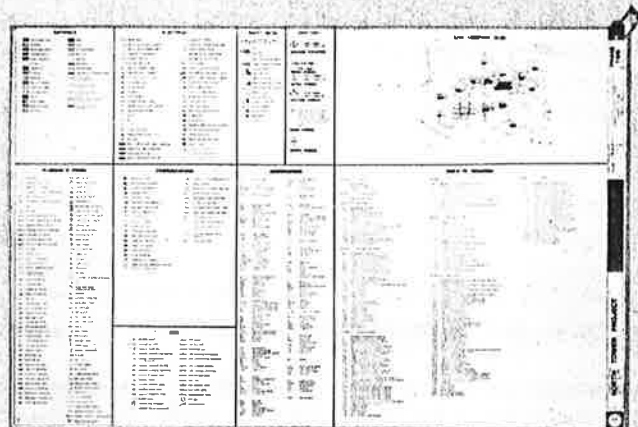


18-7F. Final plan document from paste-up shown in 18-7E.

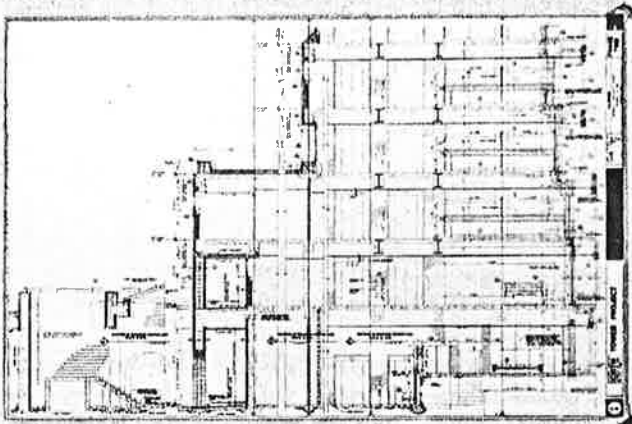
EXHIBIT 18-8. HANSEN LIND MEYER: ANOTHER APPROACH TO WORKING DRAWINGS



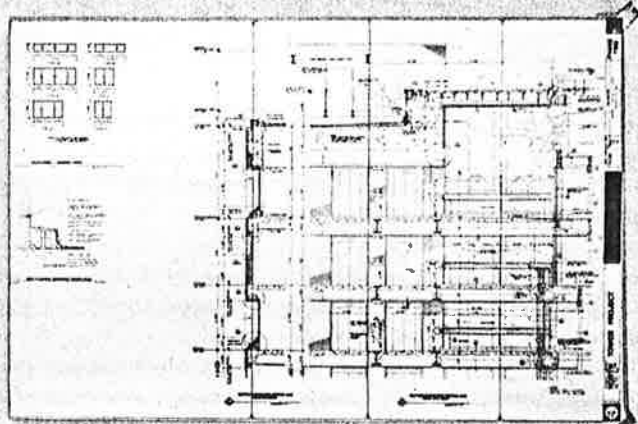
18-8A. Cover sheet showing photo of model of building.



18-8B. Drawing symbols and Index to Drawings in various divisions as described in text.

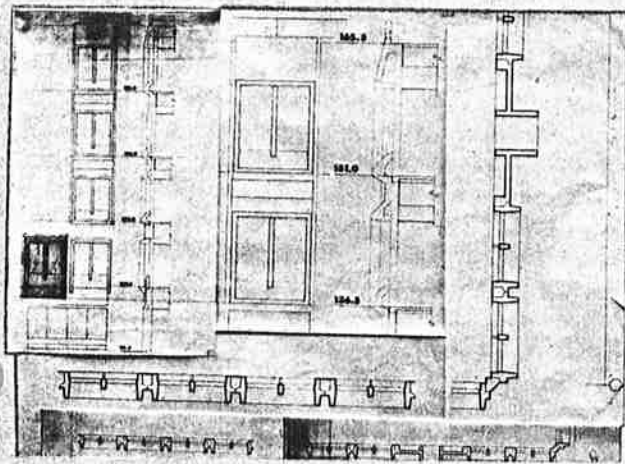


18-8C. Cross section of existing and new work printed in multicolor.

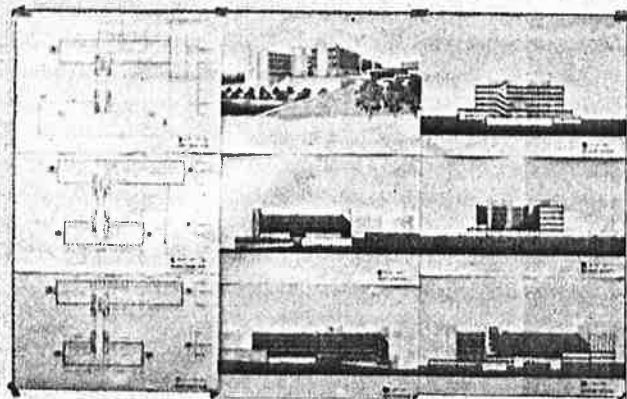


18-8D. Additional sections and details printed in multicolor.

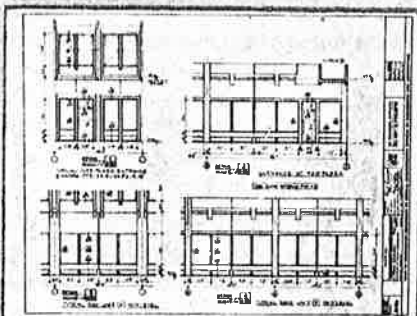
EXHIBIT 18-9. RICHARDSON ASSOCIATES: STUDIES AND WORKING DRAWINGS



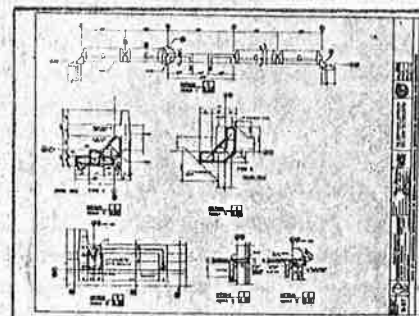
18-9A. Studies of precast structural panels in plan, elevation and section at large scale. Shading around one window is produced by use of 100% rag paper.



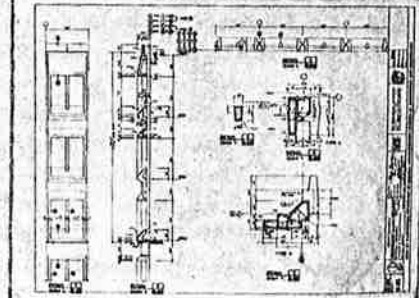
18-9B. Assembly of preliminary drawings into a brochure incorporating rendered window in 18-9A. Perspective is computer-drafted.



18-9C. Final drawings of wall panels delineating final use of studies in 18-9A.



18-9D. Base assembly of elements developed in 18-9A, shown in 18-9C, with structural reinforcing added to identical drawing base sheet.



Why should an architect change a present method of operation to one of the design "systems" described here? If not for financial reasons or time saved, then it should be altered to provide a better set of contract documents and better service—the aim of all professional efforts.

Primarily, the objective of contract documents is to convey the greatest amount of required information in the clearest possible manner, with sufficient copies that every bidder and subbidder has access to every sheet of the set of drawings. Any bidder having only partial information must allow for a contingency which cannot be seen on the drawings at hand. If the method of producing bidding documents is one which permits multiple copies at nominal cost, the client will receive favorable bids to the credit of the architect. If the bidding sets are to be prepared for offset printing, then the preparation of the entire working drawing effort must be directed from the beginning to the end product. All of the documents must be made with this in mind.

The decision to use offset printing for reproduction of bidding documents can result in additional benefits. As the drawing medium may be opaque as well as translucent, the choice of subject matter to be applied is broadened considerably. For example, details from catalogs, books and other sources may be used in their opaque form. Thus the benefits of flexibility and the opportunities to save time

and increase efficiency may be realized by all size firms. To stay competitive, the use of advanced drawing and reproduction techniques will be increasingly employed by the architectural profession.

BIBLIOGRAPHY

Architect's Handbook of Professional Practice. Washington, D.C.: AIA, parts updated periodically.

Current compendium of practice information; chapter on drawings especially pertinent.

Architectural Graphic Standards. Joseph N. Boaz, ed. Washington, D.C.: AIA, 6th ed., 1970.

Invaluable reference book in the drafting room.

"Bidding Document Microfilming." James W. Robertson. *AIA Journal*, November 1971.

How to make drawings acceptable to the camera.

"A Comprehensive Approach to Improving the Quality of Contract Documents." Jerry Quebe. *AIA Journal*, February 1975.

Presents registration drafting and organizational formats.

"A 'Design System' That Produces Contract Drawings." Ned H. Abrams. *AIA Journal*, March 1970.

Describes photo-drafting techniques.

"A Drawing Method for Fast Perspectives." Cliff Phillips. *AIA Journal*, February 1971.

Useful presentation for architects.

"Integragraphs: An Experiment in Production." Donald E. Jarvis. *AIA Journal*, March 1974.

Means of interpreting written and graphic instructions to speed up the making of contract documents.

Integragraphs—An Experiment in Architectural Communication. Dallas: Jarvis Putty Jarvis, Inc., 1973.

Valuable guide that should be in every architect's library and drafting room.

"Photo-Drafting: Time-Saving Aid to Quality." *Architectural Record*, February 1972.

Outlines 16 steps in using the process.

"A Uniform System for Working Drawings." AIA Committee on Office Practice. *AIA Journal*, January 1974.

Describes recommended standards for architects' working drawing abbreviations, material designations, graphic symbols, schedule formats, standard drawing sizes.

Working Drawings in Use. C. D. Daltry and D. T. Crawshaw. Watford, England: Building Research Establishment, June 1973.

A study of British practices in working drawings and recommendations for improvement.

For bibliographic references on computer-aided drafting, see Chapter 15.

**D E S I G N
P R O D U C T I O N
T E C H N I Q U E S**
i n c o r p o r a t e d

cutting production costs



EXISTING WOOD FENCE

SETRACK LINE

EXISTING RETAINING WALL

NATURAL EXTENSION

EXISTING PARK

OUTER MARKET

NORTH SHALE

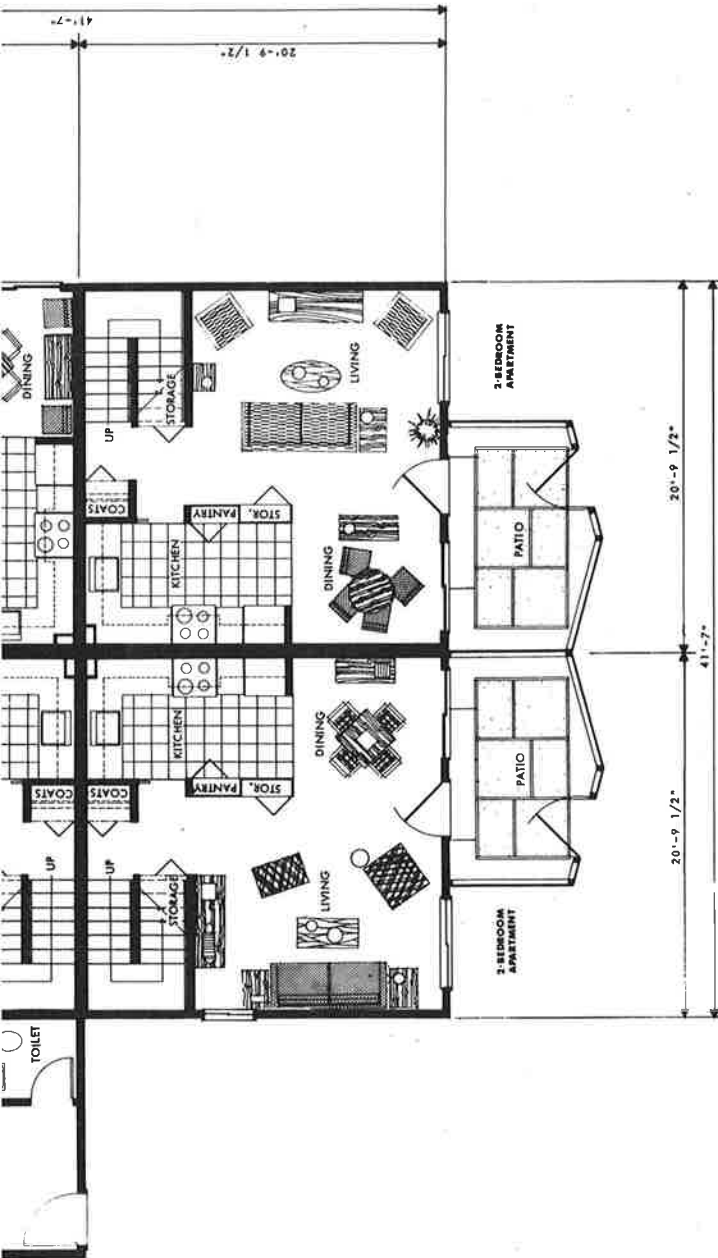
HERRICK STREET

EXISTING PARK

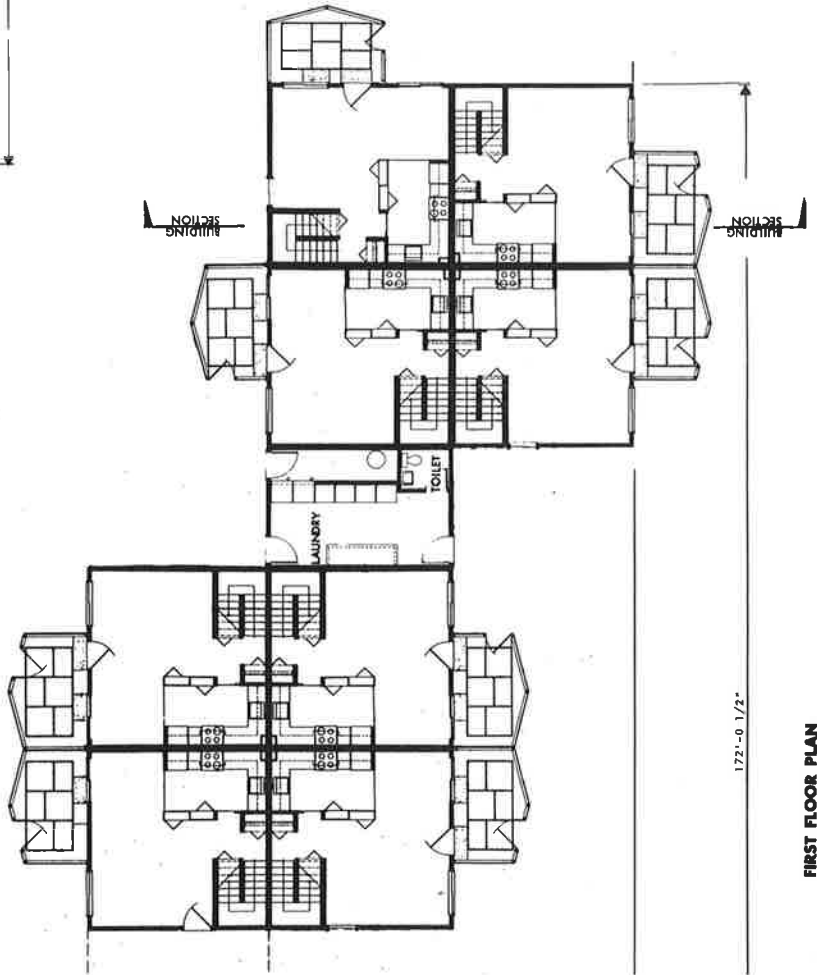
CAMPUS DRIVE

OUTER MARKET

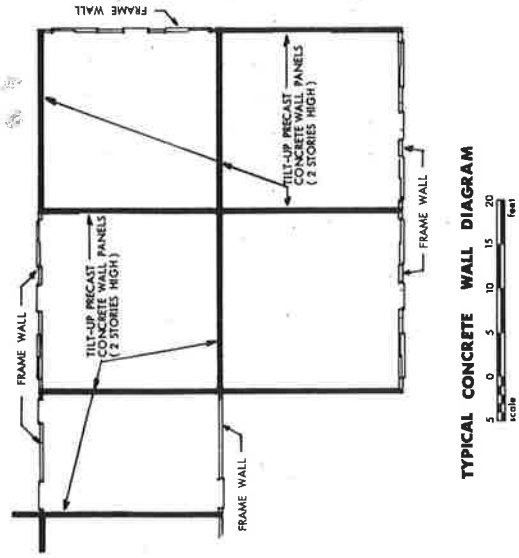




TYPICAL SEGMENT PLAN FIRST FLOOR PLAN



FIRST FLOOR PLAN



TYPICAL CONCRETE WALL DIAGRAM

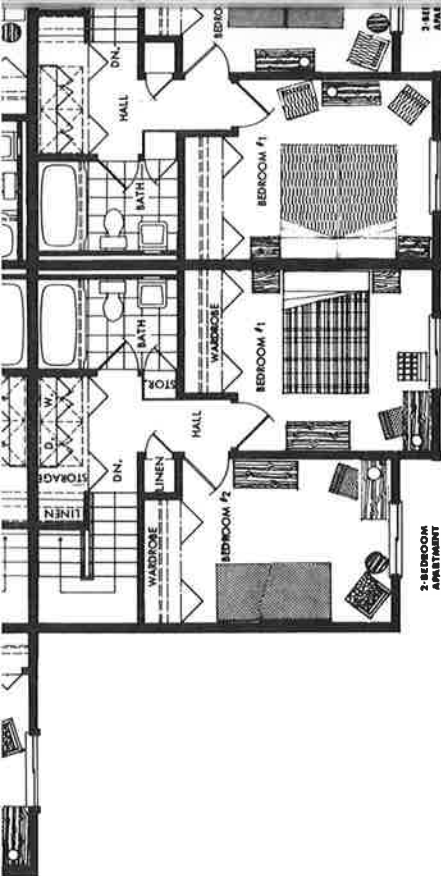


ESCONDIDO VILLAGE INCREMENT V

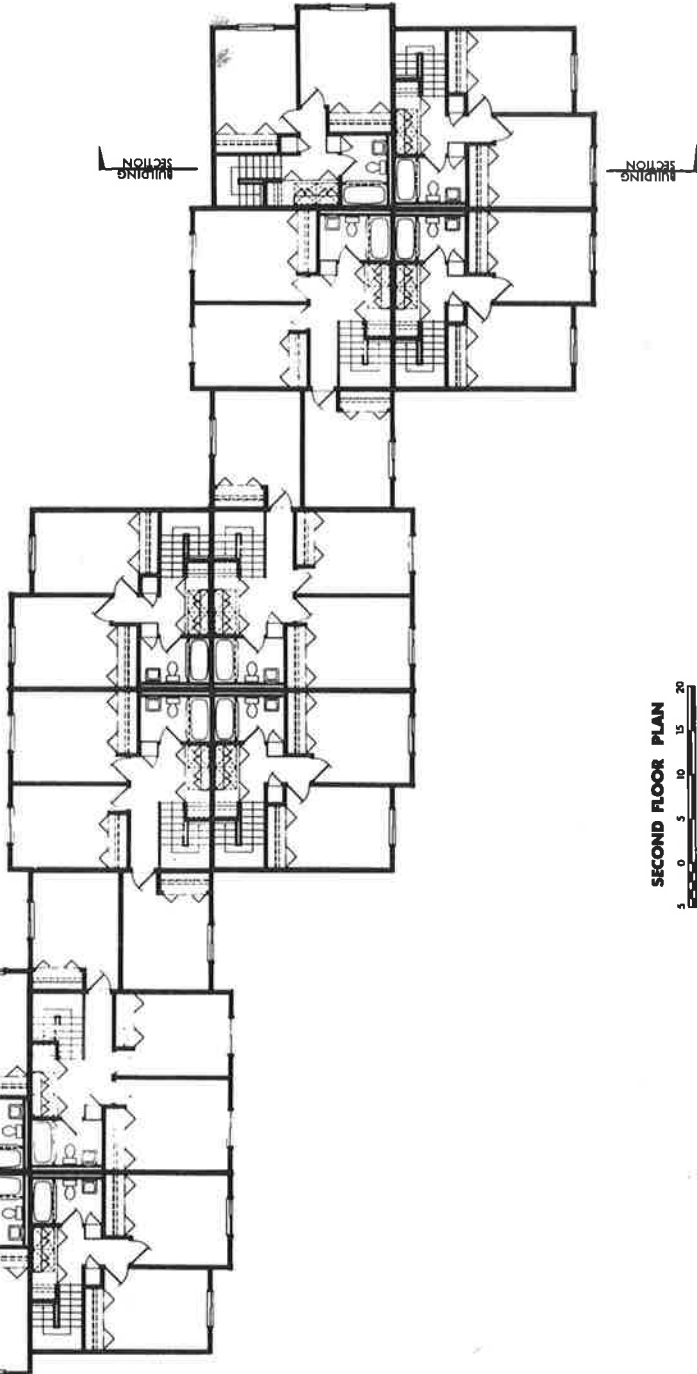
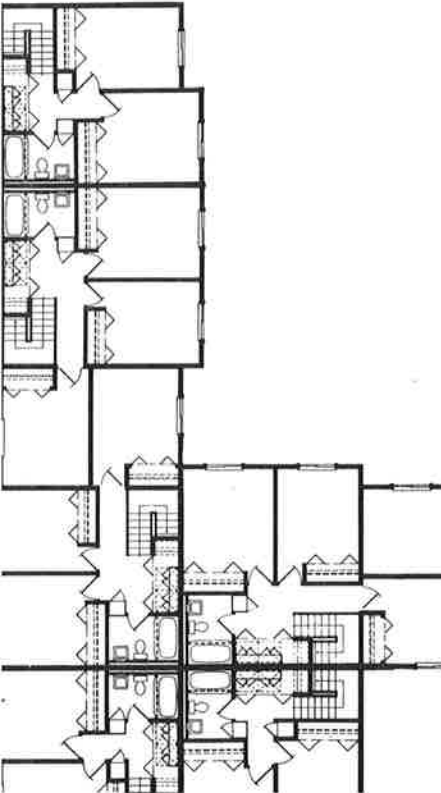
STANFORD UNIVERSITY
STANFORD CALIFORNIA

UNITED HOMES CORPORATION
A Subsidiary of Levitt and Sons, Inc., A Worldwide Service of LTD
1220 SOUTH 38th STREET, FEDERAL WAY, WASHINGTON, D.C. 20004
NED H. ABRAMS - ARCHITECT
ARCHITECTURE - SITE PLANNING - CONSULTING - ECONOMICS
375 BRITTON AVENUE SUNNYVALE, CALIFORNIA 94088

CONSULTANTS
SENTLEY ENGINEERS, INC.
ARCHITECTURAL, INTERIORS, MEP, & STRUCTURAL CONSULTING ENGINEERS/ARCHITECTS
40 Fremont Street, San Francisco, California 94105
GENERAL CONTRACTOR: **WOLFE ASSOCIATES**
1000 WILSON AVENUE, SAN FRANCISCO, CALIFORNIA 94133
MEP PRICE ADVISOR: **BEHRENDT CIVIL, CA**
588 Price Avenue, Redwood City, CA 94061



TYPICAL SEGMENT PLAN - SECOND FLOOR PLAN

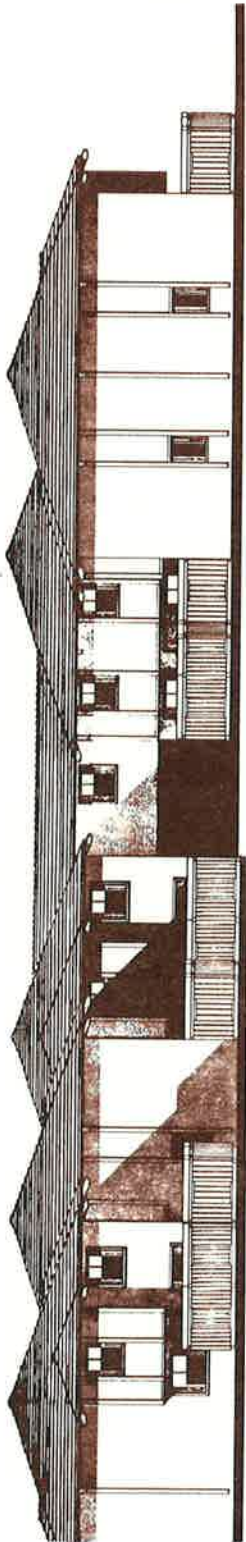


SECOND FLOOR PLAN

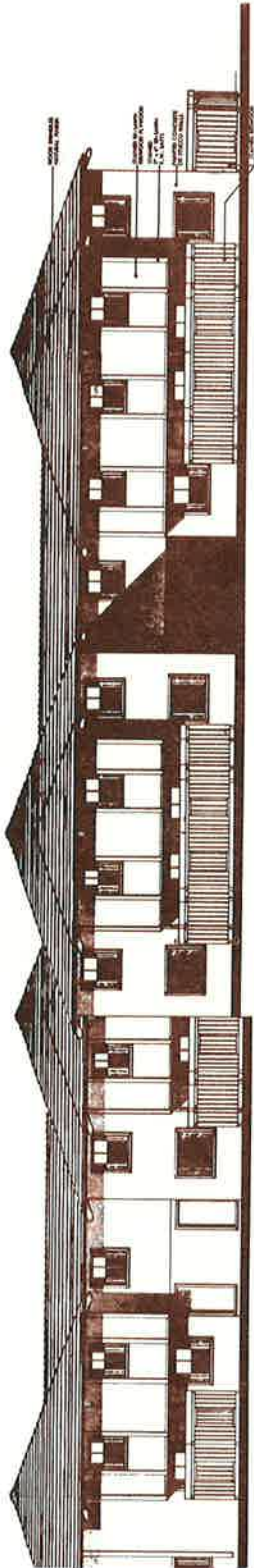


ESCON
 AN
STANFOR
STANFOR
UNITED
 A Subsidiary of **UNITED**
 1720 SOUTH 38TH
NED H.
ARCHITECTURE
 375 BRITTON AVE.
 CONSULTANTS
 CONSULTANTS
 CONSULTANTS
 CONSULTANTS
 CONSULTANTS
 CONSULTANTS
 CONSULTANTS
 CONSULTANTS
BRISMAN & MOSELEY
 CONSULTING ENGINEERS
 888 First Avenue - Seattle

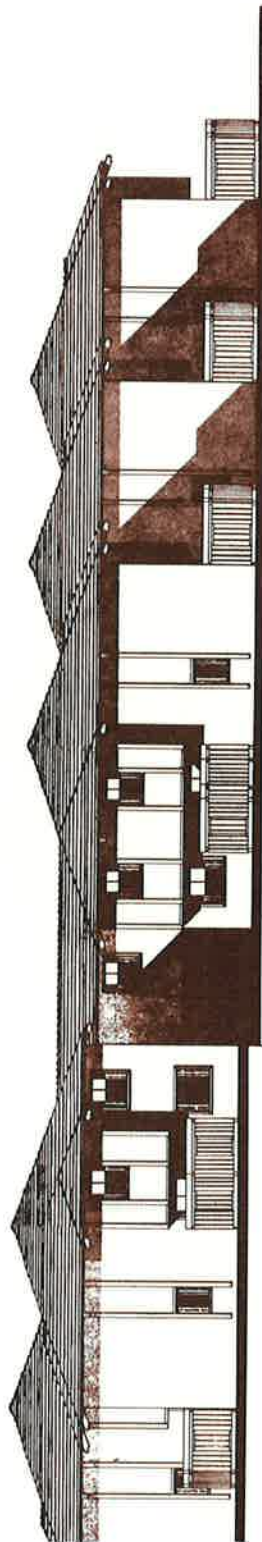
of production technique



WEST ELEVATION



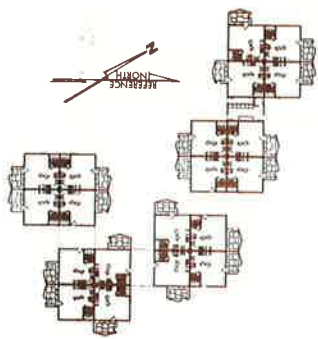
SOUTH ELEVATION



EAST ELEVATION

BUILDING ELEVATIONS

of production technique

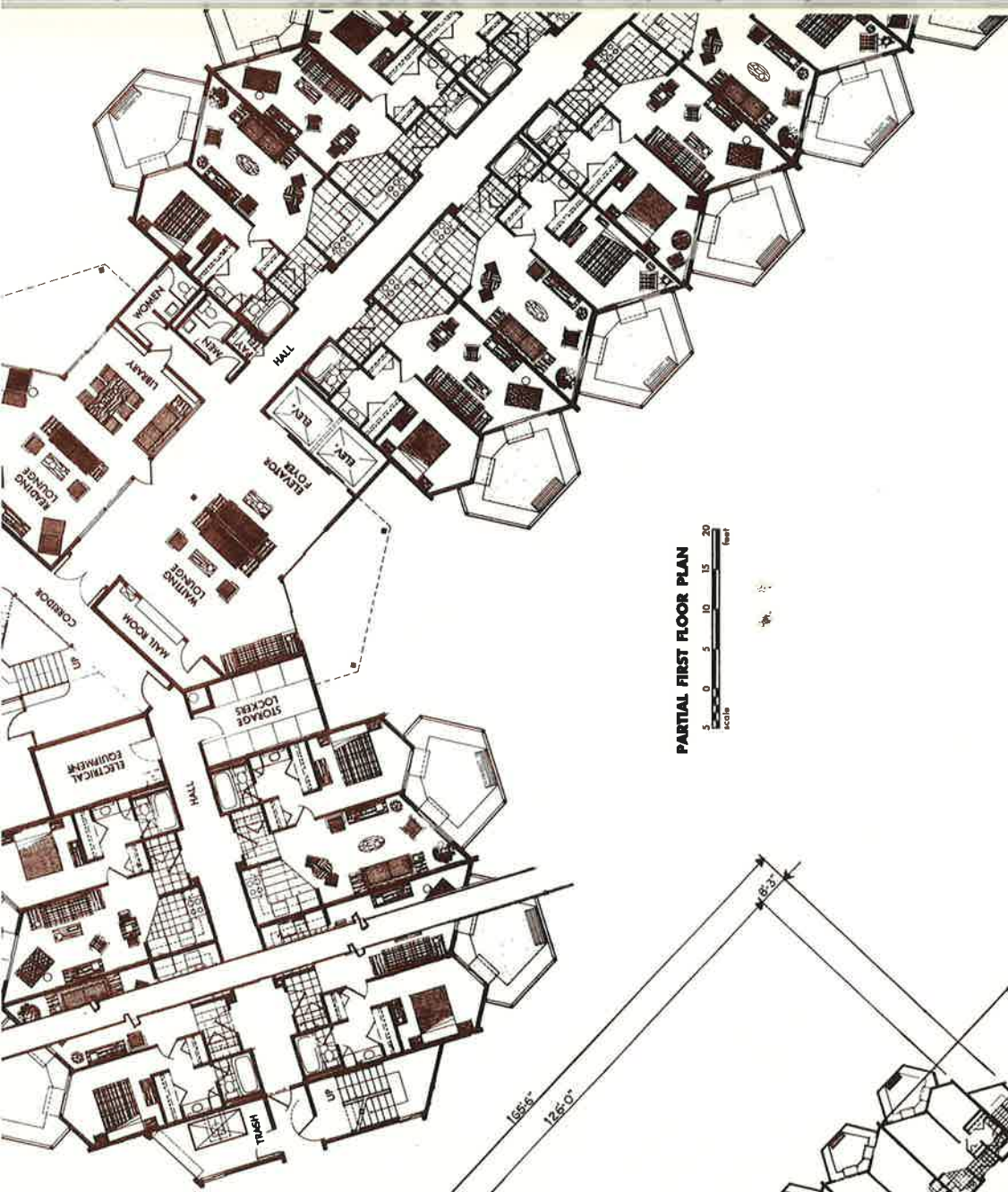


KEY PLAN

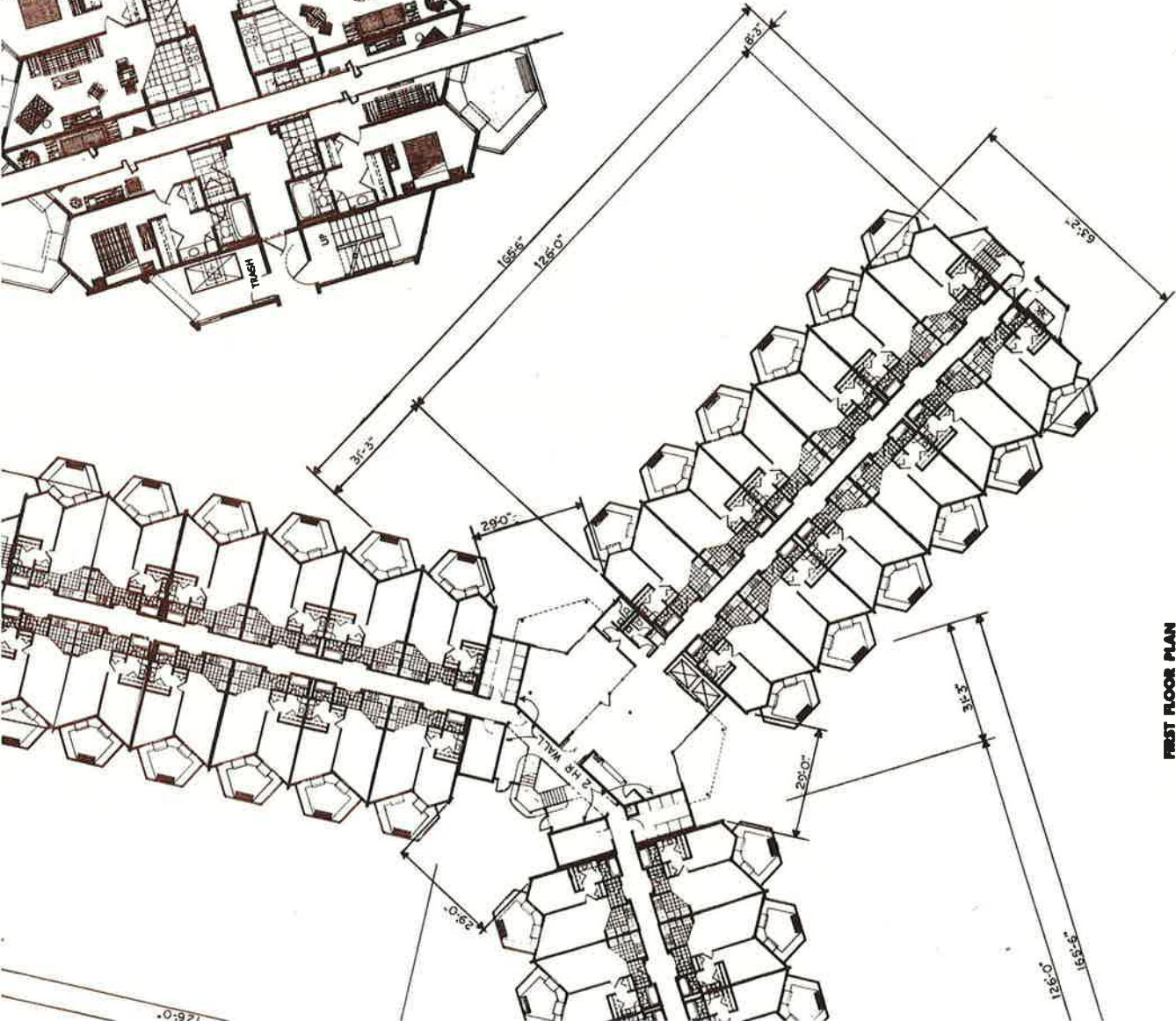
ESCONDIDO VILLAGE
INCREMENT V
STANFORD UNIVERSITY
STANFORD CALIFORNIA

UNITED HOMES CORPORATION
 A Subsidiary of
 Lehigh and Sons, Inc. FEDERAL WAY, WASHINGTON, 98002
NED H. ABRAMS - ARCHITECT
 ARCHITECTURE - SITE PLANNING - CONSULTING - ECONOMICS
 575 BRITTON AVENUE SUNNYVALE, CALIFORNIA 94088

CONSULTANTS
BEUTLEY ENGINEERS, INC.
 ELECTRICAL, MECHANICAL, CIVIL, & STRUCTURAL ARCHITECTURE
 49 Fremont Street, San Francisco, California 94105
BRIAN LANGRISH FOLK & ASSOCIATES
 ARCHITECTS, ENGINEERS, PLANNERS - STANFORD
 188 Price Avenue, Redwood City, CA 94061



PARTIAL FIRST FLOOR PLAN



FIRST FLOOR PLAN



ESCONDIDO VILLAGE
INCREMENT V
STANFORD UNIVERSITY
STANFORD CALIFORNIA

UNITED HOMES CORPORATION
 A Subsidiary of Levitt and Sons, Inc. A Worldwide Service of IIT
 1220 SOUTH 35th STREET, FEDERAL WAY, WASHINGTON 4000

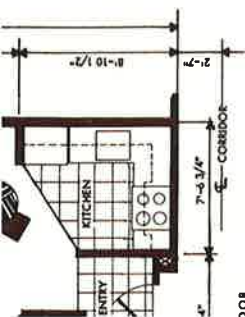
NED H. ABRAMS - ARCHITECT
 ARCHITECTURE - SITE PLANNING - CONSULTING - ECONOMICS
 375 BRITTON AVENUE SUNNYVALE, CALIFORNIA 94088

CONSULTANTS
BENTLEY ENGINEERS, INC.
 42 Fremont Street, San Francisco, California 94105

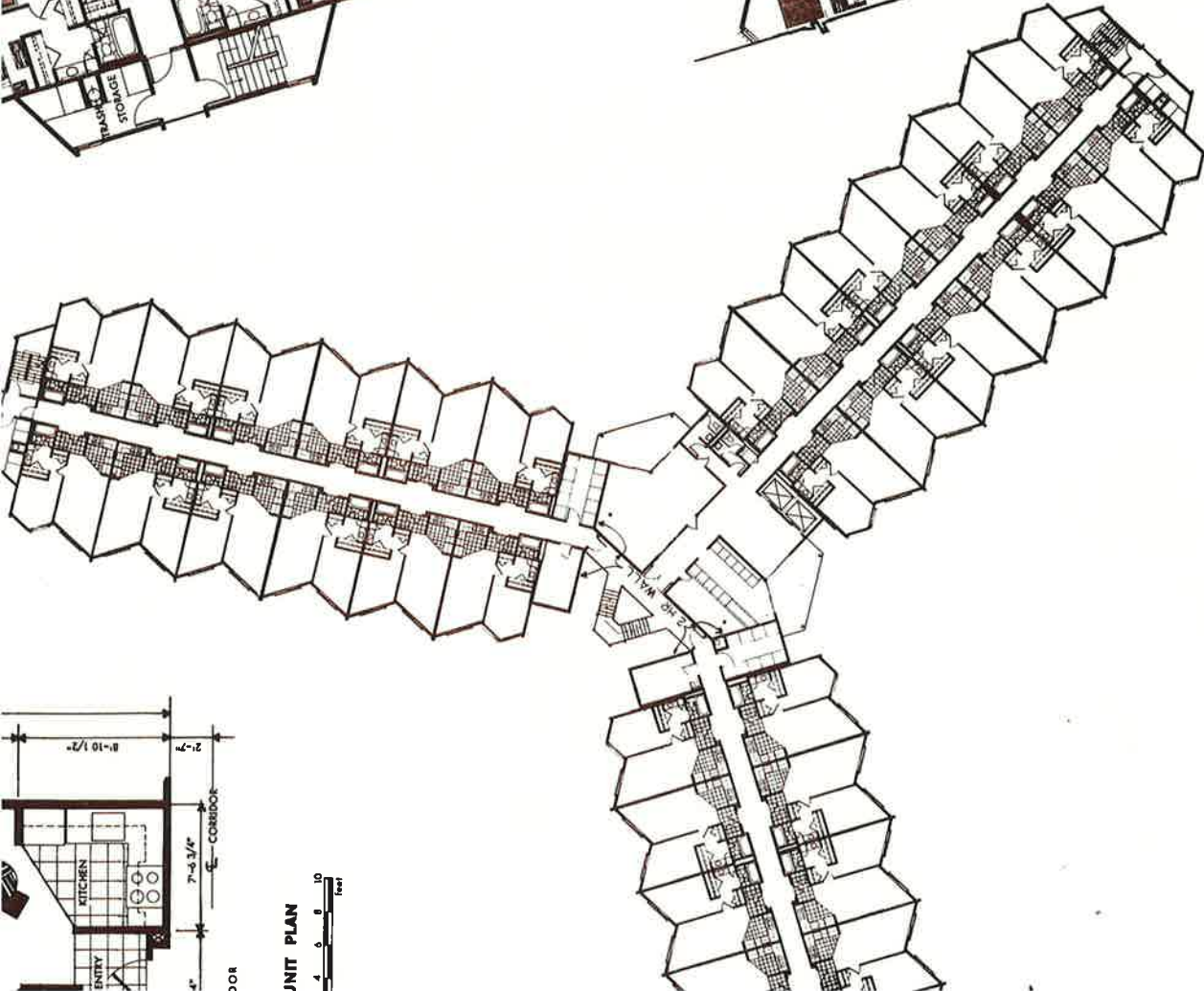
FRANK J. DOOLEY & ASSOCIATES
 CONSULTING ARCHITECTS - CIVIL ENGINEERS
 144 Pine Avenue, Redwood City, Ca. 94061

BUILDING FLOOR PLANS BUILDING No. 5

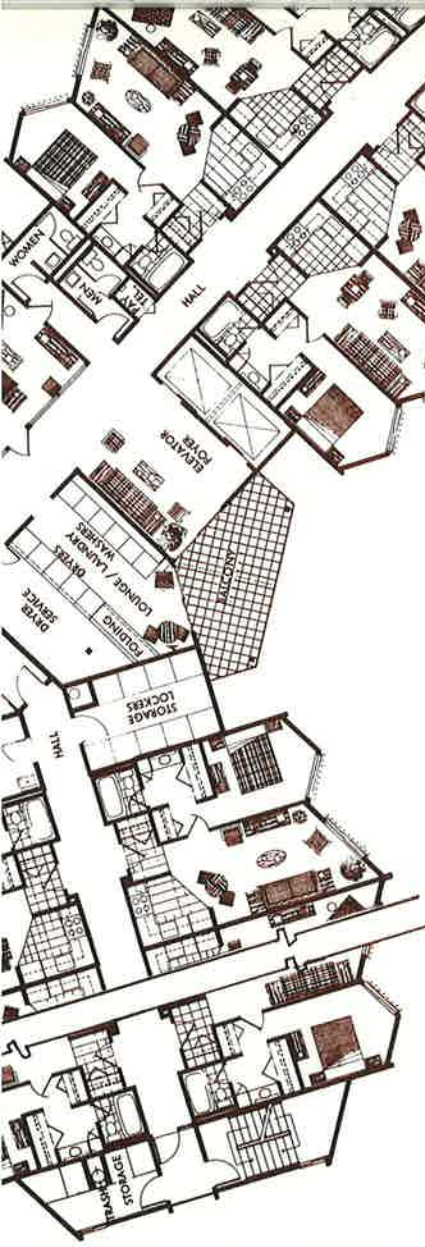
roduction technique



UNIT PLAN



TYPICAL SECOND AND FOURTH FLOOR PLANS



**PARTIAL FLOOR PLAN
2nd & 4th FLOORS**



**PARTIAL FLOOR PLAN
3rd FLOOR**



Building No. 5

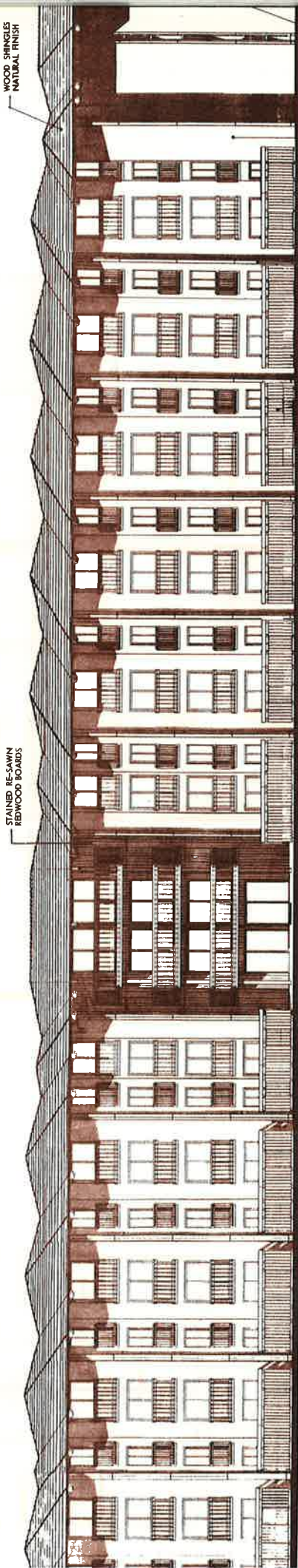
BUILDING FLOOR PLANS

BUILDING No. 5

**ESCONDIDO VILL
INCREMENT V
STANFORD UNIVE CALI**

UNITED HOMES CORPORA
A Subsidiary of Levitt and Sons, Inc.
1200 SOUTH 356th STREET, WASHINGTON
NED H. ABRAMS - ARCH
ARCHITECTURE - SITE PLANNING - CONSULTING
375 BRITTON AVENUE SUNNYVALE, CALIFORNIA
BENTLEY ENGINEERS, INC.
CONSULTANTS
1650 MARINA AVENUE, SAN FRANCISCO, CALIFORNIA 94108
BRUNN, MANOAB, FODLE & ASSOCIATES
ARCHITECTS
4000 RAYBURN AVENUE, SUITE 100, RUCINETTOS
1881 Pine Avenue, Menlo Park, Calif. 94025

ELEVATION No. 1



STAINED RE-SAWN REDWOOD BOARDS

WOOD SHINGLES NATURAL FINISH

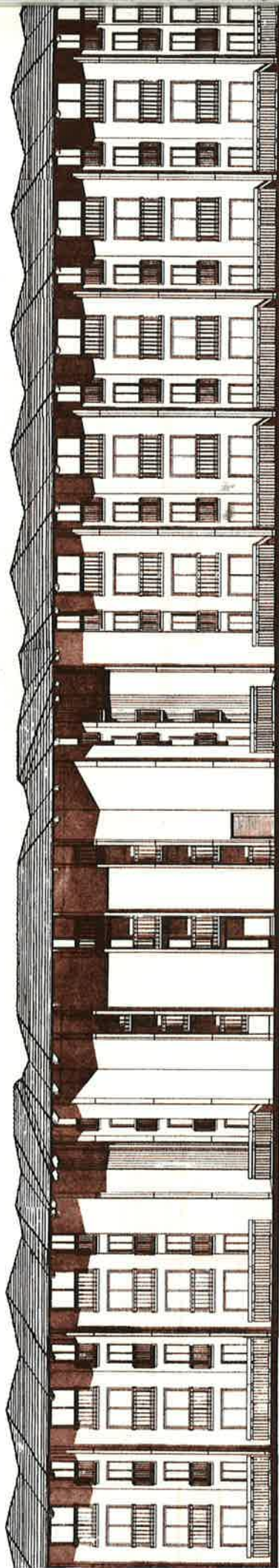
STAINED REDWOOD PATIO FENCES

STAINED RE-SAWN 2 X 4

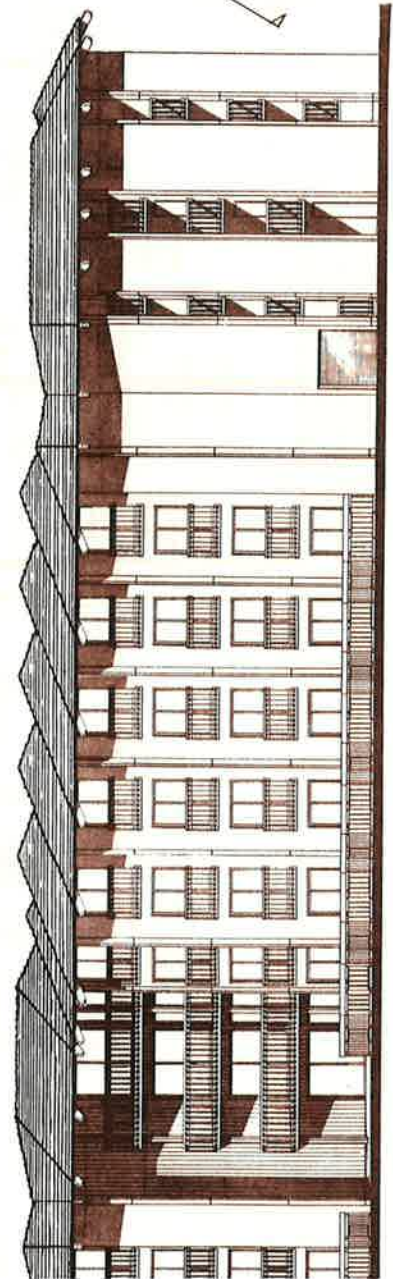
PAINTED STUCCO WALLS

EDW METZ

ELEVATION No. 2

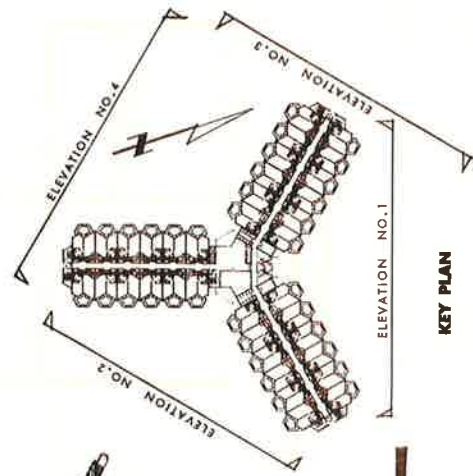


ELEVATION No. 3



ELEVATION No. 4

BUILDING No. 5



KEY PLAN

**ESCONDIDO VILL
INCREMENT V
STANFORD
STANFORD
UNIVE
CAL**

UNITED HOMES CORP
A Subsidiary of
1220 SOUTH 358th STREET, FEDERAL WAY, WASHINGTON
NED H. ABRAMS - ARCH
ARCHITECTURE - SITE PLANNING - CONSULTING
375 BRITTON AVENUE SUNNYVALE, CALIF
CONSULTANTS

BENTLEY ENGINEERS, INC
ARCHITECTURAL, MECHANICAL, ELECTRICAL & STRUCTURAL ENGINEERING CONSULTANTS
10000 FIVE CREEK DRIVE, FORT MYERS, FLORIDA 33905
CONSULTING ENGINEER - PLANNING - EVALUATOR
348 First Avenue Redwood City, CA 94061



How to get informed on the new reprodrafting systems

Recently, I've been talking with architects and engineers nationwide and there's an explosion of interest in the new reprographic systems now available, such as overlay (or "pin register") drafting, composite drafting, applique drafting, etc.

The problem that people are running into is an information gap. A/E's have told me they often don't have enough information to switch over successfully to new systems. Or, they have switched over but it entailed too much trial and error.

Many design professionals think the information isn't available. Actually it is there. They just haven't known where to look.

One of the best sources of information is a routine reading of this journal, to keep abreast with all that is current in this field.

Workshops and seminars are also an excellent source of information, especially when they include demonstrations, lots of visuals, and "hands on" training. Architect Ned Abrams, through his Deprotech Co.,

is the master of this kind of training. (See the December, 1977 issue of this magazine for a description of Ned's system and his approach to training architects and engineers.)

Ned Abrams has invented some brilliant original techniques in composite drafting. His system allows people to deal efficiently with the endless repetitions that pervade production drawings. Lately, Ned has incorporated aspects of overlay ("pin register") drafting so that the systems complement and augment one another.

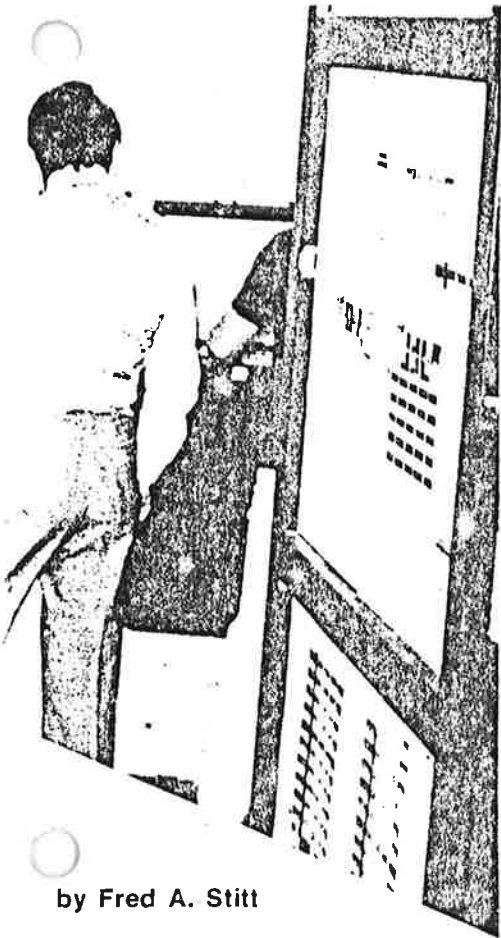
One of the best features of Ned Abram's training is that participants get real work done on their own projects while they're learning the system. That significantly off sets the time and money investment of attending the two day workshops. Ask for the 1978 training schedule from Ned Abrams, Design Production Techniques, Inc., 845-D Stewart Drive, Sunnyvale, CA 94088. (408) 736-4316.

Another kind of workshop is conducted by Philip M. Bennett of the

Department of Engineering — Extension at the University of Wisconsin in Madison. A large group workshop on "Working Drawing Production Techniques" is held each spring (April 6-7, in 1978). Philip assembles the best repro drafting talent in the business to present their latest developments. The presentations are in illustrated lecture form rather than as "hands on" training. Overall, they're best suited for people who are already somewhat experienced in the field.

A large, diverse program such as that presented in Madison, always has a mix of information ranging from very basic to highly complex. This means that not every member of the audience is satisfied with every presentation. But everyone will find plenty of good new ideas sprinkled throughout the two day experience — a very worthwhile exchange of data.

The theme for this year's April 6-7 Madison workshop deals with "the systematization and implementation of new techniques within the de-



by Fred A. Stitt

sign office." I'll be giving a talk on some of the problems and solutions in implementing new systems and would be glad to meet some of you *Repro Drafting Digest* readers. (There's always a long lead time for any publication of this kind, so although this article is being written in December for the March issue, some of you might not get the information until after the April 6-7 workshop in Madison. In that case, you might contact Phil Bennett to be placed on the mailing list for future workshops.)

In addition to the large (200 and more guests) Madison workshop, Philip Bennett also directs a more tightly knit roundtable on "Managing Architectural Working Drawing Production" every September in Milwaukee. Last September's session featured some real stars in the field, including Jerry Quebe of Hanlon-Lind-Meyer, William Workman of Jarvis-Putty-Jarvis, Terrance Lallak of Perkins & Will, and C. Page Highfill of Highfill-Smith, Richmond, Virginia. These are all very

Seminars and workshops are invaluable for getting to exchange ideas with other professionals, and to learn hands-on techniques.

creative men from innovative offices and they provided extremely valuable data on modern working drawing management.

I've just described the architectural portion of the fall production workshops in Milwaukee. There are also concurrent workshops on manufacturing drafting management and on production management in civil engineering drawings.

For further information on the University of Wisconsin workshops, contact Philip Bennett, Program Director, Department of Engineering, University of Wisconsin — Extension, 432 North Lake Street, Madison, WI 53706. (608) 262-2061.

An intensive 4-hour session on drawing production systems is scheduled for the American Institute of Architects Convention this May in Dallas. Exact format and content aren't known at this writing, but the session is scheduled to be directed by Gary Gerlach, an architect who specializes as a consultant on the new Mini-Max graphics systems.

My own company, Guidelines, will also be presenting "hands-on" training programs around the country this year. These will be designed as one-day sessions to introduce the basics of job planning, coordination, and literal details of physically assembling appliques, composite and overlay drawings.

Also, I've found in talking with A/E's around the country that a major office problem in introducing new systems is the problem of training the production staff. So, besides the booklets that Guidelines has already published on the systems, we're introducing a totally new combination of instructional tape cassettes and work kits for in-office hands-on self training. This will allow offices and individuals to conduct their own training workshops at much less expense and much great-

er convenience than has ever been possible.

We're also developing a program for training students at the high school, community college and university levels in these new systems. Anyone who wants further information on publications, workshops, cassette/work kit trainings and other programs should write to: Fred A. Stitt, Guidelines, Box 456, Orinda, CA 94563.

There are several articles that every office should have on file, and perhaps photocopied and included in each employee's office manual. These are: "A 'Design System' That Produces Contract Drawings," by Ned H. Abrams, *AIA Journal*, March 1970, pp. 59-64. "A Comprehensive Approach to Improving the Quality of Contract Documents," by Jerry Quebe, *AIA Journal*, February 1975, pp. 44-47. "Integragraphs: An Experiment in Production," by Donald E. Jarvis, FAIA, *AIA Journal*, March 1974, pp. 41-44. "Photo-drafting: Time-Saving Aid to Quality," *Architectural Record*, February 1972, pp. 53-56. "Overlay Drawing Technique Helps Reduce Errors and Omissions," by Philip M. Jones, R.A., *Architectural Record*, July 1976, pp. 55-58.

Those are some of the best articles of the past few years and, of course, several in this magazine, which has and will continue to provide outstanding articles on the subject in practically each monthly issue.

Books and booklets on the subject are sort of in limbo right now. Some that were available aren't offered now — except for the *Guidelines* series, they're still going strong. There will be a major book or two on what I call "Systems Drafting" and reprographic techniques available from a major publisher

continued on page 34

Aiding inventors

Dear Sir: Enclosed please find some information about organizations that assist inventors. This is in reference to your call for help for this information.

St. Clair College of Applied Arts & Technology
2000 Talbot Rd. W.
Windsor, Ontario N9A 6S4
Canada
(Ask for brochure "Project Learning Plan")

University of Oregon
Innovation and Invention Center
College of Business Administration
Eugene, OR 97403

Oregon Inventors Council
P.O. Box 3288
Eugene, OR 97403

Association for the Advancement of Invention & Innovation
Suite 301, Crystal Mall 1
1911 Jefferson Davis Hwy.
Arlington, VA 22202

P. Joseph Posch
Clintondale High School
Mt. Clemens, MI

Welcomed News:

If you have drafting society news, metric conversion news, or general news of interest to drafting, reproduction or architectural management and personnel, please be sure to send it to us for possible inclusion in these pages. We welcome comments, news and letters.

The Editors

To receive materials listed below please write, on your company letterhead, directly to the manufacturer listed — requesting desired information. Please reference this publication and issue.

Requests for information pertaining to editorial content should be addressed to the Editor as listed on page 3.

Appliques and symbols

Pressure sensitive, custom printed appliques, symbols and title blocks as well as sheets for typing and sheets for plain paper copiers. For literature and samples write.

Stanpat Products, Inc., Dept. 6 DD, 366 Main St., Port Washington, N.Y. 11050.

Design/drafting tools

Literature on TG technical pens, pencils, leads, pointers, drafting erasers and colored artist's pencils are available from Faber Castell, Inc., 41 Dickerson St., Newark, N.J. 07107.

Diazo film and removal fluid

Samples of their new TeleTex™ diazo film and TeleGel™ image removal fluid are offered by Teledyne Post, Sales Dept., Box 803, Chicago, Ill. 60690.

Drafting films and papers

Literature and samples of Printfast® and Alinatex® Vellum as well as non repro and metric grids, films and field books are available from Teledyne National Tracing Paper, Box 1228B, Indianapolis, Ind. 46206.

Inking system on film

Information on a system of integrated instruments and materials for direct ink drafting on film — "The Rapiddraw System" is offered by Koh-I-Noor Rapidograph, Inc., 100 North St., Bloomsbury, N.J. 08804. In Canada: Koh-I-Noor/Canada/Ltd., 4180 Ave., De Courtrai, Montreal, Quebec H3S 1C3.

Lamps

For descriptive literature and prices on Super Diazo white-printer lamps as well as mercury vapor, fluorescent and projector lamps write: Quartz Radiation, 1275 Bloomfield Ave., Fairfield, N.J. 07006.

Pressure sensitive film

Samples and literature on their new Herculene® transfer drafting film for typing and use in plain paper copiers is offered by Keuffel & Esser Co., 20 Whippany Rd., Morristown, N.J. 07960.

How to get informed

continued from page 19

next year. That sums up the main information sources available to you right now. You can be sure there'll be others, in fact you can expect an information explosion in this fast-moving new field. In that explosion there'll be confusing and even contradictory claims and technical data. The best preparation is to become thoroughly familiar with the information at hand — it's good data and it's not overwhelming in volume nor technical detail. And, of course, keep watching the pages of this journal for reports on the latest breakthroughs and refinements in repro drafting. ■

Fred A. Stitt, is a California architect who has researched and written on all aspects of architectural design, management and production. He edits *The Guidelines Letter*, a management-oriented newsletter for design professionals. He also produces *Chronolog*, *The Time Management Newsletter*; writes varied publications for his company and others; conducts workshops; and occupies himself primarily with the general subject of solving problems — especially problems within the design professions.

M E M O R A N D U M

SUMMARY OF DOCUMENT PRODUCTION TECHNIQUES

Inspired at two Penn State conferences by Ned Abrams's approach to new techniques of document production, this office undertook two pilot projects employing these principals; the first was an airlines flight kitchen (\$1+ million) and a major state office building (\$6+ million). Two fundamental objectives were established: More inclusive documentation at a manageable size and reduction in manpower requirements through repetitive reproduction techniques.

To accomplish both these objectives, the procedure was to fully develop, at large scale, each building component, area or section; finished drawing techniques of drafting were always employed at these scales, usually twice or three times the scale intended for the final reproduction. Comprehensive delineation at large scale and continuous correlation with related disciplines working at the same scales gave positive assurance of suitability and workability. It then remained to photographically reduce this element to appropriate scale and, on "summary" sheets, unite it photographically with adjoining related elements similarly developed, omitting the traditional task of redrafting the element at the smaller scales generally required to delineate a total floor, section or elevation.

One example is the single precast load-bearing wall panel of the office building; this done once, at accurate 1-1/2" scale in plan, elevation and section, was reused hundreds of times, at varying scales produced in quantity by the camera and printing press, to form complete plans elevations and sections without ever redrawing the element. Structural engineers then simply added their requirements to the same large scale elements for their documents. Toilet rooms and stairways designed for essential typicality, were drawn at large scale once only to a point of full commonality, then "flipped" or "reversed" as required, each then completed with non-common features and "pasted" onto the summary drawing after suitable reduction. Again, only one elemental drawing was used for each of the twenty typical toilets.

Most importantly, large scale study eliminated errors in detail and correlation, and repeated reuse of a single element eliminated potential errors inherent in repetitious drafting of the same thing over and over again. The saving in manpower is obvious.

Composite summary drawings of plans, photographically screened onto mylar, were provided to mechanical, electrical and structural engineers for direct application or overlay of their systems, eliminating their cost of drafting backgrounds.

Final contract documents were photographically reduced and produced by offset printing to final image size of 17" x 22", a commercial size established by "four-up" printing of 8-1/2" x 11" paper size on a single plate. This size is the maximum size, in our area, not subject to union-shop labor scale. It must be remembered: these are not the conventional "half-size" drawings; they are always designated at the actual scale shown. A drawing may be actually developed at 1/4" scale, but is labelled 1/16" scale if it is to be finally presented at that scale. We have found no contractor resistance to this process; it was learned early in our study that their phobia toward "half-size" documents is largely generated by the always-present and real fear of substantial bidding errors through either "forgetting to double the take-off" or, if the actual scale has been allowed for but not properly communicated up the line, someone again doubling the quantity during formulation of the bid.

THE GUIDELINES ARCHITECTURAL LETTER

Post Office Box 456
Orinda, Calif. 94563

Vol. IV, No. 9
September 1975

Every set of working drawings is riddled with repeat data. The repeats aren't always identical. Many vary in size or detail. Some are upside down or reversed. They represent an investment of hundreds of work hours and thousands of dollars in any large set of drawings. They also represent time and money just thrown away.

Professional graphic artists wouldn't dream of fooling around the way drafting employees are compelled to. When they revise a layout, they don't erase and redraw; they paste new data over the old. If an element is repeated, they photograph it, print it larger, smaller, reversed--modified in any way they want. But they don't redraw it.

Working drawing production procedures are drastically limited by the requirements of drawing for diazo printing. The medium is limited, has to be translucent. Drawing materials are limited to those compatible with the printing process. Potentially time-saving appliques or paste-ups require excessive care and often print badly anyway.

When the architect starts thinking in terms of opaque drafting media, photocopying and offset printing, a new world of flexibility and timesaving opportunities starts to open up.

We observed all this at Ned Abrams' Design Production Techniques Workshop recently. You've probably received AIA announcements of the workshops. They're costly--\$325 for AIA members, \$400 for others. And there's travel costs. But it's a bargain.

It's one of the few workshops we've seen where people actually work. In fact, it's possible to get in several hundred dollars worth of your own production during the 2-day session. The fee pays for the aid of Abrams' staff, special materials and the use of an impressive array of printing and photographic equipment.

Some features of Abrams' production system are fairly well known to architects. Many are not. Architects usually have doubts about costs, availability of equipment, quality control, etc. At the workshop we watched caution and skepticism among participants change to acceptance and then enthusiasm. Firsthand experience with the system guided by someone who has been at it for years makes the difference.

Graphic techniques workshop strives for production savings

Ned Abrams' Design Production Techniques Workshop (Deprotech) is a two-day learning marathon where architects are instructed in the cost economies, time-saving and improved quality that graphic arts techniques can bring to their project drawings. Deprotech's workshop takes place at Mr. Abrams' architectural offices in Sunnyvale, California; the basic course is \$350, exclusive of accommodations. (The mailing address is: Deprotech, 845D Stewart Drive, Sunnyvale, California 94088.)

"We've found as much as 20 to 30 per cent of a typical drafting job to be repetitive," Mr. Abrams explains. "Obviously, the elements are not always identical. But from a graphic arts standpoint, they are the same—easily and quickly reduced, enlarged, photocopied and duplicated.

Architects work on their own projects in the workshop

At Deprotech, architects are introduced to techniques of opaque drafting media, photocopying, enlarging/reducing equipment and offset duplicating, learning first hand how to make the workshop's objectives work for them individually. Mr. Abrams describes those objectives as fourfold: To 1) increase efficiency in contract drawing while cutting operating costs, 2) reduce tedious redundancies in contract drawing production, 3) increase time which can profitably be spent on design with greater control over completion times, and 4) reduce errors and omissions while adding both detail and readability.

Participants bring plans of jobs they are currently working on, including schematics, preliminaries, construction and presentation drawings. The bulk of the workshop involves "hands-on" experience. In fact, several hundred dollars worth of work can be done during the two-day period.

Participants are shown how base drawings are developed and how, through the use of overlays, additional information can be added without replicating previously developed information. (See RECORD, July 1976, pages 55-58, for an overlay drawing technique.)

How these techniques apply to each participant's own plans is reviewed during the next segment of instruction. "It's important for a designer to develop an eye for recognizing redundancies, so that when he starts planning his next project, he'll think graphically as well," Mr. Abrams notes.

An analysis of how drawings should be organized is done before any drafting takes place. A system of base sheets and overlays is then established by determining what information is common to certain drawings.

Once conceptual sketches have been completed, then large-scale drawings of key elements that will appear repeatedly throughout the plans can be made. These elements usually include floor plans, bays, elevations and general systems: heating, air conditioning, electrical and plumbing.

A photo enlarger/reducer is essential

Conceptual sketches then are reproduced to large scale by use of an enlargement/reduction camera. Mr. Abrams employs an A.B. Dick *Design Master* camera (Figure 1) that can enlarge drawings up to 120 per cent or reduce them to as small as 45 per cent. (A number of manufacturers make similar self-contained cameras, according to Mr. Abrams. Also suitable are the process cameras that most reproduction houses use.) The camera reproduces images to desired scale on paper which in turn can be reproduced on photocopying and offset duplicating equipment.

The automatic camera system



Figure 1



Figure 2



Figure 3

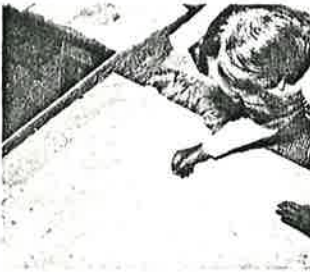


Figure 4

also enlarges or reduces to the desired scale by dialing in the proper percentage figure. With a touch of a button, enlargement or reduction is made. The entire operation takes place in less than a minute, and requires about the same amount of space as a drafting table. The system accommodates documents up to 24 by 36 inches.

Once enlarged and reproduced, conceptual sketches then become base material from which base sheets are made. This is accomplished by using a *nuArc* light table on which key elements are drafted on sheets that have been laid over enlarged conceptual sketches. It is at this point key elements are delineated using chart tape (which produces sharp, black lines for high quality reproduction later on) or by traditional drafting methods.

After key elements have been drawn, they are reduced, usually by 50 per cent. They are then photocopied on a dry toner copier (Figure 2). A "Model 695 Dry Copier," also from A.B. Dick Company, which by nature of its process produces very black copy for sharp line and screened reproduction, is used.

"We use the 695 not only because it produces remarkably black copy, but also because it is one of the few copiers available which reproduces to exact size," Mr. Abrams explains.

Once key repetitive elements have been photocopied, they are cut out and ready to be aligned in various clusters to determine what the best options and combination of options are (Figure 3).

After these key elements have been pasted down (Figure 4) on base sheets, dimensioning, notations and structural framing can be put together using overlays; they can then be reproduced in quantity by offset duplicating or by diazo printing. If more than 50 plans are needed, it is wise to offset duplicate because of the economies involved.

Copiers:

The Convenience Link in the Design-Drafting, Engineering Reproduction Chain

Drawing Creation

The use of the copier as an effective drafting tool has been adopted by a number of architectural firms. Seminars on architectural techniques, run by Ned Abrams, head of Design Production Techniques, Inc., Sunnyvale, California, have been one of the sources which have promoted such applications. Abram's workshop objectives include increased efficiency in contract drawing while cutting operating costs, reduced repetition in contract drawing production, increased time which can be profitably spent on design with greater control over completion time, and reduced errors and omissions with added details and readability.

While the seminar concentrates on use of a variety of reproduction techniques, Abrams explains, "We've found as much as 20 to 30 per cent of a typical drafting job to be repetitive. Obviously, the elements are not always identical-- they vary in size of detail with upside down or reversed views. But, from a graphic arts standpoint, they are the same—easily and quickly reduced, enlarged photocopied and duplicated." Abram's seminars typically use an A.B. Dick Designmaster for element reduction with a complimentary 695 copier to produce the required number of key elements. The Designmaster can reduce elements in any ratio down to 45% of the original. After being photocopied, the elements can be aligned in various clusters to determine the best combinations for the design requirements. After the elements have been arranged in the desired configuration, dimensioning and other notation can be added through overlays and finally produced in quantity by either offset or diazo methods depending on the number of reproductions needed.

Producing the key elements initially on tracing paper or transparency material allows them to be copied in their standard position, then flopped to produce mirror images reflected through both vertical and horizontal axes. This can provide a designer with the flexibility to examine differing configurations quickly without being required to draw and redraw them.

Abrams notes, "We stress the efficiencies of graphic techniques as well as eliminating needless repetition of information that doesn't produce any new knowledge. Architectural plans are drawings which should clearly illustrate to contractors how something should be built. Plans are not intended to be artful exercises in drawing." This seems to be an underlying theme which a number of firms express. Contractors are quite simply interested in plans that are readable and that can be produced economically. With the rise in construction materials, contractors are looking for as much value as they can get from their design dollars. Artistic excellence very often has little bearing on the actual design; it is in a sense the glossy packaging which doesn't really affect the contents. This is not to say that designers and draftsmen should begin turning out sloppy work to save time and money, but rather that each drawing should reflect the purpose for which it is created. The only time a design drawing needs to be a work of art is if it meant to hang in a museum.

Commenting on the assumption that copier and other reprographic techniques might eliminate drafting jobs, Ned Abrams notes "Copiers will not replace draftsmen, but rather will allow draftsmen more time to concentrate on designing, rather than spending endless hours madly drawing lines. The results should be more creativity and greater productivity."

David Lynch, of David Lynch & Associates, Lancaster, Pa., noted the increased productivity in his firm. "Our manpower output had doubled. We originally had six draftsmen, but three of them left for other positions. Now, with the use of copiers and related techniques, we've been able to manage the same workload with half the staff."

Flad & Associates, Madison, Wis., has found that they can use their A.B. Dick 695 to produce clearer copy from drawings reduced on the A.D. Dick 150. According to Administrative Assistant Jim Hornick, "We can produce a denser line and whiter background on the 695 without any scale changes." Their

original intent was to use copiers to reduce their dependence on outside reprographic firms, but they have found that their increased workload capacity has actually created a greater use of service companies at the final stages of drawing production.

A number of firms using copiers had problems at first getting their personnel adjusted to the new techniques. As with any innovation, copiers have to be blended into the work patterns of a particular office. Most firms have found that the first year to six months is spent experimenting with copier applications to find out just what can and cannot be done and how this can effect their own work methods. One means of introducing copier use is to give the copier a name, to *personnelize* it. In this way people can get into the habit of saying "Let George (meaning the copier) do it." This might seem a little silly, but when you consider that the copier is essentially being called upon to act as a repeatable draftsman, the reasoning becomes a little clearer. The bonus comes when you consider that George (the copier) never gets bored, never gets tired and is essentially more accurate at repetitive drawing than would be considered humanly possible with manual drafting.

The ability to change scale in drawings through use of copier reduction capabilities led Donald Prout Associates, Cranston, R.I., to choose the A.B. Dick Designmaster with its continuous reduction range down to 45%. This was particularly useful in creating multiple unit designs, which could be built up from a small number of key elements. It should be noted that many "office-based" copiers do not reproduce copy to exact scale, but often provide 102% of the original, to eliminate any black lines at the copy edges when reproducing letters and other material for distribution. However, scale accuracy as a major determinant in copier applications varies from one firm to another. Some regard reproduction accuracy as critical, while others typically using copiers for initial modifications find that absolute scale is not really vital for their purposes.

THE PAPER PLANE

NEWSLETTER OF DOCUMENT PRODUCTION MANAGEMENT

Editor:
GEORGE S. BORKOVICH

Editorial Advisory Board:
PHILIP M. BENNETT
Department of Engineering,
University of Wisconsin, Madison
LOUIS DI PAOLO
Reprostat Corporation, New York
C. PAGE HIGHFILL, AIA
Highfill-Smith Associates, Richmond
EDGAR POWERS, JR. CSI
Gresham Smith and Partners, Nashville
AUGUST K. STROTZ, AIA
A. K. Strotz & Associates, Tiburon, CA

Editorial Office:
3400 Edge Lane, Thorndale, PA 19372
215 / 384-7262

Subscriptions:
\$60 per year. Foreign overseas
subscriptions, \$72 per year. Checks
must be in U.S. funds, payable to
MRH Associates, Inc.
P.O. Box 11316, Newington, CT 06111
203 / 666-9487

Copyright 1981 by MRH Associates, Inc.
All rights reserved.
Reproduction in whole or part (even
by Xerox) is a no no, but circulation by
air is encouraged.



OPAQUE DRAFTING PROCEDURES

There is a lot of emphasis about overlay drafting and other transparent or translucent drafting techniques. Much of the emphasis is being exerted by reprographic services houses or manufacturers that supply the products required by photographic methods. While overlay drafting has been proven by many firms to be a very cost effective means of producing drawings, it has largely been confined to plan development (eg. floor plans, site plans, etc.). But there are many other kinds of drawings in a set of construction documents, and these drawings can benefit from other procedures, particularly opaque drafting.

Opaque drafting is a cut and paste method, whereby a variety of media can be combined onto a carrier sheet and reproduced in a single exposure via diazo, xerography or photography. However, many firms dismiss the use of opaque drafting because they have been led to believe that it can only be done by using a camera which they consider too expensive or too inconvenient. And that's a falacy that must be overcome. The fact is some firms are using opaque drafting in-house, at a lower cost and they are obtaining excellent results without the use of a camera.

Why the emphasis on opaque drafting? Because its one of many techniques that should be in your production procedures repertoire. But there are some other reasons for which we expect to see its use increase:

1. Firms are tired of the high cost of silver-based photographic methods and are looking for lower cost methods to obtain similar results. Many A/E's haven't learned how to control their costs and they waste expensive polyester and photographic film by using it much like they had used flimsey tracing paper and diazo prints in the past. Others simply refuse to bill their clients for the expenses of reproduction (which should be reimbursable) and wind up absorbing substantial expenses. Also, poor preliminary planning (and in some cases, no planning at all) causes firms to greatly increase their costs of reprographic materials and services.
2. More firms now have the basic in-house tools, like office copiers that produce good black to white contrast and commercial grade contact vacuum printers. Many firms have also switched to ink drafting which produces line weights that don't break apart in the compositing stage. (see THE PAPER PLANE, July '79)



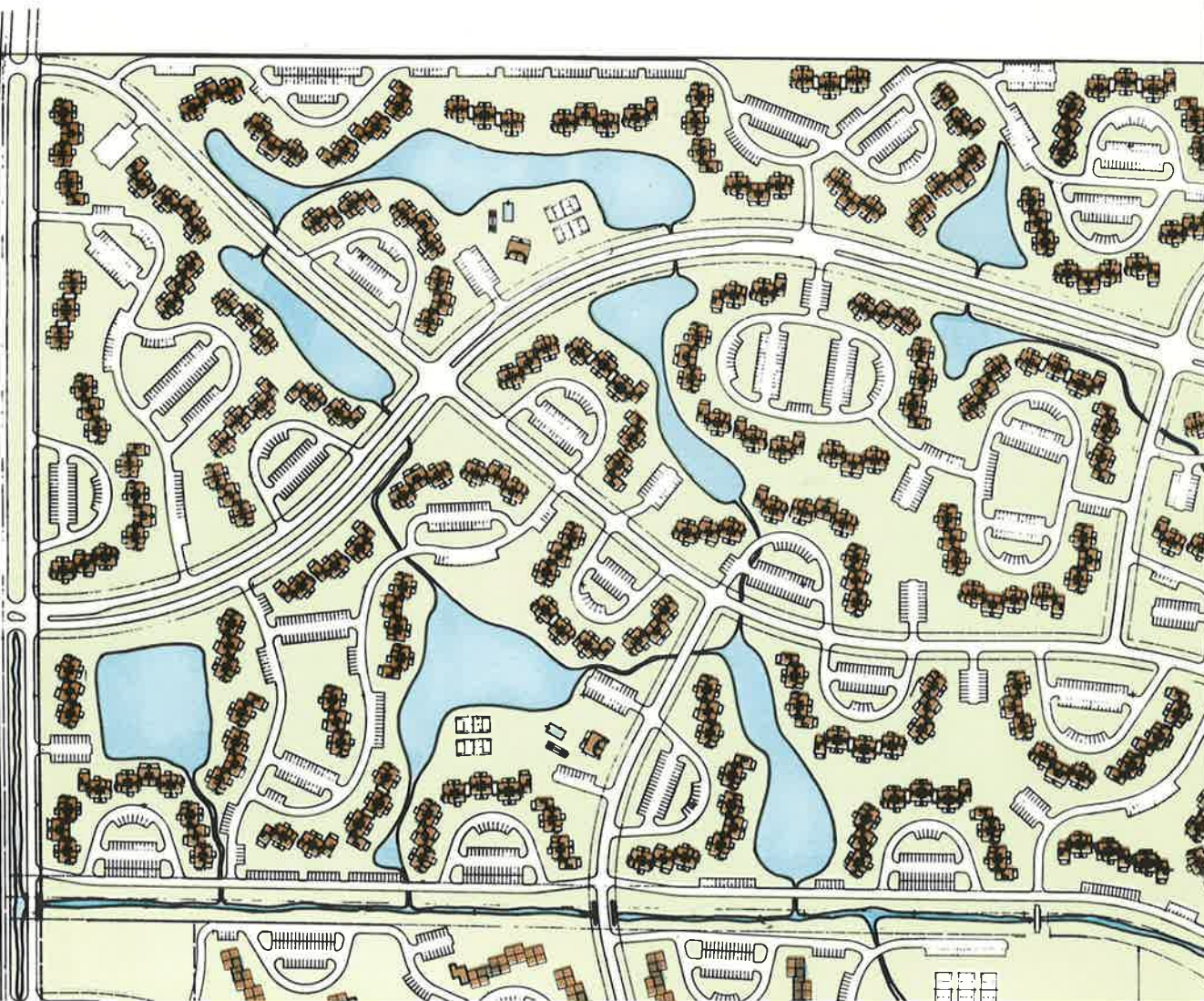
REGISTRATIONS
 CALIF. ARCH. BOARD
 FLA. ARCH. BOARD
 ILL. ARCH. BOARD
 IND. ARCH. BOARD
 IOWA ARCH. BOARD
 MICH. ARCH. BOARD
 MINN. ARCH. BOARD
 N.J. ARCH. BOARD
 N.Y. ARCH. BOARD
 N.C. ARCH. BOARD
 N.D. ARCH. BOARD
 OHIO ARCH. BOARD
 PA. ARCH. BOARD
 S.C. ARCH. BOARD
 TENN. ARCH. BOARD
 TEXAS ARCH. BOARD
 VA. ARCH. BOARD
 WASH. ARCH. BOARD
 WIS. ARCH. BOARD
 WYOM. ARCH. BOARD

STUART LAKES
 DEVELOPMENT FOR MR. JERRY FLICK
 MARTIN COUNTY FLORIDA
NED H. ABRAMS - ARCHITECT
 ARCHITECTURE - SITE PLANNING - CONSULTING - ECONOMICS
 575 BRITTON AVENUE
 SUNNYVALE, CALIFORNIA 94088

LEGEND

- 4 - 2 BR. TOWNHOUSES
- 3 BR. - 1 STORY
- 4 BR. - 1 STORY
- 3 BR. TOWNHOUSE
- 2 - 3 BR. - 1 STORY
- ADULT UNITS

STATE ROAD 723



	LAND AREA PER SURVEY
SEC. 21	363.29 AC.
SEC. 28	203.72 AC.
SUBTOTAL	567.01 AC.
LESS ST. RD. 707A	- 3.04 AC.
LESS ST. RD. 723	- 3.02 AC.
LESS DRAINAGE DITCH	- 14.07 AC.
TOTAL	546.87 AC.

PROPOSED DEVELOPMENT - COMMERCIAL - 50 AC.

SINGLE FAMILY HOUSING (NORTHEAST OF DRAINAGE CANAL)

AREA = 101.25 AC.	
2 BR. TOWNHOUSES	596
3 BR. TOWNHOUSES	164
3 BR. - 1 STORY	25
4 BR. - 1 STORY	15
TOTAL	800 = 7.9 LU/AC.

RECREATION AREA: PARK 11.52 AC.
 PROPOSED AREA FOR NORTH COUNTY CIVIC CENTER: 5.38 AC.

ADULT HOUSING AREA

AREA = 395.62 AC.

1 & 2 BR. TOWNHOUSES & VILLAS (16.2% ARE 1 BR. UNITS)

TOTAL UNITS 3071 = 7.76 LU/AC.

RECREATION AREAS: 9 RECREATION AREAS THROUGHOUT PROJECT

AREA FOR SEWAGE TREATMENT &
WATER PURIFICATION PLANT



ALL LAKES AND CONNECTING STREAMS TO BE PART OF
MEANDERING GREENBELT AREA.
LEGAL DESCRIPTION
PORTIONS OF SECTIONS 21 & 28, TOWNSHIP 37S,
RANGE 41E, MARTIN COUNTY, FLORIDA



H. ABRAMS, REGISTERED ARCHITECT - FLORIDA 4601

SHEET TITLE	
SITE PLAN	
<small>THE PLANS, IDEAS AND DESIGNS SHOWN ON THIS DRAWING ARE THE PROPERTY OF THE ARCHITECT, DEVISED SOLELY FOR THIS CONTRACT. THIS PLAN SHALL NOT BE USED, WHOLE OR IN PART, FOR ANY PURPOSE FOR WHICH IT WAS NOT INTENDED WITHOUT THE WRITTEN PERMISSION OF THE ARCHITECT.</small>	

3			
2			
1			
REVISIONS			DATE
CONSULTANT:			

DESIGNED	MJA
DRAWN	MJA
CHECKED	
SCALE	1/4" = 1' = 400'
DATE	4-27-75
JOB NUMBER	7205
SHEET NUMBER	1

SAN MANUEL, PINAL COUNTY, ARIZONA.

GENERAL DEVELOPMENT PLAN OF NEW TOWN.

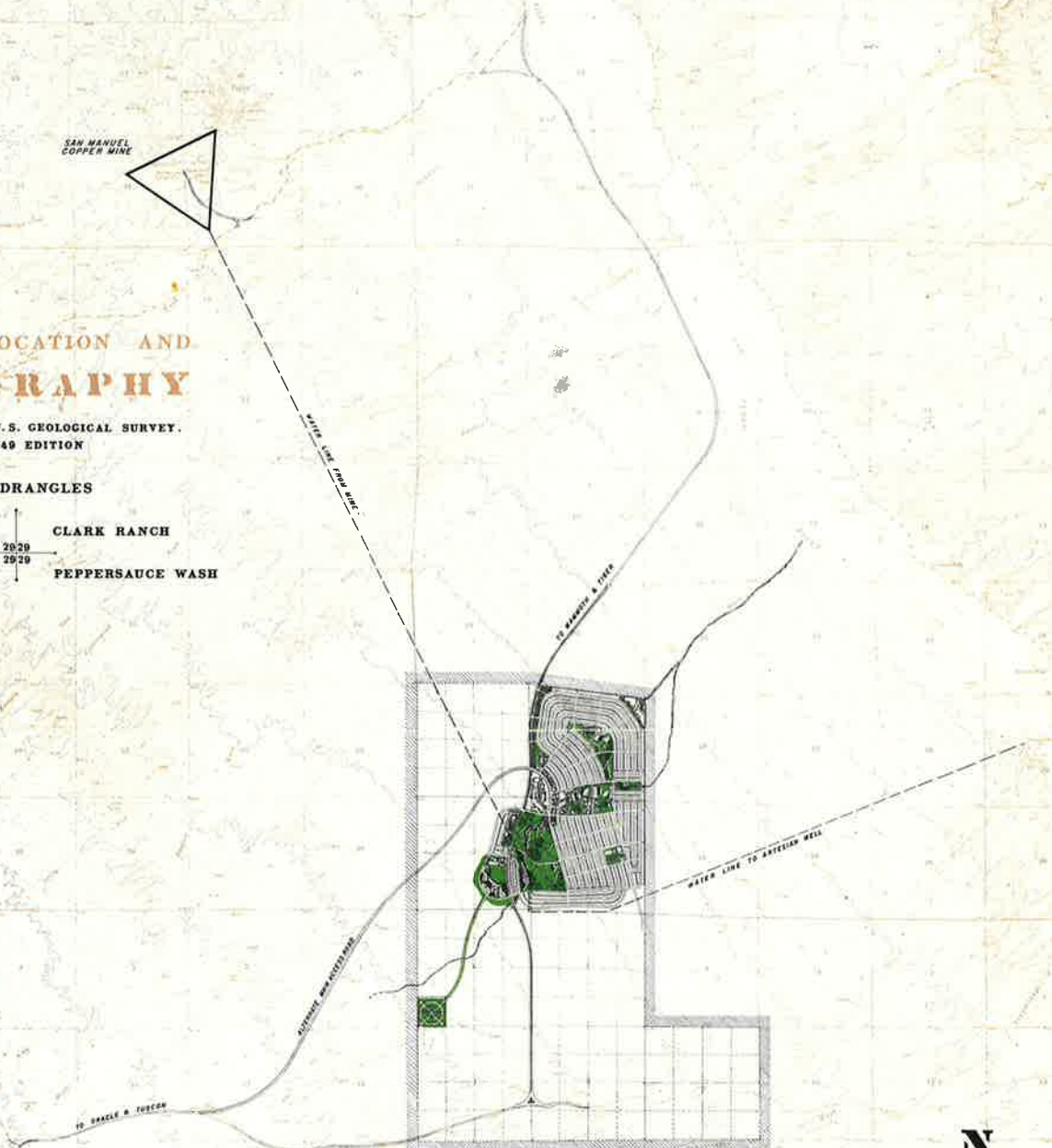
GENERAL LOCATION AND TOPOGRAPHY

TOPOGRAPHY FROM U.S. GEOLOGICAL SURVEY.
1949 EDITION

QUADRANGLES

MAMMOTH	CLARK RANCH
COMPO BONITO	PEPPERSAUCE WASH

SAN MANUEL
COPPER MINE



N

W

E

S

SCALE



for **SAN MANUEL COPPER CORPORATION.**

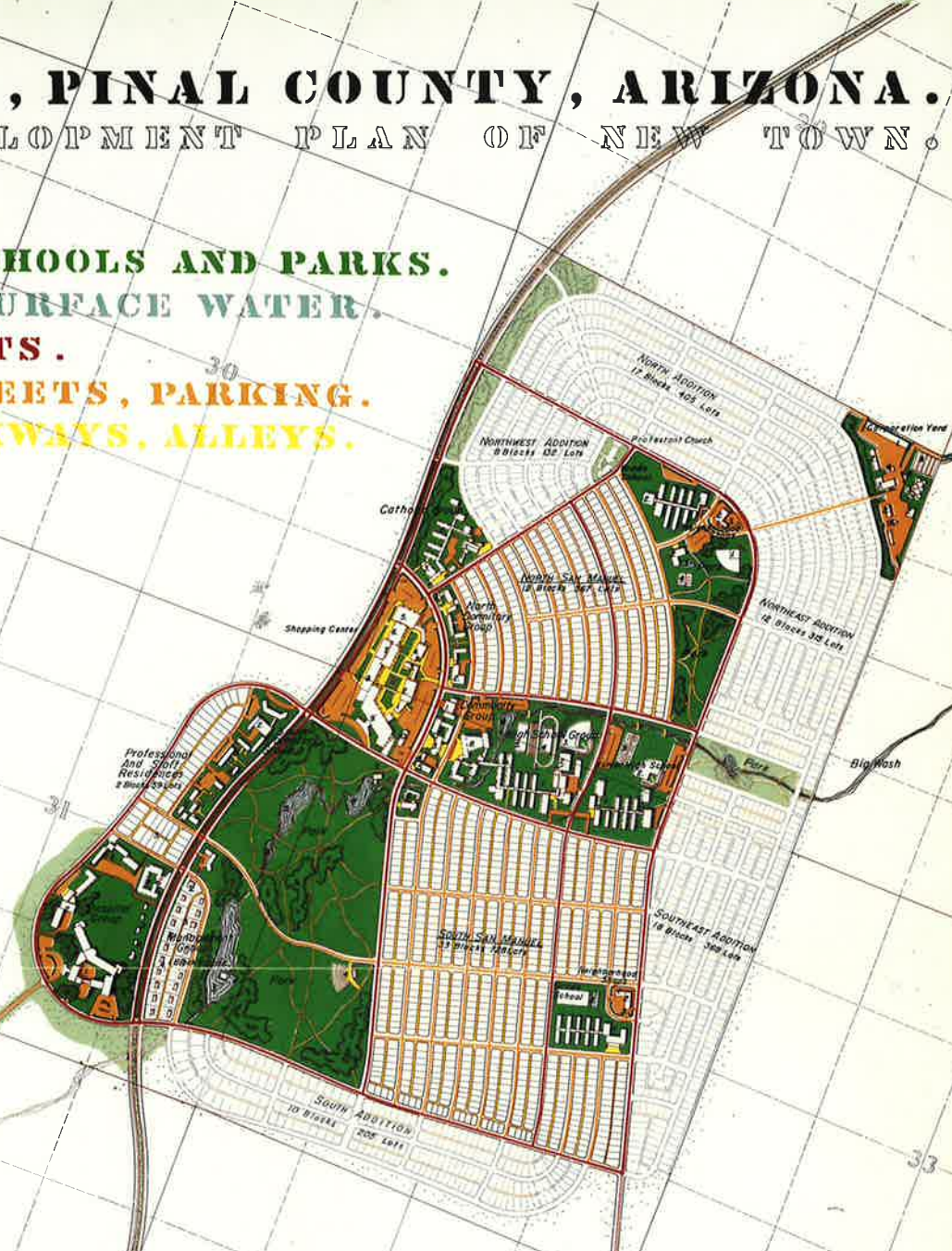
THE UTAH CONSTRUCTION COMPANY, ENGINEERS AND CONTRACTORS, SAN FRANCISCO, CALIFORNIA
NED H. ABRAMS, ARCHITECT AND PLANNING CONSULTANT, SUNNYVALE, CALIFORNIA

SAN MANUEL, PINAL COUNTY, ARIZONA.

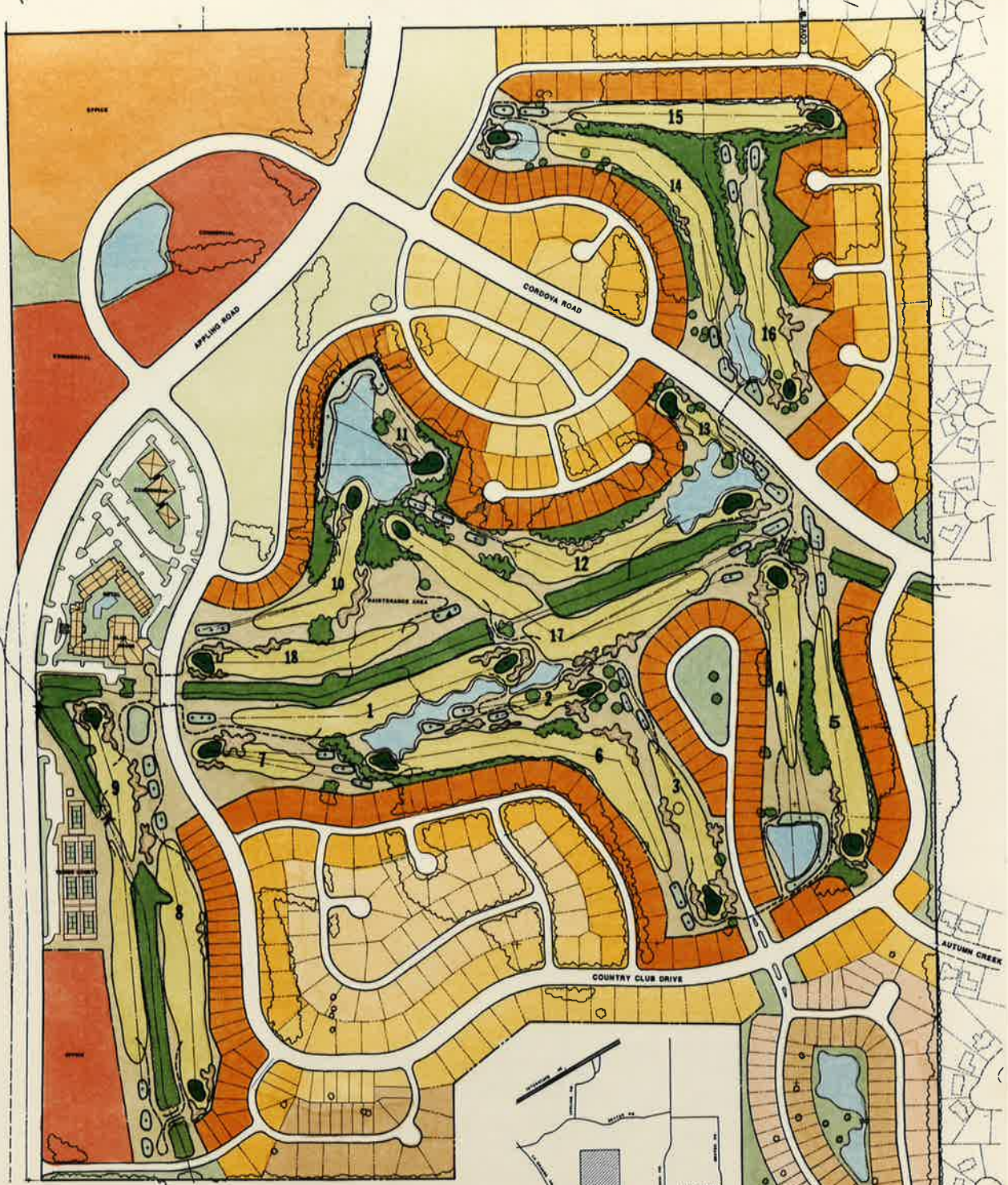
GENERAL DEVELOPMENT PLAN OF NEW TOWN.

PUBLIC AREAS, SCHOOLS AND PARKS.
RESERVOIR AND SURFACE WATER.
ARTERIAL STREETS.
RESIDENTIAL STREETS, PARKING.
PEDESTRIAN WALKWAYS, ALLEYS.

- **MANAGEMENT GROUP**
 - 1. General Manager
 - 2. Assistant General Manager
 - 3. General Superintendent
 - 4. Assistant General Superintendent
- **PROFESSIONAL & STAFF RESIDENCES**
 - 1. Houses for Staff Personnel
 - 2. Detached & Apartments for Teachers & Family Employees
 - 3. Housing for Professional Personnel
- **PARK SOUTH SAN MANUEL**
 - 1. Pump House
 - 2. Underground Reservoir
 - 3. Domestic Water Supply Reservoir
 - 4. Canal
 - 5. Grass Sheds
 - 6. Lota
 - 7. Lota & Swimming Area
 - 8. Bath House
 - 9. Protestant Church
 - 10. Self Help Field
 - 11. Swimming Pool
 - 12. Community House
 - 13. Tennis Courts
- **WATER NORTH SAN MANUEL**
 - 1. Fire Station
 - 2. Court House (Future)
 - 3. City Hall (Future)
 - 4. Post-Office
 - 5. Library
- **HOSPITAL GROUP**
 - 1. Hospital
 - 2. Nurses Residence
 - 3. Doctors Residence
 - 4. Private Clinics (Future)
 - 5. Hospital Administration
 - 6. Assistant Chief Surgeon
 - 7. Chief Surgeon
- **HIGH SCHOOL GROUP (1200 Present) (2000 Future)**
 - 1. High School
 - 2. Gymnasium
 - 3. Self Help Field
 - 4. Post Office Field
 - 5. Practice Field
 - 6. Community Building
 - 7. Boy Scout (Future)
 - 8. Community Theater (Future)
 - 9. Lota
- **JUNIOR HIGH SCHOOL (1200 Present) (2000 Future)**
 - 1. Junior High School
 - 2. Self Help Field
 - 3. Tennis Courts
- **GRADE SCHOOL SOUTH SAN MANUEL (1000 Present) (1000 Future)**
 - 1. School
 - 2. Swimming Pool
- **GRADE SCHOOL NORTH SAN MANUEL (1200 Present) (2000 Future)**
 - 1. School
 - 2. Auditorium (Future)
- **CATHOLIC GROUP**
 - 1. Church
 - 2. Parochial School (Future)
 - 3. Auditorium (Future)
- **SHOPPING CENTER**
 - 1. Drug Store
 - 2. Market
 - 3. Specialty Shops
 - 4. Department Store
 - 5. Bowling Alley (Future)
 - 6. Market (Future)
 - 7. Chain Store (Future)
 - 8. Chain Store (Future)
 - 9. Department Store (Future)
 - 10. Garage & Filling Station
- **NEIGHBORHOOD GROUP-NORTH & SOUTH**
 - 1. Market
 - 2. Service Station
 - 3. Filling Station
- **SOUTH COMMUNITY GROUP**
 - 1. Tobacco Store
 - 2. News Stand
 - 3. Milk Employees Dormitories
 - 4. Dormitory Manager
- **NORTH COMMUNITY GROUP**
 - 1. Milk Employees Dormitories
 - 2. Dormitory Manager
 - 3. Dormitory Manager
- **HOUSING**
 - South San Manuel - 728 Families
 - North San Manuel - 587 Families
 - Total - 1315 Families
 - South Addition - 508 Families (Future)
 - S-E Addition - 132 Families (Future)
 - North Addition - 405 Families (Future)
 - N-E Addition - 315 Families (Future)
 - Total - 1455 Families
 - Grand Total - 2520 Families
- **CEMETERY**
 - 1. Cross & Memorial
 - 2. Workhouses
 - 3. Equipment Garage
 - 4. Office & Personnel
 - 5. Service
 - 6. Milk Plant
 - 7. Stock Pile
 - 8. Stock Pile
 - 9. Storage Disposal Plant
 - 10. Storage Shed



for: **SAN MANUEL COPPER CORPORATION.**
 THE UTAH CONSTRUCTION COMPANY, ENGINEERS AND CONTRACTORS, SAN FRANCISCO, CALIFORNIA
 NED H. ABRAMS, ARCHITECT AND PLANNING CONSULTANT, SUNNYVALE, CALIFORNIA



GOLF COURSE SCORE CARD

HOLE NO.	DISTANCE			PAR	HOLE NO.	DISTANCE			PAR
	YDS.	M.	YDS.			YDS.	M.	YDS.	
1	267	317	387	4	10	290	375	382	4
2	299	350	420	4	11	317	390	416	4
3	338	398	468	4	12	340	415	440	4
4	400	460	530	5	13	363	438	463	4
5	462	522	592	5	14	386	461	486	4
6	524	584	654	5	15	409	484	509	4
7	586	646	716	5	16	432	507	532	4
8	648	708	778	5	17	455	530	555	4
9	710	770	840	5	18	478	553	578	4
10	772	832	902	5					
11	834	894	964	5					
12	896	956	1026	5					
13	958	1018	1088	5					
14	1020	1080	1150	5					
15	1082	1142	1212	5					
16	1144	1204	1274	5					
17	1206	1266	1336	5					
18	1268	1328	1398	5					
TOTAL	3478	3938	4398	72					

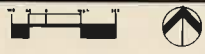


VICINITY MAP

THE CORDOVA CLUB
CORDOVA, TENNESSEE

A DEVELOPMENT BY: **EBERHAY & ASSOCIATES**
A KANSAS CITY, MISSOURI FIRM

Pickering
GOLF COURSE ARCHITECTS
DESIGNERS AND LAND PLANNERS
MARTIN ORRILL, GOLF COURSE ARCHITECT



MACDON ROAD

- [54] **CONCRETE STORAGE TANK AND METHOD OF MAKING SAME**
- [76] Inventor: **Ned H. Abrams**, 1363 Zurich Terrace, Sunnyvale, Calif. 94087
- [21] Appl. No.: **604,958**
- [22] Filed: **Aug. 15, 1975**
- [51] Int. Cl.² **E02D 27/00**
- [52] U.S. Cl. **52/169.7; 52/192; 52/247; 52/259; 52/294; 52/378**
- [58] Field of Search **52/192-196, 52/224, 245, 259, 293, 294, 295, 378, 319, 247, 169, 258**

[56] **References Cited**
U.S. PATENT DOCUMENTS

1,425,117	8/1972	Lynde	52/259 X
2,382,171	8/1945	Pomykala	52/245
2,746,283	5/1956	Abrams	52/259 X
3,180,057	4/1965	Pritzker	52/293 X
3,195,312	7/1965	Rumsey, Jr.	52/293 X
3,233,376	2/1966	Naillon et al.	52/264
3,289,366	12/1966	Abrams	52/174

OTHER PUBLICATIONS

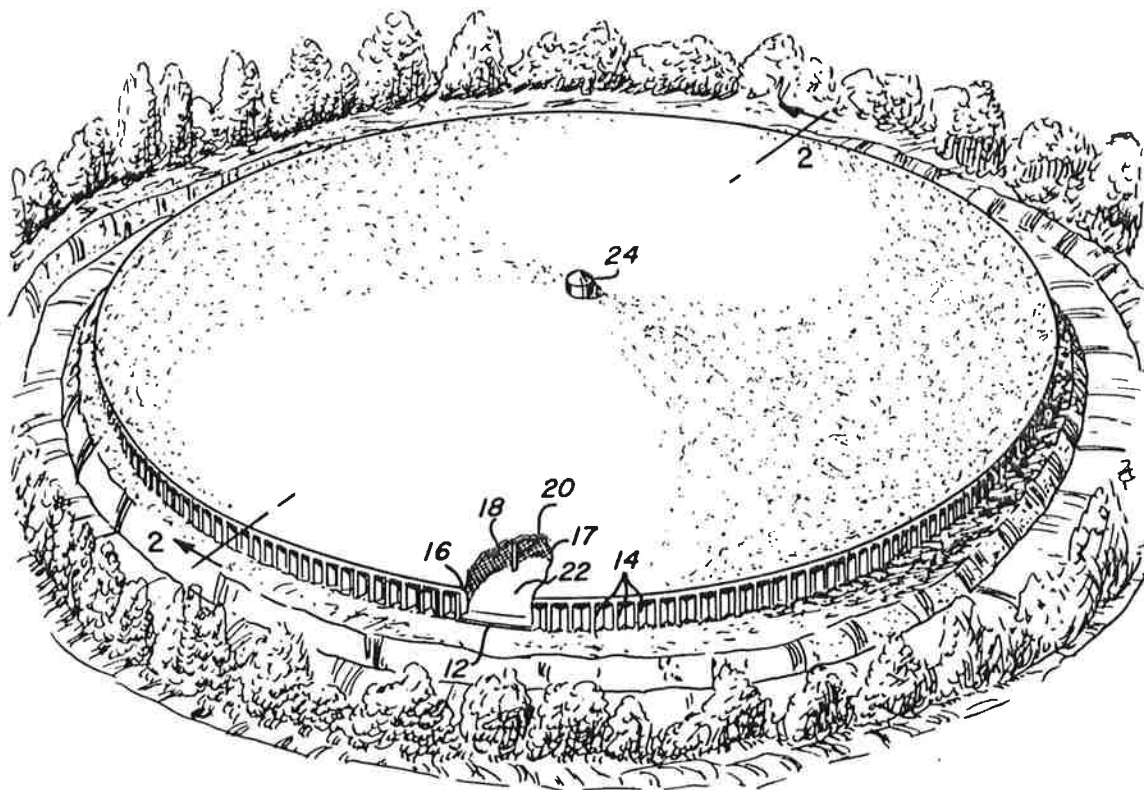
"Big Prestressed Tanks Built With Precast Panels," *Civil Engineering*, 9-1955, vol. 25, No. 9, pp. 44-46.

Primary Examiner—Price C. Faw, Jr.
Assistant Examiner—Carl D. Friedman
Attorney, Agent, or Firm—Boone, Schatzel, Hamrick & Knudsen

ABSTRACT

[57] A concrete storage tank for storing large quantities of fluids, grains or other materials and including a circular tank sidewall formed of a plurality of vertically elongated wall elements having a generally Y-shaped transverse cross-section, a slab floor, a slab roof, a perimeter footing, a perimeter tie beam, and a central tower for access and for housing pumping equipment. In one method of construction the wall elements are formed in place while in an alternative method of construction, the elements are prefabricated at a remote location and then moved into place.

11 Claims, 14 Drawing Figures



Dec. 6, 1966

N. H. ABRAMS

3,289,366

STRUCTURAL MEMBERS AND STRUCTURES

Filed Jan. 2, 1962

10 Sheets-Sheet 1

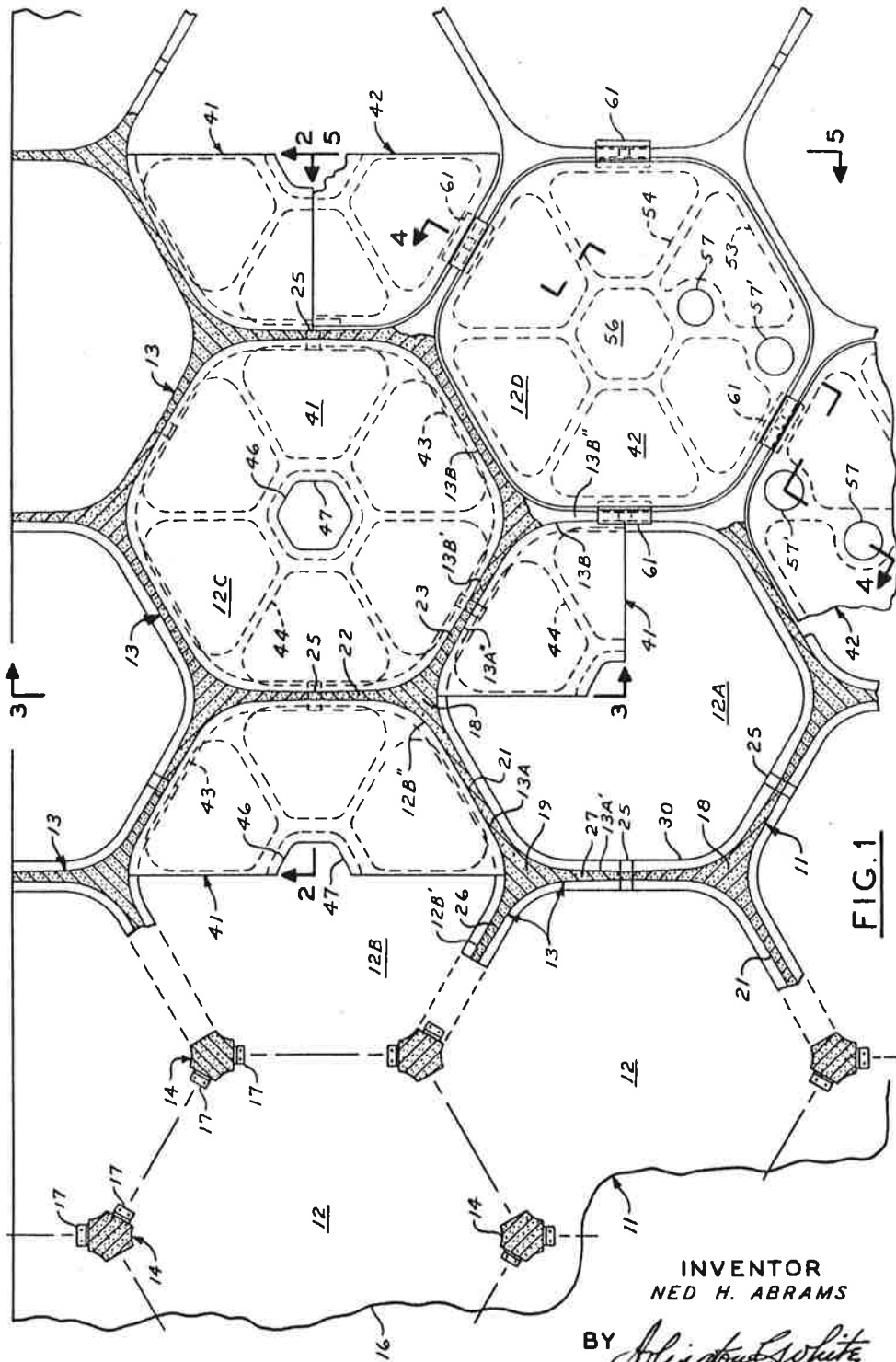


FIG. 1

INVENTOR
NED H. ABRAMS

BY *Wilmington White*
ATTORNEY

210

2,746,283



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Whereas

Ned H. Abrams,

of

Sunnyvale,

California,

PRESENTED TO THE **Commissioner of Patents** A PETITION PRAYING FOR THE GRANT OF LETTERS PATENT FOR AN ALLEGED NEW AND USEFUL INVENTION THE TITLE AND A DESCRIPTION OF WHICH ARE CONTAINED IN THE SPECIFICATION OF WHICH A COPY IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND COMPLIED WITH THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED, AND

Whereas

UPON DUE EXAMINATION MADE THE SAID CLAIMANT IS ADJUDGED TO BE JUSTLY ENTITLED TO A PATENT UNDER THE LAW.

NOW THEREFORE THESE **Letters Patent** ARE TO GRANT UNTO THE SAID

Ned H. Abrams, his heirs

OR ASSIGNS

FOR THE TERM OF SEVENTEEN YEARS FROM THE DATE OF THIS GRANT

RIGHT TO EXCLUDE OTHERS FROM MAKING, USING OR SELLING THE SAID INVENTION THROUGHOUT THE UNITED STATES.

In testimony whereof I have hereunto set my hand, and caused the seal of the Patent Office to be affixed, at the City of Washington this twenty-second day of May, in the year of our Lord one thousand nine hundred and fifty-six, and of the Independence of the United States of America the one hundred and eightieth.

Attest:

E. H. Kean
Attesting Officer.

Robert C. Weir
Commissioner of Patents.

ABRAMS' STRUCTURAL CONCEPT

(Steel Economies for Hotel Suite/Office Complex Construction)

A proprietary structural concept developed and copyrighted by Ned H. Abrams, a California Architect, and confirmed by Skilling, Ward, Rogers & Barkshire, Seattle, WA, (structural engineers for the World Trade Center), which reduces the usual tonnage of steel by seven (7) lbs per square foot less than the standard usage. Morrison-Knudsen Construction Company of San Francisco has confirmed these savings.

The structural system is composed of 30' wide by 82' deep bays, and the exterior walls are staggered to form two (2) corner windows for each 30' of perimeter on the exterior and in the Atrium.

Each floor has a capability of increasing or decreasing any of the uses with the neighboring uses if economics determine an adjustment desirable between uses on the same floor.

The exterior is non-structural and can be of any treatment, or combination of treatments, resisting wind pressure on only the exterior wall itself.

There are significant savings in curtain walls since only 60% of the window surface is exterior, with commensurate savings in wall treatment of the atrium, plus mechanical and electrical savings as well.

Each floor would contain two or more banks of elevators to serve multiple users; i.e. office, hotel, condominium, retirement center (or hospital) and retail - all separate and independent of each other, with security for the occupants (or users), and with large spaces such as banks and insurance companies require. Large retail establishments may have entire floors with no access from other users' elevators.

There could be collateral convention spaces, additional retail and parking at the lower levels, extending as far as economics, land, or politics dictate.

For a seven story building, the steel was calculated to be 7# per sq. ft. at a San Francisco Index of 1.473 with frames @ \$1100. per ton and beams and joists @ \$900. per ton; with deck electrified at a west coast cost of \$6.67 sq. ft. for the floor system, excluding the concrete topping on steel decking. The comparable index in South Bend is 1.042, based on 1986 Walker Reference Book. Floor-to-floor height is 12'3". Recently designs have been generated for a height of 1000' in seismic zone 4 (San Francisco), with a building base-to-height ratio of less than 1:5 in the narrow dimension and 1:2-1/2 in the wide dimension, the differences being dictated by City block dimension of 200 x 300 feet.

The economy of this concept would have equal application for the basement and parking under the building and which would be computed when design criteria are available.

Mr. Abrams is licensed to practice architecture in 26 States and is also the holder of several Patents for concrete construction. Royalties for the use of this concept are based upon gross floor area; \$.50 per square foot of constructed area. Schematic drawings to adapt users' requirements to the structural system are available at an additional charge of \$.50 per sq. ft. of gross area. Schematics will be in sufficient detail to allow work to proceed to preliminary drawings, but will not include or develop exterior treatment designed by the Architect of record.

Note: At \$1,000./ton for steel, savings are \$3.50 sf, or 3-1/2 times the cost of royalties plus schematics. Additional savings accrue in foundations and mechanical and electrical systems.

3/87

SECTION 5: EXHIBITS (PHOTOGRAPHIC)

List the photographs that follow this page:

Project	Location	Year of Completion
1. General Mills Cereal Plant	Lodi, CA	1946
2. Escondido V Married stud. hsg.	Stanford Univ. Palo Alto, CA	1971 1988 photo
3. Saratoga Gardens Apartment Complex	San Jose, CA	1963 1989 photo
4. Saratoga Gardens	"	1963 1989 photo
5. Saratoga Gardens	"	"
6. Saratoga Gardens	"	"
7. Saratoga Gardens	"	"
8. Saratoga Gardens	"	"
9. Life's Garden Senior Housing	Sunnyvale, CA	1975 1989 photo
10. Life's Garden Dining Hall	"	"
11. " "	"	"
12. " "	"	"
13. Crawford TownHomes	Sunnyvale, CA	1988
14. " " "	"	1989 photo
15.		



ARCHITECT OF RECORD Ned H. Abrams, AIA
DESIGNER Ned H. Abrams
PROJECT General Mills Cereal Plant, Lodi, CA
DATE 1946
AUTHORSHIP: CHECK ONE

- Solely Responsible for Design
- Largely Responsible for Design
- Design Under Direction of Nominee
- Nominee's Firm Executed Design
- Other, explain





ARCHITECT OF RECORD NED H. ABRAMS, A.I.A.
DESIGNER NED H. ABRAMS
PROJECT Saratoga Gardens, San Jose, CA
DATE 1963
AUTHORSHIP: CHECK ONE

- Solely Responsible for Design
- Largely Responsible for Design
- Design Under Direction of Nominee
- Nominees Firm Executed Design
- Other, explain



ARCHITECT OF RECORD NED H. ABRAMS, A.I.A.
DESIGNER NED H. ABRAMS
PROJECT Saratoga Gardens San Jose, CA
DATE
AUTHORSHIP: CHECK ONE

- Solely Responsible for Design
- Largely Responsible for Design
- Design Under Direction of Nominee
- Nominees Firm Executed Design
- Other, explain



ARCHITECT OF RECORD NED H. ABRAMS, A.I.A.
DESIGNER NED H. ABRAMS
PROJECT - Saratoga Gardens, San Jose, CA
DATE 1963
AUTHORSHIP: CHECK ONE

- Solely Responsible for Design
- Largely Responsible for Design
- Design Under Direction of Nominee
- Nominees Firm Executed Design
- Other, explain



ARCHITECT OF RECORD NED H. ABRAMS, A.I.A.
DESIGNER NED H. ABRAMS
PROJECT Saratoga Gardens, San Jose, CA
DATE 1963
AUTHORSHIP: CHECK ONE

- Solely Responsible for Design
- Largely Responsible for Design
- Design Under Direction of Nominee
- Nominee's Firm Executed Design
- Other, explain



ARCHITECT OF RECORD NED H. ABRAMS, A.I.A.
DESIGNER NED H. ABRAMS
PROJECT Saratoga Gardens, San Jose, CA
DATE 1963
AUTHORSHIP: CHECK ONE

- Solely Responsible for Design
- Largely Responsible for Design
- Design Under Direction of Nominee
- Nominee's Firm Executed Design
- Other, explain



ARCHITECT OF RECORD NED H. ABRAMS, A.I.A.
DESIGNER NED H. ABRAMS
PROJECT Saratoga Gardens San Jose, CA
DATE
AUTHORSHIP: CHECK ONE

- Solely Responsible for Design
- Largely Responsible for Design
- Design Under Direction of Nominee
- Nominees Firm Executed Design
- Other, explain



ARCHITECT OF RECORD NED H. ABRAMS, A.I.A.
DESIGNER NED H. ABRAMS
PROJECT LIFE'S GARDEN, Entrance
DATE 1975
AUTHORSHIP: CHECK ONE

- Solely Responsible for Design
- Largely Responsible for Design
- Design Under Direction of Nominee
- Nominee's Firm Executed Design
- Other, explain



ARCHITECT OF RECORD NED H. ABRAMS, A.I.A.
DESIGNER NED H. ABRAMS
PROJECT LIFE'S GARDEN, Dining Hall
DATE 1975
AUTHORSHIP: CHECK ONE

- Solely Responsible for Design
- Largely Responsible for Design
- Design Under Direction of Nominee
- Nominees Firm Executed Design
- Other, explain



ARCHITECT OF RECORD NED H. ABRAMS, A.I.A.
DESIGNER NED H. ABRAMS
PROJECT LIFE'S GARDEN, Senior Housing, Sunnyvale, CA
DATE 1975
AUTHORSHIP: CHECK ONE

- Solely Responsible for Design
- Largely Responsible for Design
- Design Under Direction of Nominee
- Nominee's Firm Executed Design
- Other, explain



ARCHITECT OF RECORD NED H. ABRAMS, A.I.A.
DESIGNER NED H. ABRAMS
PROJECT LIFE'S GARDEN, Typical Elevation
DATE 1975
AUTHORSHIP: CHECK ONE

- Solely Responsible for Design
- Largely Responsible for Design
- Design Under Direction of Nominee
- Nominees Firm Executed Design
- Other, explain



ARCHITECT OF RECORD NED H. ABRAMS, A.I.A.
DESIGNER NED H. ABRAMS
PROJECT CRAWFORD TOWNHOMES, SUNNYVALE, CA
DATE 1988 (street-scape)
AUTHORSHIP: CHECK ONE

- Solely Responsible for Design
- Largely Responsible for Design
- Design Under Direction of Nominee
- Nominees Firm Executed Design
- Other, explain



ARCHITECT OF RECORD NED H. ABRAMS, A.I.A.
DESIGNER NED H. ABRAMS
PROJECT CRAWFORD TOWNHOMES, SUNNYVALE, CA
DATE 1988 (detail)
AUTHORSHIP: CHECK ONE

- Solely Responsible for Design
- Largely Responsible for Design
- Design Under Direction of Nominee
- Nominee's Firm Executed Design
- Other, explain

SECTION 6: DECLARATION OF AUTHORSHIP


The following certification must be signed by anyone in possession of full knowledge concerning each separate project illustrated in the photographs. This might be the chapter president, a member of the Executive Committee of the chapter, a partner of the nominee, or even the nominee. In partnership, the signature of another would be most significant. Key the various statements below to specific exhibits.

The accompanying photographs show examples of work with which the nominee's connection was as follows:

- The nominee was solely responsible for the design.
 The nominee was largely responsible for the design.
 The design was under the direction of the nominee.
 The nominee's firm executed the design.

(If the above statements do not adequately describe the nominee's participation in any of the projects illustrated in the photographs, add a brief original statement[s] of authorship below.)

The Nominee was solely responsible for the design of all Projects numbered
1 through 14. His firm executed the entire design.

Signed  Title Architect, Planner, Author
 Name of Nominee NED H. ABRAMS, A. I. A.

THE PENNSYLVANIA STATE UNIVERSITY

101 ENGINEERING "A" BUILDING
UNIVERSITY PARK, PENNSYLVANIA 16802

College of Engineering
Department of Architectural Engineering

Area Code 814
865-6394

January 2, 1970

Mr. Ned H. Abrams
Ned H. Abrams and Associates
Architects and Planning Consultants
575 Britton Avenue
Sunnyvale, California 94088

NED, glad you enjoyed our "party". I can now say with a great deal of pride, that everyone I have talked to also enjoyed the party. Wednesday, I sent you copies of some of the first letters received to show that the colloquy was appreciated by many.

If you don't know it by now, you can rest assured that your presentation was one of the highlights of the colloquy. You did a masterful job at the presentation. The foldout boards worked out beautifully, both on the stage and in the permanent display area.


Glad to get your letter of December 19. Since receiving it I have taken slides of various parts of the exhibit panels. A set of duplicate slides are being prepared for you.

The exhibit material is repacked in the same cardboard container and is being sent to Harry Golemon today. Not hearing from Bob Koehler for a few days leads me to believe that he did not wish to use some of the exhibit documents for illustrations as you suggested in your letter.

Glad to hear you had the opportunity to talk to Pearce and Pearce's employees. You may be interested to know that I wrote to Jim Cowan and sent him a photocopy of a page out of my records showing I had mailed an invitation to Steve Richardson on October 29, 1969. I hope they find it just to prove to me that it was received.

Best of luck on your presentation at the North Carolina convention.

Sincerely,



C. Herbert Wheeler, Jr., AIA
Architect and Associate Professor
of Architectural Engineering

CHW:djl

D A L T O N D A L T O N L I T T L E
ARCHITECTS ENGINEERS PLANNERS THE ARCADE CLEVELAND OHIO 44114

December 19, 1969

Mr. Ned H. Abrams, A.I.A.
575 Britton Avenue
Sunnyvale, California 94088

Dear Mr. Abrams:

Mr. Art Welker, General Manager of Dalton-Dalton-Little, attended the "Emerging Techniques of Practice Management" colloquy at Penn State and was very impressed by your presentation. The total "Design System" you discussed was the highlight of the entire meeting as far as he was concerned.

One portion of your presentation dealt with a computer program for processing the mathematics in conjunction with an evaluation of the basic economics of the mix of different apartment compositions, of the varieties of each type, and the cost and economics relative to rent, expenses and capitalization.

He was of the impression that this program may be available for sale or lease. If it is, would you please send me information on the cost and also more detailed information on the program itself.

Very truly yours,

DALTON-DALTON-LITTLE



Irving I. Budish, Principal

IIB:tam

BINDON | WRIGHT & PARTNERS
ARCHITECTS

December 30, 1969

Mr. Ned H. Abrams
575 Britton Avenue
Sunnyvale, California 94088

Dear Mr. Abrams:

Everytime I attend one of Herb Wheeler's group meetings, I know, in my case, that there is much more received than given.

This is an indication of appreciation for the effort you put forth in preparation and the sharing of the fruits of your experiences. The future of the profession rests on those who are willing to share.

Best wishes for 1970.

Yours very truly,



Elton C. Gildow

ECG:bs

AFCK Associates

Architecture

Richard I. Arch
F. Russell Noyes
Antonio Arch
Edward Menefee
Sara Scott
David Matheson
Ned Dutton
Leslie Brown
Vincent Bhatti
Robert Jensen

Wayne Shattuck
Richard Lutz
Juanita Moore
Elaine Miller
Eleanor Harlow
Carolee New
Michael Smith
Yusef Sarantis
Jon Carlsten

1001 San Antonio St. N.W.
Atlanta, Georgia 30308
1979 (404) 522-9700

April 30, 1979

Mr. Ned Abrams
Deprotech
95 First Street
Suite 200
P. O. Box 417
Los Altos, CA 94022

Dear Ned:

After we parted at the airport at Madison, I remembered that I probably never thanked you for helping me (and the rest of us here) take such giant leaps in the way we do our production work. It gives me a good feeling to be at a meeting like the one in Madison and realize that we are near the top in the way we do things.

It was also good to see you and get some fresh ideas.

Again, thank you, and keep in touch.

Russ Holpus

Russ Holpus



September 11, 1979

Mr. Ned H. Abrams, AIA
Ned H. Abrams Architect
95 First Street, Suite 200
Los Altos, CA 94022

Dear Ned:

On behalf of the University of Wisconsin-Extension's Department of Engineering, I would like to express our appreciation for your continued effort toward making a tremendous success out of the Austin institute on WORKING DRAWING PRODUCTION SYSTEMS.

This southwest program was without question one of our best programs for total participation and exchanges of many unique experiences. Each participant's willingness to exchange ideas added a very positive contribution to the total program. Many personal discussions with enrollees and their program evaluations indicate that this program did fulfill the needs expressed by the Texas Society of Architects.

Your continued high level performance and willingness to improve our program is greatly appreciated by both participants and University Extension. As Program Director, I would also like to express my thanks for your response to the many requests that were presented to you during the past few months. To express our gratitude, we have enclosed a speaker's certificate, a final roster of seminar leaders and conferees, and a gift that will be forwarded under separate cover.

Thanks again for sharing your experience in working drawing production with our participants. I will look forward to future communication on new ideas in architecture and production systems.

Thanking you,

Philip M. Bennett
Program Director

PMB:Imo
Enclosures

P.S. Course evaluations were received from 78 participants who rated the program as follows: 40 excellent; 30 good; 2 average. A real tribute to your presentation, Ned.

UWEX UNIVERSITY OF WISCONSIN—EXTENSION

432 NORTH LAKE STREET MADISON, WI 53706

Engineering & Applied Science

Tel: (608) 262-2061

professional development



April 22, 1983

Ned H. Abrams
President
Design Production Techniques
95 First Street, Suite 200
Los Altos, CA 94022

Dear Ned:

Thank you for making another excellent presentation to our participants in the 1983 "WORKING DRAWING PRODUCTION" institute. Your valuable contribution of learning experiences has helped to expand the knowledge of many design professionals starting with computers.

Our program feedback indicates that your subject area was covered at a high professional level of instruction (Rated 4.1 = Very Good). The combined efforts of our instructional team helps to make this continuing education program a real success. Your willingness to participate in this program is most appreciated by both enrollees and University-Extension. To express our gratitude, we have enclosed a speaker's certificate, a final roster of seminar leaders and conferees, and a gift that will be forwarded under separate cover.

Ned, we all appreciate your continued leadership in Professional Development. I look forward to our next opportunity to communicate in continuing education.

Thanking you,

A handwritten signature in cursive script that reads "Phil".

Philip M. Bennett
Program Director

PMB:jmv

Enclosures

P.S. Your boards were mailed and the continuing education credits, "CEU's", will follow shortly.



THE AMERICAN INSTITUTE OF ARCHITECTS

January 13, 1978

Mr. Ned H. Abrams, AIA
845-D Stuart Drive
Sunnyvale, CA 94086

Dear Mr. Abrams:

It is with real personal pleasure that I express to you the appreciation of the AIA Board of Directors for your service to the Production Procedures Task Force this past year. The vitality of the AIA derives in great measure from unselfish services like that rendered by you and your task force.

As you know, all members' term appointments expired at the end of 1977.

We look forward to your continuing support and interest in AIA activities. I also hope that you will apply your special experience so as to exert a strong influence in chapter and state AIA work in your community.

Sincerely,

A handwritten signature in cursive script that reads "John M. McGinty".

John M. McGinty, FAIA
Immediate Past President



THE AMERICAN INSTITUTE OF ARCHITECTS

December 10, 1977

Mr. Ned Abrams, AIA
845-D Stewart Dr.
Sunnyvale, CA 94088

Dear Mr. Abrams:

I am pleased to inform you that the AIA Board of Directors has approved your appointment as a Member of the 1978 Practice Management Committee. I am certain that you will find your service to be an informative, enriching experience.

The issues and tasks to be addressed are indicated on the enclosed charge. Meetings will be held at AIA Headquarters in Washington, DC, and are usually of two days' duration. To aid you in your planning, the number of meetings scheduled during 1978 is indicated in the enclosed, with the actual dates entered where known. A meeting call, a roster of those accepting appointments, and further information will be sent to you in advance of the first meeting.

Attendance at scheduled meetings will be at your own expense, except for lunches provided by the AIA on meeting days.

Acceptance of this appointment will be assumed unless we are notified to the contrary. I appreciate your willingness to serve, should you accept the appointment, and I look forward to working with you during the coming year.

Yours sincerely,

Elmer E. Botsai, FAIA
President



THE AMERICAN INSTITUTE OF ARCHITECTS

November 30, 1975

Ned Abrams, AIA
575 Britton Avenue
Sunnyvale, California 94086

Dear Mr. Abrams:

I am pleased to inform you that the AIA Board of Directors has approved your appointment as a member of the Project Management Committee for 1976.

National committees develop the issues and formulate the recommendations for national AIA policy, and I am certain you will find your service on the committee to be an informative, enriching experience.

I am enclosing a memorandum which describes the charge of your committee and the expectations and responsibilities of its members. You may expect further information concerning committee activities for 1976 shortly. In the meantime, should you have any questions, please contact us here at the Institute.

I appreciate your willingness to serve on the committee, and I look forward to working with you during the coming year.

Yours sincerely,

Louis de Moll, FAIA
President-Elect

Enclosure



THE AMERICAN INSTITUTE OF ARCHITECTS

December 4, 1976

Mr. Ned H. Abrams, AIA
845-D Stewart Drive
Sunnyvale, CA 94086

Dear Mr. Abrams:

I am pleased to inform you that the AIA Board of Directors has approved your appointment as a Member of the 1977 Production Procedures Task Force. I am certain that you will find your service to be an informative, enriching experience.

The issues and tasks to be addressed are indicated on the enclosed charge. Meetings will be held at AIA Headquarters in Washington, DC, and are usually of two days' duration. To aid you in your planning, the number of meetings scheduled during 1977 is indicated in the enclosed, with the actual dates entered where known. A meeting call, a roster of those accepting appointments, and further information will be sent to you in advance of the first meeting.

Your expenses for attending scheduled meetings will be reimbursed in accordance with Institute policy. Reimbursement is based on roundtrip tourist air fare, related surface transportation, and a maximum allowance of \$35 for each meeting day toward hotel and meal expenses.

Acceptance of this appointment will be assumed unless we are notified to the contrary. I appreciate your willingness to serve, should you accept the appointment, and I look forward to working with you during the coming year.

Yours sincerely,

A handwritten signature in cursive script that reads "John M. McGinty".

John M. McGinty, FAIA
President

P.S. Your appointment to the Production Procedures Task Force also includes an appointment as a member of the Project Management Committee. Charges to both are enclosed. Attendance at the two meetings of the committee will be on a non-funded basis. Attendance at the third meeting of the task force only will be on a fully-funded basis as indicated in the third paragraph above.

The VVCR Partnership

Architecture Engineering Planning

R. Randall Vosbeck, AIA

720 North Saint Asaph Street
Alexandria Virginia 22314
Telephone 703 549-9200

26 April 1978

Mr. Ned Abrams, AIA
845 D Stewart
Sunnyvale, California 94088

Dear Ned:

Many thanks for the outstanding program you conducted for the Soviet delegation on April 13th. I am particularly sorry that an emergency arose that prevented my being with the group as all reports that I received indicated that your presentation was outstanding. The Soviet delegation told me on their return that they were most pleased to learn of the techniques and equipment that you showed them. I know that GSA joins me in extending our most sincere thanks for your part in this program. I do hope that I will have the opportunity to visit your office sometime in the future.

Sincerely,



R. Randall Vosbeck, FAIA

RRV/bl

STANFORD UNIVERSITY

STANFORD, CALIFORNIA 94305

Area Code 415 321-2300

OFFICE OF THE
VICE-PRESIDENT FOR BUSINESS AFFAIRS

November 11, 1970

United Homes Corporation
P.O. Box 3047
1220 South 356th Street
Federal Way, Washington 98002

Gentlemen:

I am pleased to inform you that the Stanford University Board of Trustees has approved the selection of your proposal as the winner from among eighteen proposals for the design and construction of student apartments in Escondido Village.

The review and selection process was a difficult task for the University staff and committees, as there were many excellent proposals. However, the judges were unanimous in selecting your proposal as the one which satisfied more of the University's requirements than any other proposal.

A great deal of credit undoubtedly belongs to Mr. Ned H. Abrams, your architect, for his expert site planning and building design. In addition, we have been most favorably impressed with the professional abilities and attitudes on the part of Mr. Kahn and Mr. Abrams.

We are preparing a draft of an agreement covering the preparation by you of final working drawings and specifications for the project. We hope to submit a copy for your review and comment before the end of this week.

Sincerely yours,



D.B. Adams
Business Manager

DBA/EAS/cb

cc: Mr. Abrams
Mr. Frick