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**PILOT TRAINING PROGRAM FOR ASIAN HOUSING OFFICIALS**

**Agency for International Development**

**Contract No. OTR-000-C-00-2114-00**

**REPORT ON TASKS 8 AND 9**

**Margaret D. Woodring  
Project Director  
February 12, 1983**

# **EVALUATION OF THE PILOT TRAINING PROGRAM FOR ASIAN HOUSING OFFICIALS**

## **IN GENERAL**

The first three participants in the Pilot Training Program were at the Center from the second week of September to the second week of December 1982. Any success of the first session had as much to do with the flexibility and quality of the participants as with the contributions of consultants, Center Staff and design of the Program.

Many adjustments and schedule changes were made during the first weeks of the Program through discussion with the participants. This document does not record these adjustments, rather this is a review and evaluation of the workings of the whole session, that is, the program elements, schedule, living arrangements and participant accomodation at the Center.

## **PROGRAM ELEMENTS**

Elements in the Pilot Training Program for Asian Housing Officials (referred to as "the Program") included:

- o regularly scheduled classes at the university
- o University Extension courses
- o Consultations
- o Site visits
- o Seminars
- o Group discussions
- o Weekly meetings with the Project Director and all participants in the Program
- o Assignment of a graduate student as a peer contact and research assistant
- o Meetings with an Advisory Committee
- o Any additional elements based on needs related to his or her work.

## **COURSES**

Feedback on courses was positive except for two courses which seemed appropriate in the catalog description, but which in reality failed to meet the participants' needs. In both cases, other courses were found to replace them. In fact, many courses which interested the participants simply would not fit into the schedule for lack of time.

The following courses were taken by the participants:

Program for CHITRA WEERAWARDANE, Assistant Commissioner, National Housing Authority, Sri Lanka (Emphasis--Management of Government Housing)

Property Management Berkeley - Sep 21-Nov 30	Tuesdays 7-10 PM 10 sessions
Human Relations and Management Berkeley - Sep 22-Nov 24	Wednesdays 7-10 PM 10 sessions
Construction Management Berkeley - Sep 24-Dec 3	Wednesday 9 AM - 12 PM 1 session
Construction Management Berkeley Sep 24-Dec 3	Fridays 9 AM - 12 PM 10 sessions
Fundamentals of Accounting for Non-Accountants San Francisco - Oct 29	Friday 9 AM - 4 PM 1 session
Planning and Development Berkeley - Sep 23-Dec 2 IVAN ILLICH	Thursdays 4 PM - 7 PM

Program for MR. BANCHA RANGARATNA, Chief, Research and Construction Department, National Housing Authority, Thailand (Emphasis--Construction Management)

Construction Organization and Management Berkeley - Sep 24-Nov 19	Friday 9 AM - 12 PM 9 sessions
Legal Aspects of Construction San Francisco - Oct 20-Dec 1	Wednesday 7-9 PM 7 sessions
Construction Management San Francisco - Sep 29	Wednesday 9 AM - 4:30 PM 1 session
Fundamentals of Accounting for San Francisco - Oct 29	Friday 9 AM - 4:30 PM 1 session
Managerial Accounting for Non-Accountants San Francisco - Nov 19	Friday 9 AM - 4:30 PM 1 session
Construction Project Management Los Altos - Oct 21-22	Thursday & Friday 9 AM - 4:30 PM 2 sessions
Mr. Ivan Illich's Lectures Berkeley - Sep 30-Nov 11	Thursday 4-7 PM

Program for CONRAD DE TISSERA, Director, Centre for Housing Planning and Building, Sri Lanka (Emphasis--Construction Management)

Seminar on Construction Management - Owner's Point of View San Francisco - Sep 29	Wednesday 1 session
Legal Aspects of Construction San Francisco - Oct 20-Dec 1	7 sessions
Seminar on Managerial Accounting for Non-Accountants San Francisco Nov 19	Friday 1 session
Seminar on Construction Project Management Los Altos - Oct 21-22	2 sessions
Instructional Principles and Techniques for Training Berkeley - Sep 30-Dec 9	Thursdays 10 sessions
Construction Engineering and Management Berkeley - Sep 24-Dec 3 (course included preparation of term project)	Fridays 10 sessions
Advanced Foundation Construction Berkeley - Sep 22-Dec 2	19 sessions

### CONSULTATIONS

Consultations ranged widely in scope to cover the interests of the visitors. Consultants varied in the ability to find the appropriate level of technical detail for the participants, in part because the technical background for each of the participants differed greatly. Some consultants contributed more than technical information. For example, Peter Adamson is President of Peter Adamson and Associates and Partner in FAP International Chartered Quantity Surveyors and Construction Cost Management Consultants. Mr. Adams is considered an expert in construction management and cost control. In his visit to the Center he was asked to direct his attention to particular problems in the development of a Newtown in Thailand. Adamson identified the possibility of a fast-track design process to speed up the production of housing. His questions became more and more precise about the process of design, bidding and supervision of the project. Even though the participant could not be as precise in his answers, he did learn about a variety of techniques for setting up a project to keep to a tight schedule. In fact, as part of his final presentation at the Center, the participant prepared a draft CPM for the next phase of the Newtown using phased design and bidding techniques, site

inspection and approval documentation suggested six weeks earlier by Adamson.

Interestingly, each of the participants said he or she got a lot out of that discussion even though one of the participants had no prior engineering. Each noted the value of the technique that Adamson used to analyze the Newtown. The technique was highly dependent on a great deal of experience with large scale construction, schedule control and building contracting. To familiarize himself with the project, Adamson would study the plan and ask questions about the project. Answers to the questions would stimulate more precision in his next questions. Once he felt oriented to the project, he had the Thai participant tell him whatever he could about the schedule problems. Again Adamson would ask more questions to clarify relationships between layers of authority, to identify data retrieval methods, to sharpen distinctions between administrative, design and management personnel. At various points, Adamson would suggest techniques that might be used to increase productivity. For each suggestion, he would recommend books or articles which might be read for more information. For the participants it was really a lesson in how to use a consultant more than a transfer of particular information on a particular project.

The topics of consultation included:

Project Management Techniques in Large Scale Construction  
Jack Quinn, Turner Construction, San Francisco

Construction Management for Fort Ord Housing  
Bob Wilson, Turner Construction, San Francisco (also on site)

Computer Methods in Construction Management  
John Burns, Turner Construction, San Francisco

Construction Management for Pleasanton Housing (Low Income project in construction)  
Quinn Meyer, HGT Architects, on site

Construction Project Management  
Owner Representative for City of San Francisco for Moscone Center, Vit Troyan, at Center

Construction Scheduling and Cost Control  
Peter Adamson, Peter Adamson & Associates, San Francisco, at Center

Construction Management  
Owners Representative, James McCormick, Cushman & Wakefield project Consultants, San Francisco

Public Housing - Organization and Budgeting  
Carl Williams, Director of Housing Authority, San Francisco

Public Housing - Organization and Budgeting

Harold Davis and Stewart Sobel, Directors of Housing  
Commission, City of Oakland

Cooperative Housing - Operation and Management  
David Prowler, Economist, Trust for Public Land, San  
Francisco

Cooperative Housing - Organization and Budgeting  
Joan Young, Property Manager, Saint Francis Square  
Housing, San Francisco (Saint Francis Square is a  
cooperative developed by the Long Shoreman's Union)

Public Housing - Tenant Relations  
Lee Cayton, Supervisor, San Francisco Housing Authority

Housing Development and Management  
(Included discussions at Ping Yuen Housing with leader of  
tenant organized management committee)

And discussion with UC Faculty members  
Fernando Kuznetoff - Housing Policy, Chile  
Jean-Paul Bourdier - Indigenous Housing, Africa  
Richard Meier - Housing, Korea  
Mary Comerio - Self-help and Community development,  
USA  
Jesse Reichek - Theory of Development and Housing  
Keith Crandall - Construction Management  
Wallace Smith - Housing Finance

### CENTER SEMINARS

The seminar sessions were designed to be informal; often they would be held at noon over a brown bag lunch. A person would present material for 30-45 minutes. Discussion would follow for another 45 minutes. The Center Seminars sometimes attracted graduate students and interested faculty, but often the session included only the 8-10 people involved with the Program. In many ways the Seminar sessions embodied the objectives of the Program. There was a lot of information exchanged. People who are interested in issues concerning the Third World and housing found the interaction with the participants stimulating and vice versa. Each acted as a resource for the other.

Seminar sessions covered topics such as building contract administration, experimental housing in Upper Volta, government housing programs from 1958-1975 in Chile and construction techniques used in areas vulnerable to earthquake. Each seminar was followed by a group discussion which included the participants, interested faculty, guests, research assistants and the Project Director.

Two of the three participants suggested that rather than have the seminar sessions be part of the weekly meeting of all Program participants, the seminars should be scheduled as additional bi-weekly sessions. This would allow the participants to have the seminar discussions and still retain weekly discussion of his

or her own ongoing research and study. We will continue to have two types of weekly progress sessions, one for the entire Program group and one for each individual participant, his/her research assistant and the Project Director. In addition, the Center Seminars will have a separate schedule.

### **SITE VISITS**

Site visits were basic ingredients in the Program. Each site was selected based on the participants' work. Conversations with consultants would lead to suggestions for sites to visit projects in construction or completed housing. Appointments were made with managers or policy makers faced with problems similar to those identified by the participants. Often these visits would result in finding additional sites or people of interest.

The site visits were considered sometimes tiring, but always interesting. The site visits gave the participants the opportunity to see projects and to talk directly with managers of the projects. In addition, they would travel to and from the site with the research assistant and see various part of the Bay Area. The experience also allowed them to casually meet tenants and working people at the sites. This made the site visits more of an adventure than any of the other parts of the Program. Many of the sites were selected for visitation after the participants had been at the Center two to three weeks. Follow-up visits and additional meetings with project managers went on until the week before the participants left Berkeley. In fact, the number of site visits and interaction with consultants and faculty was most intense in the last week of November. This produced some conflict for the participants, each of whom was preparing a paper to be delivered at the Center in the second week of December. Each participant suggested that site visits begin earlier and peak in the middle of their stay. This would allow the final two weeks for course papers and final work on the individual's study.

An alternative would be to include a set of site visits to be mapped out for the final week before the participant leaves for his/her home country. In many respects this may be the best solution. It would allow the consolidation of learning from courses, conferences, and resources with actual site conditions and examples.

### **RESEARCH ASSISTANTS**

Each participant was assigned a graduate student. The role of the graduate student was two fold. First, he or she was to help the participant make the most of his or her stay at the University to take advantage of such things as libraries and student programs. In addition he or she was to act as research assistant to the participant in the individual projects. Students were assigned 25 hours per month.

In actuality, much more time was needed and the students contributed an additional 10 to 25 hours per month at various times in the session.

In the future, the research assistants will be assigned for 40 hours per month. Also, consistent with a suggestion by the participants, there will be an explicit set of tasks to be performed by the research assistants. The set of tasks will be identified by the participants and the Project Director based on the work to be accomplished by the Center. (An example of a work program for the research assistants is Attachment A.)

### ADVISORY COMMITTEE

The Advisory Committee is the one element in the Pilot Training Program which has not been as effective as anticipated. Originally, the Advisory Committee was conceived as the means by which participants would have access to various departments and schools on the Berkeley campus. The faculty who were invited to participate had an interest in Asia or in housing or both. However, several of the Committee did not find the time to meet with participants at all. Even after discussion with some of the active members of the Advisory Committee, it is not clear what caused the disappointing interaction between some members and the participants. Professors Kuznetzoff and Ishikawa, both active Committee members from the College of Environmental Design, believe that it takes longer than a single quarter to establish advisors to the Program. Professor Smith, from the Business School, feels that over the next year or so interested faculty will replace those whose basic priorities lie elsewhere.

We plan to stimulate more interest on the part of advisors by having individual meetings with advisors in the first three weeks of the participants' stay at the Center. In addition, we will have a presentation by the participants at a luncheon meeting at which each can outline his or her interests at Berkeley. We also know that the publicity of the Program in the publication called Centerline has led to additional faculty interest. (A copy of the Centerline article is Attachment B.)

### SCHEDULE

This is an area in which substantial improvement can be made in the Program. As originally conceived, participation in the Program would be part of an overall strategy for training in the country. For example, training needs identified for Sri Lanka indicated that improvements should be made in the fields of:

- o Housing policy analysis and policy formation
- o Housing finance

- o Site analysis
- o Project management including scheduling and cost control
- o Property management.

The recommendation was to help existing institutions upgrade skills in these areas. Special emphasis was placed on selection of key people in two target groups:

- o High level government analysts and managers
- o Persons connected with educational institutions.

Those selected would focus on one of the topics above. A project outline prepared by the individual would detail what he or she hoped to achieve in the three month period at the Center in Berkeley.

Only one of the three persons who participated in the Pilot Training Program, Conrad de Tissera, had the opportunity to do a project outline. As a result of having little preparation, the other two participants spent the first weeks trying to make decisions on courses and possible consultations at the same time each was trying to identify what he or she wanted to accomplish. This proved to be an anxiety provoking experience and made the transition period in the U.S. more difficult for both.

In future, the participants who are selected should know far enough in advance so that they can concentrate on goals for the Program. Since Asia has a Shelter Conference each year, some effort might be made for potential Program participants, candidates or their supervisors to talk with the representatives from PRE/HUD who know the Program or with representatives from the University who might also be at the conference.

From information we have received, we expect to have four visitors for the Spring Quarter. The following schedule for Spring indicates selection of participants by January 31.

Schedule for Spring 1983

- Jan 31 Select participants
- Feb 15 Participant sends proposed program statement to the Center
- March 21 Participant arrives at San Francisco Airport
- March 24 Quarter begins/Orientation at the Center
- May 31 Individual program of study completed, papers to be distributed to Advisory Committee
- June 10 Individual study presentations
- June 13-19 Participant visits appropriate sites
- June 21 Participant departs for home country

Beginning in the Fall 1983, the University of California is returning to a semester schedule. This will mean that participants will be in Berkeley an

additional three weeks. The 1983-84 calendar is as follows:

	<u>Fall Term 1983</u>	<u>Spring Term 1984</u>
Arrive:	August 24, 1983	January 19, 1984
Depart:	December 13, 1983	May 10, 1984

### **LIVING ARRANGEMENTS**

Accommodations in private homes proved to be a good experience for the participants. The two Sri Lankan visitors lived in one house and the Thai lived in a house about five blocks away. The three took dinner together almost every night in nearby restaurants. The only difficulty arose on rainy days when walking to and from the restaurant was wet and uncomfortable. The other rainy day problem was the distance from the college to Elmwood neighborhood. A bus is available, but the visitors walked to and from the bus and often had to wait in the rain.

We can make an improvement in the living arrangements if there is enough lead time to have participants apply for lodging at the International House. International House is about one block from the College of Environmental Design and has a dining room and a coffee shop in the building. A room and full board costs \$1250.00 per month. The residents at International House are foreign graduate students or visiting scholars who are part of the University. Social programs are scheduled there including one-day sight seeing trips, films and lectures. Though more expensive than the current arrangements, International House has great potential for future participants.

### **ACCOMMODATIONS AT THE CENTER**

One of the research assistants for the Program suggested that the accommodations for the visitors at the Center should be improved by providing more privacy for them. In the Pilot Training Program, each visitor had a desk and chair in a central space called the Bull Pen. The same space is used as access to offices and has a large table for discussions and seminars. None of the participants complained or even commented on a lack of privacy. However, they did not have control of what happened in the large space.

In January and February of 1983, the Center is rebuilding one of the large lab spaces into smaller offices. One or more of these offices will be used for future participants in the Program.

**CENTER FOR ENVIRONMENTAL DESIGN RESEARCH**

**Work Program for Research Assistants**

**Program for Asian Housing Officials**

Introduction

The Program for Asian Housing Officials is an intensive program for upper level administrators, trainers, and managers. All participants are connected to the provision of shelter in Asia, especially shelter for poor people. These are mature individuals, well launched in their careers. Each comes to the Center with a focus for study which is set down in a problem statement.

The intent of this program is to aid in strengthening institutions in the participating Asian countries. Each person selected for participation in the program at Berkeley has a responsibility for training in his or her home country. In some cases, training in-service personnel or at a University is the individual's prime occupation. In other cases, he or she may primarily manage some aspect of the housing sector, but in addition has responsibility for teaching classes.

Tasks to be Performed

Tasks include:

- a) aid in participant's orientation sessions at the Center
- b) review participant problem statement
- c) meet with participant and Project Director at least 2 hours/week
- d) provide assistance in locating materials, professional contacts, and appropriate sites which are pertinent to the field of study
- e) attend discussion seminar with all Program participants at least 2 hours/week
- f) arrange for and participate in site visits after consultation with Project Director and/or other Advisor. (Though not essential, a car is of great benefit; all travel costs, whether by transit or auto, are reimbursed.)
- g) review and edit participant's report in outline form, in draft form, and in final form.

Time Commitment

Program for Asian Housing Officials is set to run in concert with a university term. Research Assistants are budgeted for 40 hours each month. Each participant is at the Center for one term (approximately 3 months). R.A.'s can continue for more than one session if participants are scheduled; however, there is no absolute certainty of more than one term employment.

If you have questions regarding the Work Program, please let me know.

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Center for Environmental Design  
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# CENTERLINE

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## Research Notes

### *Housing Training for Asian Government Officials*

This fall three individuals active in public housing policy and implementation in their home countries came to Berkeley for a three-month training program sponsored by the Agency for International Development (AID). A total of 9 or 10 people from all over Asia are expected to arrive this year for this pilot program, which provides technical skills in areas such as construction management for the visitors.

AID sponsors loan guarantee programs in several countries for the purpose of constructing low-income housing. While the mechanisms and housing types are up to the countries involved, the agency requires that the projects be geared for the 10 to 50 percentile income groups. Generally, the lower the income of the inhabitants, the more anxious AID is to help. The College of Environmental Design's role in the pilot program is to pro-

*continued on p. 2*



*Top: A farm house on a Sri Lanka rubber plantation which is to be replaced in a nearby "model village."*

*Bottom: The new house being stuccoed by the owners part of a government program in which all family members participate.*

## CEDR News

### *New Name/New Mandate*

We have a new name: *The Center for Environmental Design Research*. This change more closely reflects the nature of the work being done in the Center, and comes after a year of major re-examination of the Center's role in the College and the University.

After extensive discussions and reports by various oversight committees, a new set of objectives has been defined as the basis for a research plan to be followed during the next five years. Underlying the discussions was a common recommendation that the Center should increase faculty and student involvement, and that rather than pursue research in a wide spectrum of divergent areas, the Center should concentrate and emphasize activity in a convergent approach to one program area: environmental design. As part of the five-year plan for the Center, three areas of emphasis have been defined

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The Center for Environmental Design Research (CEDR) is an organized research unit of the University of California. It is based in the College of Environmental Design and is intended to serve as the research arm for faculty and students within the three departments—Architecture, City and Regional Planning, and Landscape Architecture. It is also intended to serve researchers within other units of the University of California at Berkeley interested in problems of the built environment.

For information about the projects mentioned in this newsletter, or any of the other activities of the Center, please contact us at the address given above.

*CEDR Executive Director: Henry J. Luginbuhl*

vide individually tailored courses and other activities in areas of perceived need to visiting officials involved in these low-income housing programs.

In the fall quarter, two of the visitors have come from Sri Lanka, and one is from Thailand. Conrad de Tissera works in the Center for Planning, Building and Construction in Colombo where he provides in-service training to other government agencies. Also from Sri Lanka is Chitra Weerawardana, an assistant commissioner of housing for policy. Chitra is studying property management, an especially critical concern in Sri Lanka since the government owns all the low-income housing which is built in the country for either rental or sale to the poor (through a complex sale and lease-back arrangement). Bantha Rangartna, from Thailand, is overseeing the construction of Bang Plee new town outside of Bangkok. One of nine projects currently underway in Thailand, Bang Plee consists of 5000 housing units. Rangartna is studying Critical Path and other methods for improving and expediting large scale building projects.

Since each of the people who come to Berkeley under this program are in positions of responsibility at home, it is expected that the training they receive will be 'passed along' to others in their governments. Another implication to their importance in the government hierarchies, is that the material which they learn in the program must be specific enough, and worth enough, for them to justify a three-month leave from their jobs to come to the United States.

To assist them in their work, each visitor is paired with a graduate student. Then, individual curricula are worked out for each official which allows them to take courses of relevance to their areas of concern. These courses may be given in the College, elsewhere on the Berkeley campus, or through the University Extension program. Each week there is a seminar for the visitors, students and other interested people, which focuses on various topics. At the end of their stay, the three officials will 'host' a feed-back seminar on the program and their experiences.

There are several concurrent programs on the Berkeley campus funded by AID in areas such as nutrition and planning.

### *Full-Scale Testing for Seismic Performance*

For over a decade, the US's National Science Foundation and Japan's Building Research Institute have conducted a joint program of simulated earthquake tests on full-scale building frame structures. Research engineers from all over the United States and Japan have joined in the research.

The actual testing is conducted at the new town of Tsukuba, Japan. For the past few years, a seven story reinforced concrete building has been the test subject. Now a six story steel structure is under construction. Marcy Wang, an Assistant Professor in the Architecture and a practicing architect and engineer, is responsible for designing and testing

Another reason Berkeley was chosen to participate was its location on the Pacific. The people who come are selected by AID on the basis of a proposal written by the applicant, which then becomes the basis for their training. The programs for the visiting officials are developed and coordinated by Margaret Woodring, Associate Research Specialist at the Center. Sandy Hirshen, Architecture Department Chairman, and Richard Bender, CED Dean, help coordinate activities with the College and translate the specialized experiences of the training program into benefits for the school itself. In particular, the program is seen as strengthening the College's involvement in issues in international development and housing policy.

of the architectural components on the steel structure under a two-year research grant received from the National Science Foundation. These components include the cladding, interior partitions, mechanical systems and other non-structural elements.

The research has two aims: ascertaining the behavior of the building and its parts under seismic loads, and establishing a more precise correlation between small-scale model tests and the performance of the full-scale models. One of the primary pieces of information which will come out of the testing program is how well various building code standards minimize potential hazards.



### *On Lok: Community Care for the Elderly*

About ten years ago, a community group in San Francisco set out to build a nursing home for Chinese, Filipino and Italian elderly in the North Beach area of the city. When they approached UC Professor Roslyn Lindheim with the idea she suggested an alternative aimed at keeping people from the bed-ridden existence found in most nursing homes. The result was On Lok, a community-based day health care center for the frail elderly, with housing available.

The facility's users include people over 55 who are in need of long-term care accord-

ing to criteria established by the State of California. The staff of On Lok includes doctors; nurse practitioners; nurses; occupational, recreational and speech therapists; health and social workers; dieticians, cooks, drivers; an audiologist, podiatrist, optometrist and dentist--all working together as a team to deliver a complete care plan.

The result is a unique program. With funding from HUD and Health and Human Services, and with individual patient expenses covered by Medicaid, a cheerful, positive environment has been created for those who otherwise might spend their remaining years in bleak, solitary inactivity.

The goal of the program has been to keep the elderly as active as possible, to keep them with their families whenever practical, and to ensure that the elderly remain involved in their community. Since 24-hour care is sometimes necessary, On Lok House provides 54 units of housing in addition to the day programs for members of the community and house residents.

Lindheim, who is on the faculty of the Architecture department at Berkeley, recently received a grant from the Commonwealth Fund of New York to study On Lok after a decade of operation. Specifically, how does the physical environment of On Lok House support or detract from the goals of the program? Since it is estimated that 2.4 million persons aged 65 or older require shelter and services if they are to remain out of institutions, it is hoped that the study can assist others in the establishment of similar community-based day health care with residence facilities.

Research began in Spring of this year with a course on "Day Health and Housing for the Frail Elderly" offered in the architecture department. The grant will allow the study findings to be published in a booklet for dissemination to all those interested.



### . Indoor Pollution

CEDR Research Specialist Hal Levin is spending a great deal of time this fall in Southern California working on a project for the State Architect's Office and the California Department of General Services that will assist in assessing and reducing indoor pollution in a new state office building currently in the final stages of construction. This is especially pertinent since the well-publicized problems with the new energy-conscious Bateson office building in Sacramento have focused attention on the potential hazards of air-tight structures with low ventilation and modern materials.

The current project has two parts. A team led by Levin and consisting of engineers and industrial hygienists are conducting air-sampling and other tests to develop information and provide advice for the completion and occupancy of the new building. Based on this and other work Levin has conducted over the last four years, a report will then be prepared on "Strategies and Procedures for Minimizing and Mitigating Indoor Pollution in Newly Constructed, Remodelled or Furnished State Office Buildings," which can be used by the State in the future.

### . Generating Site-Specific Weather Data

As designers and engineers make increasingly detailed analyses for building response to weather conditions, the discrepancies between regional weather tapes provided by the National Oceanographic and Atmospheric Agency and the actual conditions at the site under consideration become progressively more problematic. Human comfort, energy concerns, and even the structural implications of snow loads and wind forces, are being designed for using data collected at airports which may be located miles away from the building site. Surrounding topographical features, both natural and man-made, can radically alter the weather from one site to the next.

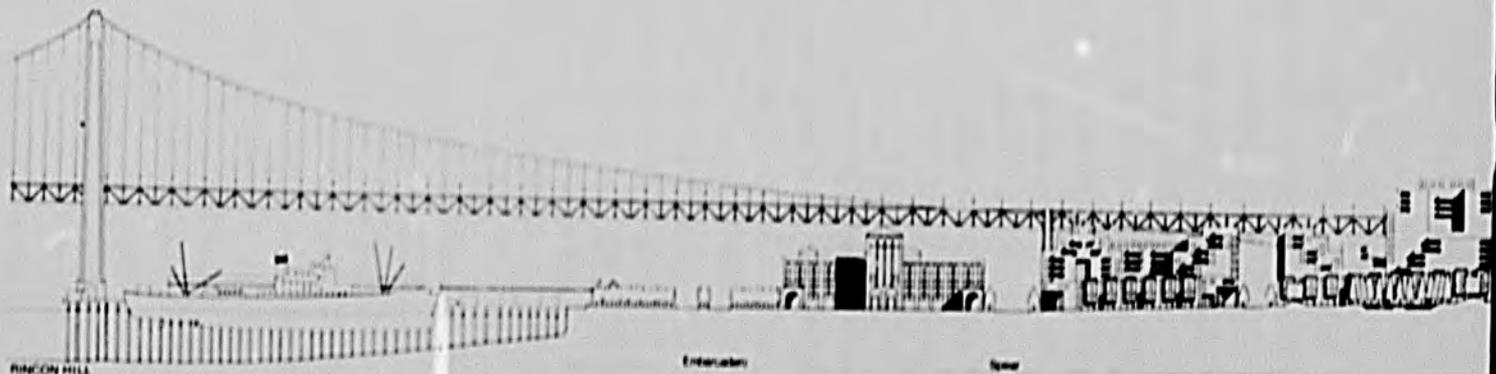
With the growing use of year-long weather tapes in the design and monitoring of entire building systems providing an impetus, Associate Professor Eward Arens is working on a project funded by the National Science Foundation to provide a method for translating these federally-supplied weather tapes into site-specific data. The project started about three years ago with comparisons between actual climatic conditions on a site and synthetic data gen-

erated by various forms of computer programs. Based on that work, an interactive program was designed using as its input information readily available to designers, such as that found on site plans and other construction documents.

The NSF project is a series of experiments to field test the algorithms used in the program. After the algorithms are validated individually in local tests, the entire program will be tested across large geographical distances, for example Sacramento to the Sierras, to see if the weather tapes can be modified to accurately describe the new site conditions in areas a considerable distance away. The analysis work will be carried out in the Center and the Architecture Department's Building Science Laboratory,

The project is scheduled for completion in 1984. The program being tested is written in Fortran and designed for use by anyone who currently uses the NOAA weather tapes.

Associate Professor *Joseph McBride*, from the departments of Forestry and Landscape Architecture, will be assisting in the project.



## Seminars

### *Seismic Performance of Older Buildings*

This summer, CEDR hosted a workshop on issues surrounding the seismic performance of older buildings. The sixty attendees represented a broad range of disciplines and interests, including architects, engineers, preservationists, developers, city and state officials, community designers, bankers and insurance underwriters. Most were from the San Francisco Bay Area, meeting to exchange views on the economic, social, political, architectural and planning aspects of rehabilitation structures which, as they currently stand, may not survive the next major earthquake.

The three-day workshop was funded by the National Science Foundation and had two major goals: First, to inspire new interdisciplinary research that would investigate novel directions for addressing the hazards of weak buildings, Second, to bring together people who had long wanted to meet and exchange concerns. Much of the discussion at the workshop focused on economic and social, as opposed to technical, problems. How does one preserve the architectural

value of a historic structure while strengthening its resistance to earthquakes, within financial constraints? How can one avoid dislocating tenants while rehabilitating a building? What incentives are there for lowering the hazards posed by these buildings, especially since codes and laws are not retroactive?

The workshop was directed by Marcy Wang and Sami Hassid from the Architecture department. Proceedings, including the technical and working papers presented, will be available in early 1983.

### *Ivan Illich: The Feminization of Poverty*

CEDR is host this quarter to the internationally known writer and teacher Ivan Illich, who is a Distinguished Visiting Professor at Berkeley. He has been presenting a lecture and seminar series entitled "Vernacular Gender and Economic Sex" in association with faculty from across the campus. In mid-November, Illich will be joined by invited guests from all over the world to discuss the impact of appropriate technology and modernization in third world countries on women; in particular,

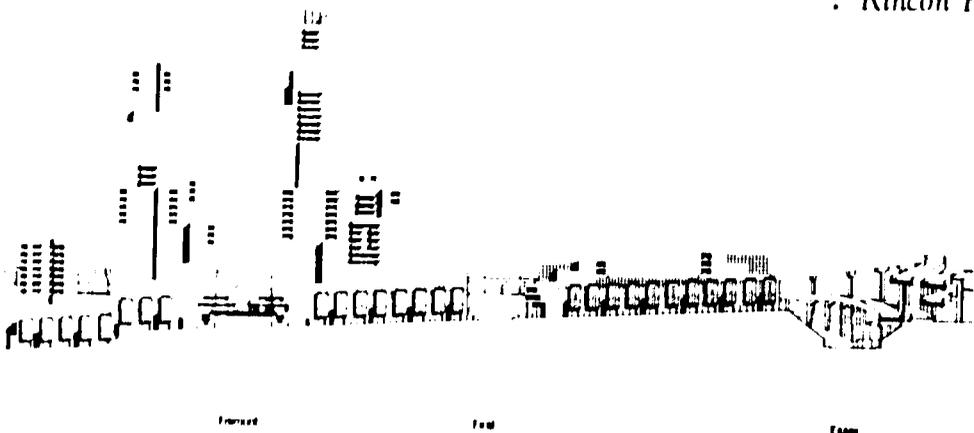
the problems created when a traditional society is disrupted and women are forced into competition with men for dollars and other first world rewards.

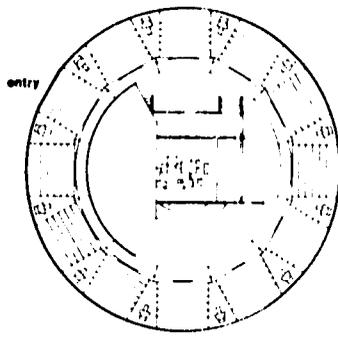
Among those attending the seminar will be Valentina Borremans, founder of the Center for Intercultural Documentation in Cuernavaca; and community organizers, teachers and writers from Germany, Holland, Mali and elsewhere. The seminar is being organized by Susan Hunt through CEDR, and proceedings will be available.

Illich was born in Vienna in 1926, and has received advanced degrees in Crystallography, Theology, Philosophy and History. He has lived as a Roman Catholic priest among Puerto Ricans in the slums of New York, has served as Vice Chancellor of the Catholic University of Puerto Rico, and since 1960, has been a resident of Cuernavaca. During the last 15 years, he has analyzed the common ideology underlying industrial-age institutions and has published the results of seminars he conducted at the Center for Intercultural Documentation in a series of books.

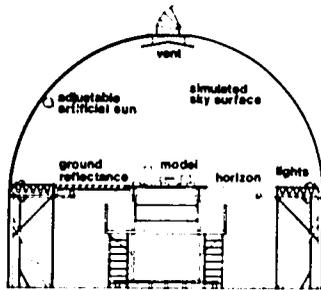
### *Rincon Hill*

Extensively discussed in the August 1982 issue of Progressive Architecture, the final report of a major study of downtown San Francisco is now available from the Center. Rincon Hill: A Plan for Urban Transformation presents the results of a project directed by architect and UC Professor Daniel Solomon for the UC Housing Task Force and the SF Department of City Planning. The study was funded by the San Francisco Foundation and SPUR.



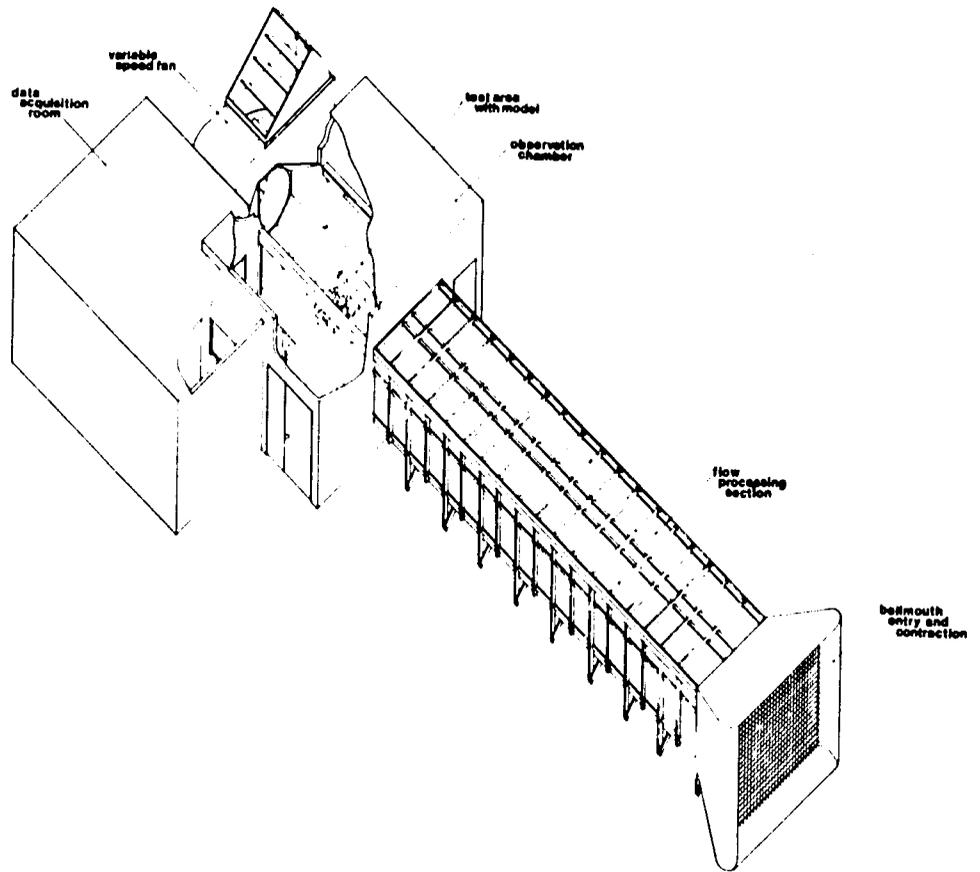


plan



section

SKY SIMULATOR



BOUNDARY LAYER WIND TUNNEL

## Update

### *Wind Tunnel and Artificial Sky*

It is virtually impossible to anticipate, by intuition or mathematical analysis, the winds that will be caused by a structure, since they are determined by very complex interactions of forces. Fortunately it is possible to predict the wind patterns and pressures around structures by testing scale models in a wind tunnel.

Data from wind tunnel tests can be combined with climatological data to quantify the effect of a proposed structure on pedestrians in terms of human comfort.

Both ventilation and infiltration can be studied for energy and comfort inside a building as well.

Models are now being built for testing in the CEDR's new Wind Tunnel, which joins the Artificial Sky and Thermal Laboratory as resources in the Building Science area available to students, researchers and professionals.

Meanwhile, the Artificial Sky is seeing increasing use by private firms and people in the College. Among the current projects to make use of the new direct sun feature is research for the State of California in connection with the Title 24 energy codes.

### *Earthquake Advisory Service*

Two publications are now available as a result of the work undertaken last year to develop a model for assistance to homeowners who wish to strengthen their residences against earthquake hazards. An Earthquake Advisor's Handbook is a reference guide for building officials and community design centers on earthquake hazards mitigation of dwellings. Earthquake Hazards and Wood Frame Houses, What You Should Know and Can Do contains recommendations to community groups and homeowners. Project Director Mary Comerio is now working with the City of San Francisco to develop a model program for the special circumstances of a dense urban community.

## People

The CEDR Executive Committee aids in the planning process and provides continuity for the Center, as well as ensuring liaison between the Center and the rest of the College. Members for this year include *Allan Jacobs*, *McI Webber*, *Joseph McBride*, *Howard Friedman* and *Rostyn Lindheim*.

Besides his normal teaching duties at UC Santa Cruz and the project described in the Research Notes, *Hal Levin* has been increasingly in demand as a lecturer on the topic of indoor pollution as awareness of the problem grows. Recently, he delivered papers before two medical groups on the topic: a meeting of Immunotoxicologists in Utah, and a conference of Clinical Ecologists in Banff, Canada.

*Vladimir Bazjanac* will be teaching Winter quarter at UCLA. Recently Bazjanac has been involved in several 2-day AIA seminars on Architectural Energy Analysis in cities around the US. He delivered a paper in Denver in July on Energy Efficient Buildings in Sub-Tropical Climates.

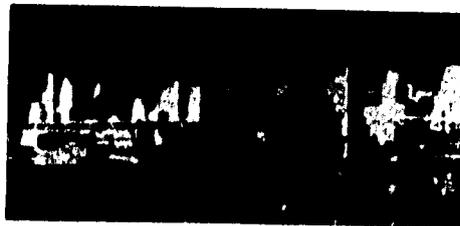
*Margaret Woodring*, the Project Director for the AID Housing Training Program, is an architect and planner. She has served as a consultant in transportation and transportation investment, and local government co-development projects. Former Manager of Planning for the Metropolitan Transportation Commission, she is also currently working on two private housing projects and a house in Idaho.

Faculty in both Planning and Landscape Architecture are currently engaged in a great

variety of research activities. City and Regional Planning Chair *Fred Collignon* is studying problems in urban infrastructure. *Robert Twiss*, Landscape Architecture Chair, is involved in several consulting projects.

CEDR Director *Henry Lagorio* attended the Ancona Conference on Health Care Facilities in Earthquake Regions in July 1982, where he presented a paper on the structural performance on hospital buildings in California. After the conference Lagorio was awarded a silver medal for Distinguished Service in Seismic Safety by the Regional Government in Ancona. In August, Lagorio was appointed Secretary/Treasurer and a member of the Board of Directors of the Earthquake Engineering Research Institute for a period of two years. Another recent appointment was to the Information Organizing Committee of the Eighth World Conference in Earthquake Engineering to be held in San Francisco in July 1984.

*Sanford Hirshen*, Chairman of the Architecture Department, is also involved with the Housing Training Program. Besides his teaching duties, Hirshen has an active practice specializing in public service projects, particularly housing for the elderly. The firm of Hirshen, Gammill, Trumbo, in conjunction with Mui Ho, recently completed "experimental" housing funded



*Rincon Hill model in the Environmental Simulator.*

by HUD and NIMH which provides a group setting for people who have lived in half-way houses and are moving towards more independent situations.

The Center has a new administrative assistant, *Christine Williams*. Chris has worked for the University for six years, in architecture, engineering, space sciences and Lawrence Berkeley Lab. She has had extensive experience with grants and management, and we are extremely pleased to have her on board.

CEDR Associate Director *Randy Hoster* and other faculty and students in the Social Factors area in the departments of Architecture, Landscape Architecture and Planning recently wrote a Humanistic Design Manifesto, which has been widely distributed to schools around the country. As an outgrowth of this project, Associate Professor *W. Russ Ellis* has initiated a campus-based discussion group, and proposed a future symposium, on the topic of Social Democracy and Public Places. Ellis has recently been appointed to the editorial board of Office: Technology and People, a new international journal on the impact of computers and other technical innovations in the workplace.

CEDR joins the rest of the Wurster community in a sense of loss at the death of *Donald Appleyard*. He was a teacher to many, a renowned author, and a major figure in enhancing the environment of cities and countries around the world. Appleyard was a founder of the Environmental Simulation Lab at Berkeley, and a co-editor of the forthcoming journal Places, jointly published by MIT and Berkeley. He will be missed.

## New Name *continued*

for focusing CEDR's research during the immediate future.

*Health, Stress and Environment:* Study in this research area will focus on the performance of the designed environment in terms of human response to interaction with physical environments. Specific components of study include: habitability, productivity, indoor air quality, toxicity of building materials, comfort, high-density high-rise environments, use of parks and open space, physical health and stress of occupants and users of various facilities in the urban environment, resource extraction and land reclamation.

*Building Science and Technology:* Topics included in this area are building diagnostics, design failures, energy analysis of buildings, daylighting studies, building component testing and design, building preservation and conservation, life-safety implications, design-oriented computer methods, design methods, wind-tunnel experiments, artificial lighting systems, urban micro-climate determinations, urban hydrology and forestry studies, and other considerations

related to the technical performance of buildings, building complexes, and the urban infrastructure. The various lab facilities in the College, such as the Urban Simulation Lab, the Artificial Sky and the Thermal Lab, engage in research in the Building Science area.

*Community Design and Development:* Research in this area is intended to complement the College's existing Community Design Center. Specific topics include community housing, environmental planning, third world development, socio-economic implications to development, social consequences of technology, urban risk analysis, urban environmental impact studies, self-help design, participatory design methods, neighborhood renewal, urban land recycling, and other community concerns.

Based on the re-definition of activities, results of a five-year review by a Campus Ad-Hoc Committee, and the new five-year research plan, the Chancellor of the University granted the Center a new 15 year mandate effective July of 1982.

## Industrial/Professional Liaison Council

As part of the re-structuring associated with the development of the new five-year research plan, CEDR has been initiating liaison activity with a wide range of groups both on and off the UC campus for direct research support through the Center. Since it is a component of a public university, there is particular concern that research in the built environment be shared with public and private sectors, and that these groups have an opportunity to suggest projects for CEDR investigation which respond to specific needs.

Towards that end, an Industrial/Professional Liaison Council was established at the beginning of this year to foster research activity in environmental design. While such a group has been long overdue in its own right, one strong incentive for its creation has been the uncertainties associated with federally-sponsored research. To date, Kaiser Center, Inc., John A. Blume Foundation, Dow Chemical, ROMA and Associates, Ars Associated Foundation, K. T. Enterprises, Inc., and Pella Industries are among those who have joined the council.

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