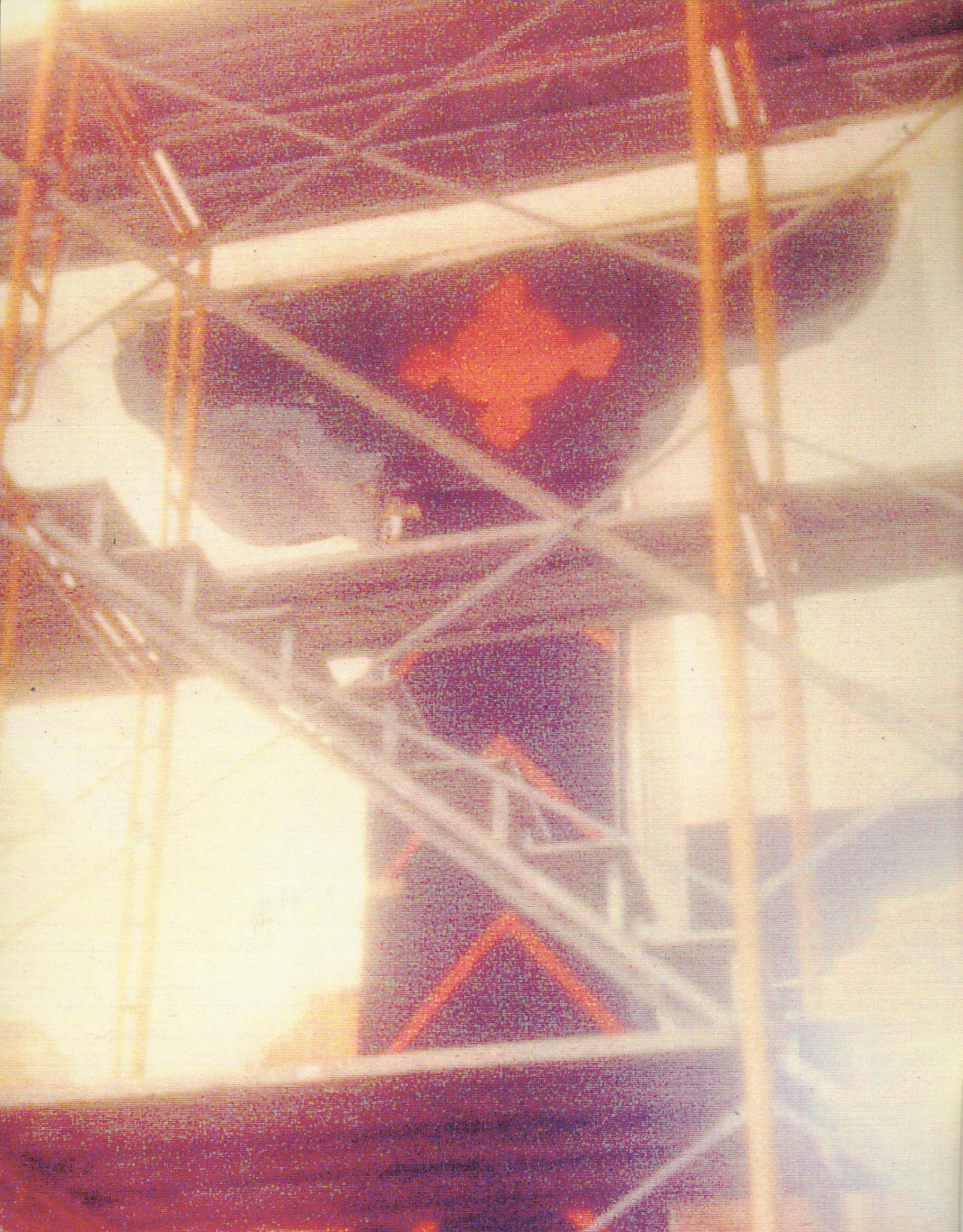
THE CENTER FOR ENVIRONMENTAL STRUCTURE

ARCHITECTS PLANNERS ENGINEERS CONTRACTORS



Shelter for the Homeless, San Jose, California, designed with the participation of homeless people from Northern California



Full service construction: The interior of the Great Hall Auditorium, Eishin Campus, during final plastering



Seventy families in Santa Rosa de Cabal, Colombia, digging the main sewer trench for their neighborhood

PURPOSE AND AIMS

To create and maintain a non--profit corporation to implement building projects in which the aims of a better world can be realized, and in which towns, landscape, buildings, gardens, are truly adapted to support human existence.

The aims of the Center for Environmental Structure are to provide publicly accessible models of working processes able to alter the procurement of buildings throughout the world.

We seek to do this in a fashion which permits the creation of a better architecture and provides professional and lay people with working models for new projects in the twenty--first century. Pilot projects of small and moderate size are gradually to be replaced by projects in which size, scale, and impact increase, and are able to be competitive with those very large projects which are now damaging cities and countryside everywhere, in the United States, in the European world, in Latin America, in Asia, and in Africa. The projects we take on have as an explicit aim, the purpose of extending tested mechanisms and processes of implementation to larger and larger cases which can, within a finite time, begin to have impact on the conduct of architecture and planning in the world.

PROFILE

With head offices in California, during the last years CES has undertaken some 200 projects, including town and community planning schemes, in many countries including Mexico, Japan, Austria, United Kingdom, Canada, Peru, Papua New Guinea, India, Colombia, Venezuela, Germany and the United States. Clients have included the United Nations, National governments (including Mexico, India and the UK), Cities (including Pasadena, California; Vancouver, British Columbia) and Industry (including Hoechst Pharmaceuticals and Sun Microsystems).

In many of these projects CES combines with engineering professionals of other disciplines and provides a wholly innovative and integrated planning design and construction service; it also frequently engages with other architectural firms.

Branch offices of CES have been maintained at different times, in these different countries, and are currently active in the United States, Japan, Germany and the UK.

COST REDUCTION & CONTROL

COST CONTROL AS FUNDAMENTAL TO THE HEALTH OF THE ENVIRONMENT

A major part of CES work during the last 20 years, has been aimed at cost control. New forms of construction management contracts, invented and developed by CES, have provided managed methods of cost control which provide the client the opportunity to obtain maximum benefit for any given level of cost, with security of final cost.

Vital to the welfare of the environment, is the possibility of flexible adaptations during construction, and methods of providing that this flexibility can be maintained within a guaranteed cost umbrella. Our innovations provide clients with the advantages of flexibility, without the costs and penalties and cost--overruns typically encountered when construction proceeds within existing forms of bidding and cost control.

BUDGET MANAGEMENT THROUGH PROGRAM BUDGETING

Direct control of subcontractors, who are required to provide bids working to a pre--fixed sum, while being permitted to vary the specification of what is delivered. This form of program budgeting is efficient, highly cost-effective, and creates a better relationship with subcontractors, removing the antagonistic relation that exists under existing frameworks, yet creating large cost advantages for clients.

LOW COST CONSTRUCTION TECHNIQUES

New ultra-low-cost construction techniques and new attitudes combine cost-effectiveness, with maximum benefit per unit of cost to the human considerations in the environment.

MAXIMIZATION OF RESOURCE EFFECTIVENESS

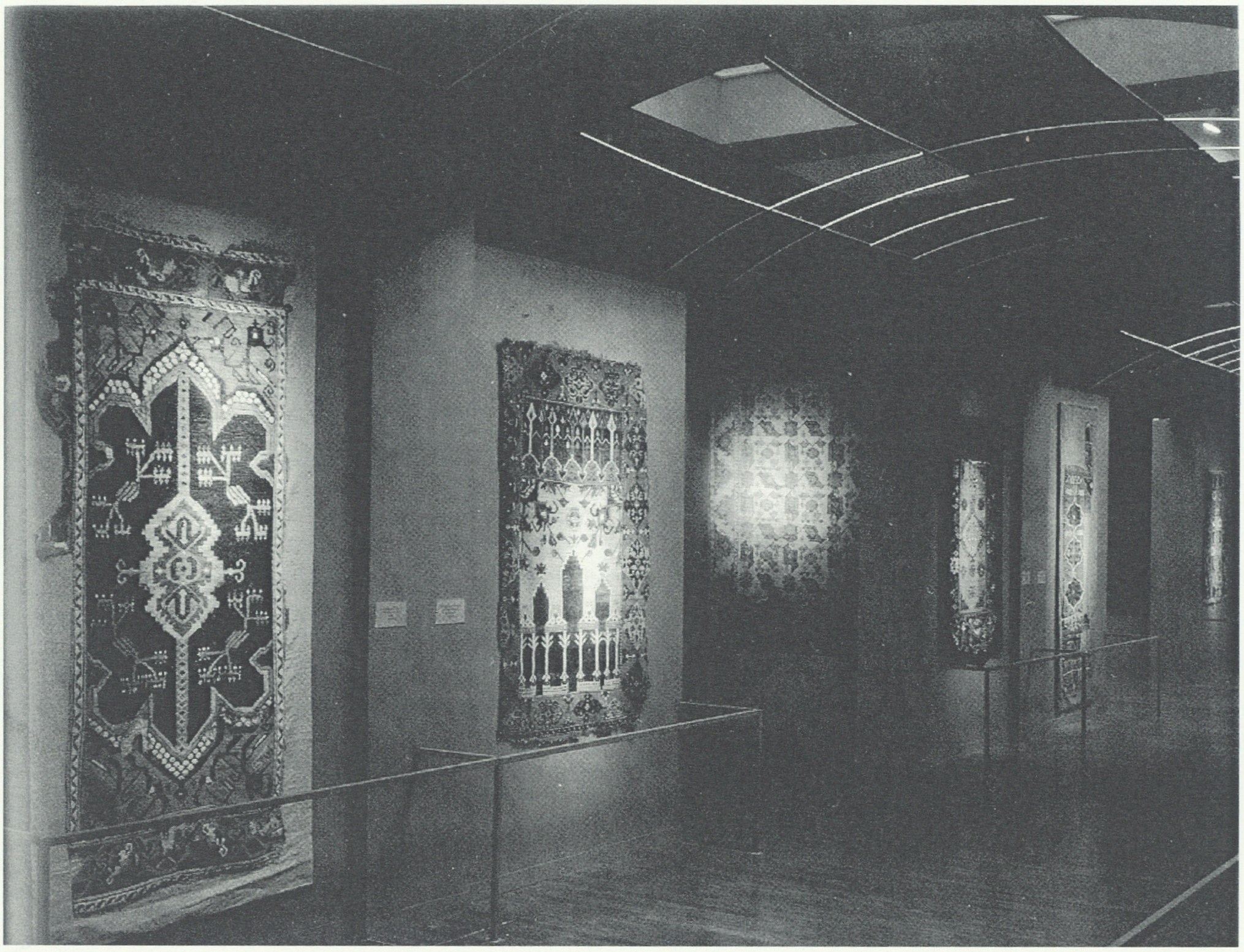
New forms of cash flow for housing programs that are based, in part, on available resources, may be used to maximize the effect of available cash flow, while keeping client expectations at a minimum, reduce later burdens caused by loan indebtedness.

INNOVATIONS IN INTEREST STRUCTURE

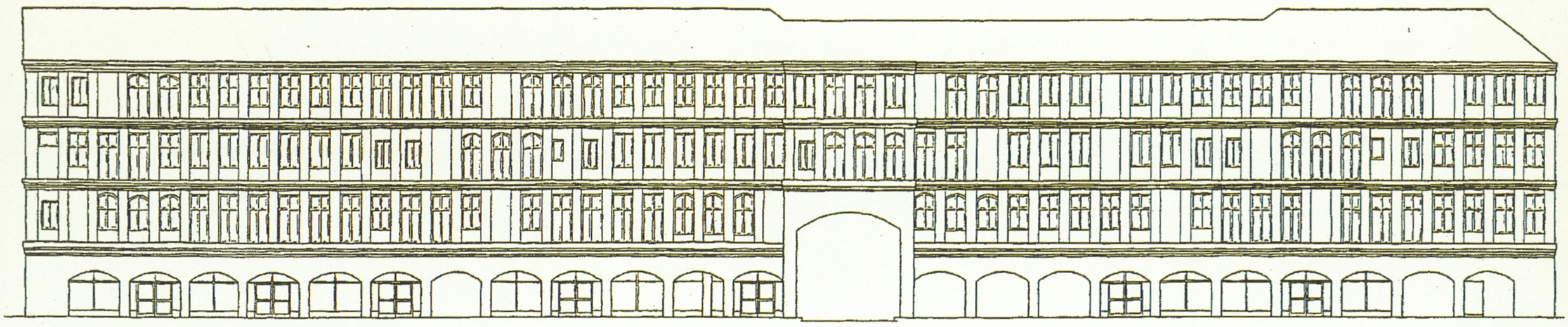
Experiments are now under way to encourage mixed use development, through creative forms of variable interest, thus assigning priorities and different forms of cost to components, according to their level of social importance. This has the effect of recovering key components of the urban environment, which are damaged by present types of interest structure.

ASSOCIATED PROFESSIONAL ORGANIZATIONS

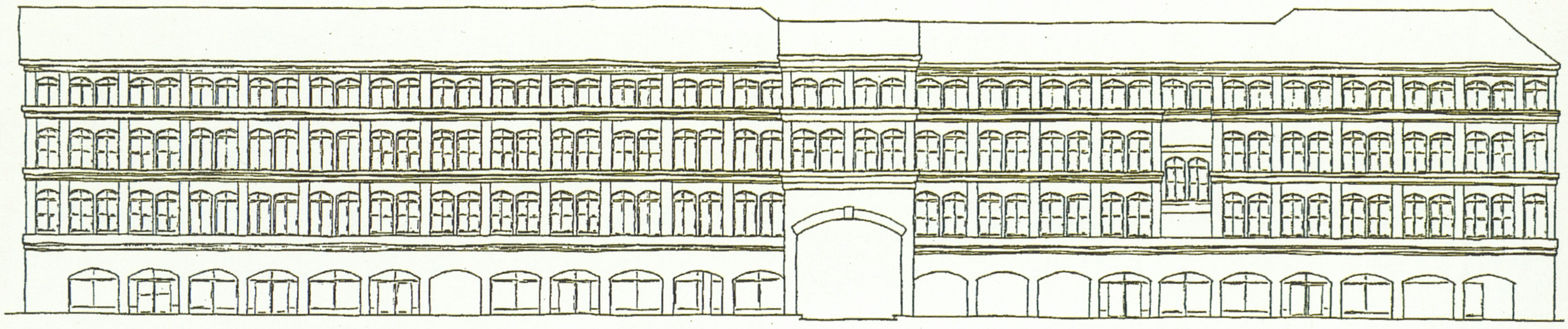
Banco de la Vivienda	Peru
The World Bank	Washington
Banco de Credito	Baja California
Midland Bank	West Sussex
Housing Finance Corporation	London
Bank of America	San Francisco
Allott and Lomax, Engineers	Manchester
Prince of Wales's Projects Office	London
Fujita Kogyo, Heavy Construction	Tokyo
Bell Laboratories	New Jersey and Illinois
The San Francisco Museums	
The Massachusetts Institute of Technology	
The Joint Center for Urban Studies	Harvard
Hajo Neis and Partners	Frankfurt
Helenic Technodomiki S.A.	Athens
The David Week Group	Sydney, Australia
Professor Howard Davis	Eugene, Oregon
Thallon & Edrington	Oregon
The Global Business Network	San Francisco & London
Oliver and Komes	Berkeley
Life Savings Bank, SSB	Austin, Texas
Halim Abdel Halim and Partners	Cairo
Bimal Hasmukh Patel	Ahmedabad, India
Ken Costigan and Partners	Papua New Guinea
Ramzi Kawar and Partners	Amman, Jordan
Nili Portugali	Tel-Aviv
Moshe Safdie and Partners	Boston and Jerusalem



Gallery of Early Turkish Carpets, San Francisco Museum



East Elevation A



East Elevation B

0 2 4 8M

Housing for factory workers, Hoechst Pharmaceutical, Frankfurt



High-density low-cost Housing, Oregon

SELECTED CLIENTS

Costruyamos, Colombia

The United Nations

The Herman Miller Corporation

Sun Microsystems

Eishin Gakuen

The Mary Rose Trust

The Government of Baja California, Mexico

National Institutes of Health

H.R.H. The Prince of Wales

The University of Oregon

The City of Nagoya

The City of Mountain View

The City of Pasadena

Hoechst Pharmaceutical, Frankfurt



High density housing, Downtown Tokyo, built with participation of the users: every apartment is different



Linz Cafe, Austria



Gujarat, India



Mexicali, Mexico

PHILOSOPHY: THE LIFE OF THE ENVIRONMENT

Fundamental to our aims, is the fostering of a certain quality in the built environment. For convenience, we call this quality life. In a living environment, as we wish to define it, the people who live and work there are relaxed, know that they belong there and enjoy a kind of freedom in relation to the buildings and space around them. They feel and are "at home" in their world.

In looking around us we can most frequently see this quality in traditional buildings and towns, where, over the years, people have constructed an orderly but loose configuration of space, rooms, gardens, houses, and larger buildings. The later 20th century, for varied and complex reasons, has not seen much in the way of living buildings and neighborhoods.

The idea of CES is not to engage in a nostalgia for past centuries, but to develop a modern interpretation of living structures that can speak to us, our cultural specificity, and to our times, and yet reach this deep understanding of spatial arrangements that support rather than deny humanity and ordinary daily events.

Many ingredients are required to make a living structure: an understanding of space and human response to it, appropriate technology and materials., constructing, from the outset, with and for the people who will adopt that space as their own, and even arranging for the way that money flows for initial construction, later repairs, adaptation, and growth. The key for CES is in understanding and developing the processes by which living environments can come into existence and prosper.

PARTICIPATION

We believe that people have a right to determine and shape their own environment. We also believe that they know more details, necessary to the creation of a good environment, and that good architecture can only come from wholehearted involvement of the users in the shaping of their buildings and streets.

CES has a long standing commitment to the particular human qualities that make each country, each people, each region unique, and has wide experience in cooperation and in paying attention to the subtlety of human value as it arises in different contexts.

Since 1961, CES has had wide--ranging experiences of participation in different countries, and in working with peoples of different cultural and ethnic background, and with people of a wide range of different income levels.

- India
- Japan
- Peru
- Mexico
- Colombia
- Brazil
- Venezuela
- Germany
- Austria
- Israel
- England
- California
- Oregon
- Samarkand
- Nepal
- Canada
- Alaska
- Papua New Guinea
- Honduras
- Spain
- Haitian Americans
- Canary Islands
- The homeless, USA

Working with families in Nagoya



PROCESS INNOVATION

The most fundamental aspect of CES innovation and practice, concerns the necessity to revise and reconstruct social, technical, banking, and human process, throughout the field of building and environment.

We are committed to the view that a good, healthy, and beneficial environment for human beings in the 21st century, can only be created by thoroughgoing changes in the systems and processes in use during the 20th century.

During the last thirty years we have frequently proposed, and made, innovations of process. At one time or another, we have proposed changes in almost all the processes that create buildings, because for over thirty years we have tried to identify the kinds of process that are capable of creating a living world. Some of our process innovations include:

- Analysis of a design task in terms of its functional roots
- Finite element analysis of complex forms as a method of cycling engineering solutions
- Involvement of users and lay people in the design process of their houses and workplaces
- Fixed-fee, non--profit management of construction
- New forms of construction contract
- Changes in the flow of money
- Inventions in construction technique designed to create physical processes that could allow formation of well--adapted, cheap, buildings
- The nature of the human process that is used to lay out a building
- The experimental human process needed to improve layout of building interiors
- Changes in process for consecutive layout and siting of buildings in urban design and construction of city centers
- Mechanical innovations in setting out the foundations of a building
- Innovations in engineering process and analysis to get better results in engineering design
- Innovations in public diagnosis of a community environment leading to changes of process
- Innovations in the relative order of items in a construction procedure
- Innovation in the manufacturing process for office furniture designed to make the furniture better adapted to individual needs
- Changes in the maintenance of buildings, and the maintenance budget and its distribution over the lifetime of the building

These innovations have all been innovations of process. We made them because we knew the value of the living architecture we were trying to achieve was dependent on changes in process, and could only be created by these or other equivalent process changes. These process--innovations were often dismissed as dreaming, as not essential, as too radical for architects to propose. Nevertheless, experience has taught us that fundamental practical innovations of process are necessary consequences of thinking correctly about the nature of life, and of facing honestly the task of creating living structure in the world.

TECHNICAL INNOVATION

As part of CES efforts to make better, low--cost housing and public buildings, a wide variety of technical innovations have been introduced. Innovations include

- New types of masonry wall
- Shot concrete wall and vault construction techniques
- The West Dean wall
- The Fresno block wall
- The Mexicali wall
- The Frankfurt wall
- New types of vault and ceilings
- Guna--tile vault
- Bavra vault
- Etna street vault
- Mexicali vault
- New types of studwork and wood structure
- New types of thick studwork
- Seattle 10" wall
- Experiments of Agate
- Monocoque plywood construction for houses
- Hollow plywood beams and columns
- New types of roof structure and roof surface
- The Russian roof
- Concrete trusses
- New types of cabinet and furniture
- New lights
- Furniture made of one--by material
- Shell chair
- Plastering lath as a base for sofa
- Rebars as connectors in heavy timber
- Plywood box beams and columns
- Two inch shell floor slabs
- Gunite
- Basket weave shells
- Thin wall concrete
- Ultra--thin foundations and slabs
- Using thin shells for shear reinforcement
- Low cost light weight vaults
- Dry stacked blocks
- Cylindrical blocks
- Tension web
- Shot concrete trusses
- Curved member trusses
- Interlocking multi--masonry wall
- Low cost form--work
- Pre--cast concrete girder--arches
- Self--centering wall blocks

Our manufacture of special interlocking earth-cement blocks, designed to be placed in a way that allows unfolding to proceed smoothly, and without backtracking



SELECTED C.E.S. PUBLICATIONS

THE NATURE OF ORDER, 4 volumes, Oxford University Press, New York, 1998.

THE MARY ROSE MUSEUM, with Gary Black, Miyoko Tsutsui, Oxford University Press, New York, 1995.

BATTLE: THE STORY OF A HISTORIC CLASH BETWEEN WORLD SYSTEM A AND WORLD SYSTEM B, with Hajo Neis, Oxford University Press, New York, in press.

A NEW THEORY OF URBAN DESIGN, with Ingrid King, Hajo Neis, Artemis Anninou, Oxford University Press, New York, 1987.

THE PRODUCTION OF HOUSES, with Howard Davis, Julio Martinez, Don Corner, Oxford University Press, New York, 1985.

THE LINZ CAFE, Oxford University Press, New York, 1981.

REBIRTH OF THE INNER CITY; THE NORTH OMAHA PLAN, with Howard Davis, Center for Environmental Structure, Berkeley, California, 1981.

THE TIMELESS WAY OF BUILDING, Oxford University Press, New York, 1979.

A PATTERN LANGUAGE, with S. Ishikawa, M. Silverstein, M. Jacobson, I. Fiksdahl--King, S. Angel, Oxford University Press, New York, 1977.

Translations: Spanish 1980, Dutch 1982, Japanese 1984, Chinese 1993, German 1996

THE OREGON EXPERIMENT, with Sara Ishikawa, Murray Silverstein, Shlomo Angel and Denny Abrams, Oxford University Press, 1975.

Translations: French 1976, Japanese 1977, Italian 1977, Spanish 1980

THE DETERMINATION OF COMPONENTS FOR AN INDIAN VILLAGE, Pergamon Press, 1975.

SELECTED BOOKS AND FILMS ABOUT THE WORK OF CES

PLACES FOR THE SOUL: THE ARCHITECTURE OF CHRISTOPHER ALEXANDER, 30 minute film, Director, Ruth Landy, Producer, Cinema Consultants, San Francisco, 1990, shown on Channel 9.

THE ARCHITECTURE OF CHRISTOPHER ALEXANDER AND THE CHIKUSADAI HOUSING PROJECT, 60 minute film, Director, Makoto Ozawa, NHK, Japan National Broadcasting Company, Tokyo, June 1992. Shown nationwide, June 18, 1992.

CHRISTOPHER ALEXANDER: THE EVOLUTION OF A NEW PARADIGM IN ARCHITECTURE, Stephen Grabow, Routledge Kegan Paul, London, 1983.

STRUCTURE OF C.E.S.

PRESIDENT

President Christopher Alexander

1996--	Fellow of the American Academy of Arts and Sciences
1967--98	President, Center for Environmental Structure, Berkeley, California.
1963--98	Professor of Architecture, Department of Architecture, University of California, Berkeley.
1990	Trustee, Prince of Wales's Institute for Architecture.
1994	The Seaside Prize, for Contributions to Architecture
1992	Louis Kahn Memorial Lecture, Philadelphia.
1987	Distinguished Professor Award by the Association of Collegiate Schools of Architecture.
1987	Silver medal, Saitama Prefecture, Tokyo, Japan.
1985	Best building in Japan Award, by the Japan Institute of Architects.
1980	Member of the Swedish Royal Academy.
1972	The Research Gold Medal of the American Institute of Architects.
1965	Research Professor in the Humanities, University of California, Berkeley.
1965	Visiting Fellow, Rockefeller Foundation, Villa Serbelloni, Italy.
1961--3	Fellow, Society of Fellows, Harvard University.
1954--8	Trinity College, Cambridge

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The Center for Environmental Structure is registered in the United States as a non-profit corporation of planners, architects, engineers and contractors

C.E.S. was founded in 1967



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