

AGENCY FOR INTERNATIONAL DEVELOPMENT WASHINGTON, D. C. 20523 <b>BIBLIOGRAPHIC INPUT SHEET</b>	<b>FOR AID USE ONLY</b>
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1. SUBJECT CLASSIFICATION	A. PRIMARY SCIENCE AND TECHNOLOGY
	B. SECONDARY SCIENCE AND TECHNOLOGY

2. TITLE AND SUBTITLE  
 LOW-COST HOUSING FOR DEVELOPING COUNTRIES AN ANNOTATED BIBLIOGRAPHY 1950-1972

3. AUTHOR(S)  
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4. DOCUMENT DATE JUNE 1974	5. NUMBER OF PAGES 220 PAGES	6. ARC NUMBER ARC 016.30154-5631
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7. REFERENCE ORGANIZATION NAME AND ADDRESS  
 CORNELL UNIVERSITY  
 PROGRAM ON POLICIES FOR SCIENCE  
 ITHACA, NEW YORK 14850

8. SUPPLEMENTARY NOTES (Sponsoring Organization, Publishers, Availability)

9. ABSTRACT

The purpose of this bibliography is to present a compilation of abstracts of a large portion of the most important publications on low-cost housing for developing countries.

Among the headings and sub-headings checked in the secondary sources and in the Cornell University central library catalog cards were: architecture and climate, buildings, building materials, company towns, cooperative housing, design of houses, developing countries, dwellings of laborers, environmental engineering, financing, houses, housing, housing bibliographies, housing construction methods, housing management, housing policy, housing sanitary or drainage systems, housing surveys, low-cost housing, prefabrication, roofing materials and design, rural housing, self-help, slums, squatters, tenements, town planning, wooden structures, under-developed areas, and others.

10. CONTROL NUMBER PN-AAB-045	11. PRICE OF DOCUMENT
12. DESCRIPTORS CORNELL LIBRARY, CATALOGUE CARDS, ARCHITECTURE, MATERIALS, DESIGN, ENGINEERING, FINANCE, SURVEY, POLICY	13. PROJECT NUMBER 931-11-995-137
	14. CONTRACT NUMBER AID/CSD-3158
	15. TYPE OF DOCUMENT BIBLIOGRAPHY

# **LOW-COST HOUSING FOR DEVELOPING COUNTRIES**

**An Annotated Bibliography 1950-1972**

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June, 1974

## FOREWORD

The purpose of this bibliography is to present a compilation of abstracts of a large portion of the most important publications on low-cost housing for developing countries. It represents a first attempt to put into some order much of the literature of this vast and ill-defined field. It is not an exhaustive coverage. The search was limited to English-language sources, thus omitting important material. An attempt was made to cover work in all disciplines, such as physical sciences, technology, social sciences, politics, planning, and others, as shown in the Table of Contents. It was soon discovered that the literature on this subject is completely disorganized, with no periodicals or regular publications specializing in publishing such material, and that the literature is scattered widely. Much of it exists in the hard-to-find and easily-lost governmental booklets and similar sources. As a result, this bibliography does not represent exhaustive coverage of the field or anything close to it. It is certain that much material has not been included, and probable that even some important publications have been missed. Among the greatest weaknesses are lack of appreciable foreign language coverage and probable omission of appreciable numbers of special publications by governments and similar organizations. However, most important material is probably included.

As a guide to the user, the following secondary sources were checked:

- Applied Science and Technology Index (previously Industrial Arts Index) - 1950-1971
- Avery Index to Architectural Periodicals - incomplete
- Bibliographic Index - 1951-1972
- British Technology Index - 1950-1972
- Building Science Abstracts (British) - 1945-1971
- Bulletin of the Public Affairs Information Service Index - 1950-1972
- Business Directory Index - 1958-1972
- Civil Engineering Periodical Index - 1964-1965 (ceased publication)
- Great Britain - Department of the Environment (Index to Periodicals) - incomplete
- Housing and Planning References - incomplete
- Index of Economic Journals - 1960-1971
  - a) Index of Economic Articles - Regional Planning and Development
  - b) Urban Economics
  - c) Economic Growth and Development

International Bibliography of Economics - 1952-1970  
International Index - 1955-1972  
London Bibliography of the Social Sciences - 1950-1968  
Metropolitan Communities - A Bibliographic Supplement -  
 1955-1957 and 1965-1967  
Subject Index to Periodicals - 1952-1972  
United Nations Subject Index - 1950-1972  
United States Government Publications (monthly catalog) -  
 1961-1972  
United States Government Research and Development Reports  
Index (includes Housing and Urban Development (HUD)  
international housing activities) - 1968-1970  
World Agricultural Economics in Rural Sociology Abstracts -  
 incomplete

Items that looked interesting were pulled from the secondary sources, traced to original publications where possible, and abstracted (or often the author's abstract was used if available and good). In some cases the original paper or an abstract could not be found, and the publication (if it looked important by title) was included without abstract. Coverage from the secondary sources was not exhaustive, although most of the important material is probably included here.

Among the headings and sub-headings checked in the secondary sources and in the Cornell University central library catalog cards were: architecture and climate, building, building materials, company towns, cooperative housing, design of houses, developing countries, dwellings of laborers, environmental engineering, financing, houses, housing, housing bibliographies, housing construction methods, housing management, housing policy, housing sanitary or drainage systems, housing surveys, low-cost housing, prefabrication, roofing materials and design, rural housing, self-help, slums, squatters, tenements, town planning, wooden structures, underdeveloped areas, and others. The authors of this bibliography were largely at the mercy of the indexers of secondary sources of this complex-compound field, just as the users of this bibliography are at the mercy of the authors who organized it under headings. The user would be wise to study the Table of Contents and to try all headings that might seem to be pertinent. The reader may think of subject headings differently from the indexer.

A large number of periodicals (many of them architectural) were leafed through to locate further papers not found in the secondary sources. No particular journals were especially good for the field in question, library files were often incomplete, and checking was so sporadic that no attempt is made here to list primary sources checked.

The principal index of this bibliography is arranged by subject, as shown by the Table of Contents, and each subject group is arranged alphabetically by author. Anonymous references are listed at the end of each subject group. A complete Author Index, and a Country and Regional Index, are provided at the end of this publication. In some cases organizations strongly identified with housing, such as the United Nations, may be used in the alphabetical listing by "author", so that a paper in a given subject group may be listed under "U.N." rather than alphabetically by its author(s) - but the author(s) will be listed in the Author Index as well as with the entry of the paper.

Many entries could well have been placed in any of two or more subject groups, but each item is listed only once to conserve space. Thus, a system of cross-referencing is used. At the end of each subject group (or many of them) will be found a list of reference numbers; these numbers refer to entries in other subject groups, that also pertain to the subject group in question.

As indicated by the title of this bibliography, it is directed toward developing countries, and thus the great mass of publications on housing and low-cost housing for the highly industrialized countries was omitted, except for the sizable number of such publications that seemed to apply, or could well apply, also to developing countries - for example, some industrialized housing for urban centers. Such judgements by the authors were necessarily subjective. In general, industrialized housing, high technology, and highly capital intensive schemes were omitted unless they met the above criteria.

Upon final compilation, many incomplete entries or possible errors were discovered. Because of lack of time it was not possible to check nearly all of them. The reader must assume that such errors and omissions occur. Entries which are incomplete are marked at the end with the symbol for number (#), and entries that are suspected of containing errors are marked with an asterisk (\*). For United Nations publications, the U.N. document number (not the sales number) is included when known.

The major omissions of important material are likely to include theses, university bulletins, government (and similar) bulletins, some books, and in general material not published in periodicals. Such items are difficult to discover at best, and may even be difficult to locate after being discovered.

A major source of further publications for the scholar will be the lists of references in those publications cited herein. Such lists were in general not checked, because of lack of time.

The authors wish to thank the following: Peter Cohen, Associate Professor of Architecture; James Converse, Assistant Professor of Rural Sociology; Charles Daniels, Assistant Professor of Consumer Economics and Public Policy; and Henry Richardson, Assistant Professor of Architecture, for their help in suggesting sources of literature to be checked. They wish especially to thank Dr. F. J. Ahimaz, Assistant Dean of Engineering and Assistant Director of Cornell's Program on Policies for Science and Technology in Developing Nations, for his general support and encouragement throughout the work. They thank the following for their efforts in compilation and abstracting: Nancy Levy and Erdal Atrek. They wish to thank Susan Biamonte, Mary Berens, and Tamsen Bredvold for their heroic efforts of typing and proofreading. Cover design is by Peter Cohen.

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## I. BIBLIOGRAPHIES

- I-1 Abramson, Karen - Selected References on Relocation. National Association of Housing and Redevelopment Officials, Washington, D.C. 1967. 29 pp.

Most of the references are to current literature, but "classic" references having to do with policy, legislative history, and social concepts have also been included. Annotated.

- I-2 Akin, T. - The Feasibility and Actuality of Modern New Towns for the Poor in the U.S. Council of Planning Librarians, Exchange Bibliography No. 167, Monticello, Illinois. 1970.

- I-3 Alonso, William - Innovations in Housing Design and Construction Techniques as Applied to Low-Cost Housing. National Technical Information Services, Springfield, Va. 1969.

The objectives of this report were to determine availability of published materials concerned with cost reduction innovations in the production of housing and to provide a reference list. The first part of the report provides a framework for evaluation of innovation potential in housing by examining the social aspects and design production technology and business aspects. The second part is an annotated bibliography broken down into 5 sections: 1) general works; 2) social aspects; 3) technological aspects; 4) economic aspects; and 5) HUD experiments.

- I-4 American Council to Improve Our Neighborhood - Urban Renewal Bibliography. New York. 1954. 315 pp.

- I-5 American Society of Planning Officials - Motion Picture Films on Planning, Housing and Related Subjects: A Bibliography. Chicago. Rev. 1963. 10pp.
- I-6 Baranson, Jack - Technology for Underdeveloped Areas: An Annotated Bibliography. Pergamin Press, Oxford. 1967. 81pp.
- I-7 Barr, Charles W. - Housing-Health Relationships: An Annotated Bibliography. Council of Planning Librarians, Exchange Bibliography No. 82, Monticello, Illinois. 1969. 20pp.
- I-8 Bogotá Inter-American Housing and Planning Center - Bibliografía de la Vivienda rural para América Latina. Bogotá. 1967. (in Spanish)
- I-9 Boner, Marian O. - Poverty and Housing: A Selected Bibliography. Council of Planning Librarians, Exchange Bibliography No. 128, Monticello, Illinois. 1970.
- I-10 Branch, Melville C. - Comprehensive Urban Planning: A Selected Annotated Bibliography with Related Materials. Sage Publications, Beverly Hills. 1970. 477pp. (Z5642.B7).
- I-11 Brunn, Stanley D. - Urbanization in Developing Countries: An International Bibliography. Latin American Studies Center Research Report No. 8, Michigan State University, East Lansing, Michigan. 1971. 693pp.
- Over 7000 entries.
- I-12 Burg, Nan C. - Rural Housing and Rural Poverty: A Bibliography. Council of Planning Librarians, Exchange Bibliography No. 247, Monticello, Illinois. 1971. 23pp.
- I-13 Fediuk, Simon (compiler) - Bibliography on Housing and Urban Renewal. State of New York, Executive Department, New York State Division of Human Rights, New York. 1970.
- 1200 items, written about the above subject. Also some bibliographies under "low-cost" heading.

- I-14 Freeman, Elsa S. - "Review of the Literature on Housing and Urban Development During 1964 and 1965," Special Libraries, Vol. 57, pp. 156-166 (March 1966).
- I-15 Freeman, Elsa S. - "Urban Planning and Housing Literature in 1963," Special Libraries, Vol. 55, pp. 148-56 (March 1964).
- I-16 Hedley, Alan - Privacy as a Factor in Residential Buildings and Site Development, an Annotated Bibliography. Division of Building Research, Ottawa. 1966.
- I-17 HUD (USA) - Bibliography on Housing, Building and Planning for Use of Overseas Missions of the U.S. Agency for International Development. prepared by the Library for HUD, Division of International Affairs, Washington, D.C. 1969. 43 pp.
- About 400 books and periodicals available in the U.S.  
Brief annotations where title is not self-explanatory.
- I-18 HUD (USA) - Bibliography on Mortgage Finance. Information Sources Series. September 1971.
- I-19 HUD (Housing and Home Finance Agency, USA) - Cooperative Housing in U.S. and Europe. 1950. #
- I-20 HUD (USA) - Environment and Community: An Annotated Bibliography. U.S. Government Printing Office, Washington, D.C. 1971. 66 pp.
- Presents some 300 references, mostly of American publications, with short annotations, on the environment of American cities and settled communities, arranged under the following headings: general background; architecture and urban design; community facilities; ecology: environmental quality; environmental planning; housing; land use; mental and physical health; noise; pollution; population pressures; recreation; technology (present and future); transportation and highways; and working conditions. Lists are appended of selected films and organizations, suggested periodicals and publishers' addresses.
- I-21 HUD (USA) - Films, Filmstrip, Slides and Audio Tapes on Housing and Community Development: A Selected Bibliography. 1967. #

- I-22 HUD (USA) - Operation Breakthrough: Mass Produced and Industrialized Housing, a Bibliography. 1970. #
- I-23 HUD (USA) - Urban Outlook: A Selected Bibliography of Films, Filmstrips, Slides, and Audio Tapes. Washington. 1969. #
- I-24 India National Society of Soil Mechanics and Foundation Engineering - Bibliography on Soil Stabilization. New Delhi. 1954.
- I-25 Kelly, Phyllis M. - International Bibliography of Prefabricated Housing. M.I.T., Cambridge. 1954.
- I-26 Laquian, Aprodicio A. - A Selected Bibliography on Rural-Urban Migrants, Slums and Squatters in Developing Countries. Council of Planning Librarians, Exchange Bibliography No. 182, Monticello, Illinois. 1971.
- I-27 Mather, Alan - "Recent Literature on Low-Cost Housing," Pencil Points, Vol. 21, pp. 552-4 (September 1940).
- This bibliography is divided into eight areas: general works, city planning, auxiliary buildings, social and public health aspects, planning of dwellings, site planning, review of projects and construction and materials.
- I-28 Meshenberg, Michael J. - "Environmental Planning," American Society of Planning Officials, pp. 75-8 (1970).
- I-29 Misra, Surya Kant - Building and Planning in Developing Nations. National Swedish Institute for Building Research, Stockholm. 1967. 71pp.
- I-30 National Association of Home Builders of the U.S. National Housing Center - Basic Texts and Reference Books on Housing and Construction: A Selected Annotated Bibliography. Washington. 1965. (Bibliography Series No. 71).
- I-31 National Association of Housing and Redevelopment Officials - Housing Management Bibliography. Washington. 1971.

- I-32 National Research Council, Building Research Advisory Board - Preliminary Bibliography of Housing and Building in Hot Humid and Hot Dry Climates. Washington. 1953.
- I-33 The National Swedish Institute for Building Research - Social Aspects of Housing and Urban Development: A Bibliography. Stockholm. 1969. (Document No. 3: 1969). 173pp.  
 Compiled and published in agreement with the U.N. Center for Housing, Building and Planning.
- I-34 Peattie, Lisa - Slums. Council of Planning Librarians, Exchange Bibliography No. 113, Monticello, Illinois. 1970. 4pp.
- I-35 Sanoff, Henry - A Bibliography and Critical Review of Industrialized Housing. Council of Planning Librarians, Exchange Bibliography No. 158, Monticello, Illinois. 1970.
- I-36 Sanoff, Henry and Henry Burgwyn - Social Implications of the Physical Environment with Particular Emphasis on Housing and Neighborhood Characteristics: A Bibliography. Council of Planning Librarians, Exchange Bibliography No. 145, Monticello, Illinois. 1970.
- I-37 Seaton, Richard W. - Social Factors in Architectural and Urban Design. Council of Planning Librarians, Exchange Bibliography No. 201, Monticello, Illinois. 1971. 13pp.
- I-38 Silzer, Vycki - Housing Problems, Government Policies and Housing Market Responses: An Annotated Bibliography. Council of Planning Librarians, Exchange Bibliography No. 344, Monticello, Illinois. 1972. 34pp.
- I-39 South African Council for Scientific and Industrial Research - Bibliography of Industrialized Building. National Building Research Institute, Pretoria. 1966.

A discussion of the different types of industrialized buildings is presented--evolved traditional, in situ systems, partial prefabrication, and complete fabrication. Traditional and in situ procedure use very traditional techniques, while the other two are concerned with large building elements. Building systems are also classified

as open systems (design and construction are separate) or closed systems (design and construction are integrated). The bibliography is divided into general building and specific building.

- I-40 Toizer, Alfred - Survey of Recent Housing Studies: An Annotated Guide. Council of Planning Librarians, Exchange Bibliography No. 138, Monticello, Illinois. 1970. 39pp.
- Publications selected for usefulness in defining, explaining and evaluating current Federal (US) housing programs. Based on Philadelphia.
- I-41 United Kingdom - Housing in British African Territories. Colonial Office, Colonial Publication No. 303. 1954. 40pp.
- I-42 U.N. Center for Housing, Building and Planning - Cumulative List of U.N. Documents and Publications Related to the Field of Housing, Building and Planning. U.N. Publications, New York. 1968.
- I-43 U.N. - Cumulative List of United Nations Documents and Publications in the Field of Housing, Building and Planning. List No. 12. February 1970.
- I-44 U.N. Department of Social Affairs - Low-Cost Housing in South and Southeast Asia. U.N. Publications, New York. 1951. 212pp.
- I-45 U.N. Economic Commission for Europe, Housing and Town and Country Planning Section - Selected Bibliography on Low-Cost Housing. New York. February 1965.
- A bibliography of 65 references covering the years 1948-1954.
- I-46 U.S. Communicable Disease Center, Atlanta Training Branch - Housing and Health, a Bibliographical Collection of Annotations, Abstracts and Comments. 1959.
- I-47 Verhaegen, Paul - Le Problème de l'Habitat Rural en Afrique Noire. Enquêtes Bibliographiques, Fascicule III, Centre de Documentation Economique & Sociale Africaine, Bruxelles. 1960. 73pp.
- 433 entries in many languages.

- I-48 Wheaton, W.L.; Baer, William C.; & Vetter, David M. - Housing Renewal and Development Bibliography. Council of Planning Librarians, Exchange Bibliography No. 46, Monticello, Illinois. 1968. 44pp.
- I-49 Winne, Robert - Bibliography on Squatter Settlements, Urbanization in Developing Countries. Rensselaer Polytechnic Institute. 1969.
- I-50 Anonymous - Bibliography on Housing, 1960-1964. Association of Engineers and Architects in Israel, Documentation Department, Building Center, Haifa.\*
- I-51 Anonymous - Bibliography on Prefabricated Concrete Construction, especially in Housing Construction. Deutsches Bauzentrum No. L.Z. 204, Stuttgart. 1956.\*
- I-52 Anonymous - Inter-American Seminar on Cooperative Housing. Annuals, 1968. Rio de Janeiro Department of Cooperative Projects of National Housing Bank. 1968.
- I-53 Anonymous - 1954 Supplement to Preliminary Bibliography of Housing and Building in Hot Humid and Hot Dry Climates. Bureau of Engineering Research and U.S. Building Research Advisory Board, University of Texas, Austin, Texas. Bureau of Engineering Research, Special Publication No. 28. 1954. 160pp.

## II. GENERAL REFERENCE BOOKS

- II-1 Abrams, Charles - Man's Struggle for Shelter in an Urbanizing World. (also Housing in the Modern World). M.I.T. Press, Cambridge, Mass. 1964. 307 pp.

Population inflation and urban invasion; squatting and squatters; the urban land problem; the growth of government power and policy; obstacles to progress in housing; the problems of administration and personnel; aid-experts and "inperfs"; economics and housing; background of public policies; proposals for solving the problem; the problem of finance; self-help, core housing and installment construction; the roof loan scheme; education and research; a university is born in the Middle East; development planning and housing; the role of aid programs; land ideologies and land policies; communism, lebensraum, housing and cities.

- II-2 Abrams, Charles - The Future of Housing. Harper and Brothers, New York. 1946. 428 pp.

Includes a bibliography, deals with the U.S.

- II-3 Breese, Gerald (ed.) - The City in Newly Developing Countries. Prentice Hall, Englewood, New Jersey. 1969.

- II-4 Doxiadis, Konstantinos A. - Ekistics: An Introduction to the Science of Human Settlements. Oxford University Press, New York. 1968. 527 pp.

Human ecology, regional planning.

- II-5 Oliver, Paul (ed.) - Shelter and Society. Praeger, New York. 1969. 167 pp.

Contains illustrations, maps and plans. Anthology on issue of housing the masses in various societies.

- II-6 Oliver, Paul (ed.) - Shelter in Africa. Praeger, New York. 1971. 240 pp.

Deals with building forms and their relation to community life in traditional settings, as well as in urban areas. Problems of slum housing in relation to

urbanization are discussed in detail and some examples of housing improvement in selected countries are also discussed: includes illustrations, maps, photographs, design types, bibliographies.

- II-7 Pawley, Martin - Architecture vs. Housing. Praeger, New York. 1971. 128pp.

Concerned with mass housing, the public sector, industrialized structures, redevelopment projects, technology and environment. Deals mostly with developed countries.

- II-8 Rapoport, Amos - House Form and Culture. Prentice-Hall, Inc., Englewood Cliffs, New Jersey. 1969.

Proposes a conceptual framework for looking at the great variety of house types and forms and the forces that affect them. Includes photos and diagrams.

- II-9 Turner, John F.C.; & Fichter, Robert (eds.) - Freedom to Build: Dweller Control of the Housing Process. The MacMillan Company, New York. 1972.

From a variety of perspectives, the authors examine the participation or lack of participation of dwellers themselves in building. Their conclusions, in brief, are that as dwellers lose control over their living environments, shelter becomes a commodity of reduced value to the individual and often an inordinate expense to society. Deals with low-income housing and developing nations as well as housing in general.

- II-10 U.N. - Housing, Building and Planning: Problems and Priorities in Human Settlements; report. New York. 1970. 83pp. (JX1977.192 SUBSER)

- II-11 Anonymous - Housing Research and Building Technology Activities of the Federal Government. U.S. Office of Science and Technology, Executive Office of the President, U.S. Government Printing Office, Washington, D.C. 1970. 115pp.

Includes information on current (1970) housing and building research and development programs of the Federal Government. Covers the Departments of Agriculture, Commerce, Defense, HEW, HUD, Labor, as well as Atomic Energy Commission, Office of Economic Opportunity, General Services Administration, Post Office Department and the Veterans Administration; also coordinating and review mechanisms among agencies.

### III. PLANNING

#### IIIA. Urban

- IIIA-1 Calderwood, D.M. - "Town Planning and Housing with Particular Reference to the Social and Economic Aspects," (with discussions) Transactions of the South African Institution of Civil Engineers, Vol. 8 (Nos. 8 & 12), p. 7 (August and December 1958).\*

- IIIA-2 Doxiadis, K.A.; & Hagjopoulos, A. - "Housing and Urban Planning in the Economic Development of Venezuela," Ekistics, Vol. 13 (No. 76), pp. 81-85 (February 1962).

Report of an economic survey mission to Venezuela organized by the International Bank for Reconstruction and Development. This extract of the report discusses the general housing problem, both physical and financial. Also recommends institution of urban planning.

- IIIA-3 Floyd, T. - "A Study of Township Layout with Particular Reference to Costs of Services," South African Architectural Record, Vol. 29, pp. 299-309 (Dec. 1944).

- IIIA-4 Fraser, J.M. - "Housing in Hong Kong," Chartered Surveys, Vol. 96 (No. 8), pp. 391-5 (Feb. 1964).

Housing program in Hong Kong is aimed at providing accommodation for residents living in overcrowded and unsatisfactory conditions; multi-storey apartments built under program consist of 1 room of varying size at rate of 35 sq. ft. per person plus self-contained kitchen, toilet and working veranda. Estates are planned as neighborhood units with their own shopping centers.

- IIIA-5 Herbert, John D.; & Van Huyck, Alfred P. (eds.) - Urban Planning in the Developing Countries. Planning & Development Collaborative International. Praeger, New York. 1968. 122 pp. (with bibliography).

- IIIA-6 Hernandez, Zacarias; & Omar, Emilio - Urban Planning and Squatter Area Development. Ithaca, N.Y. 1968.

The purpose of this paper is to examine urbanization in Latin America with particular emphasis on the emergence of squatter settlements in large urban areas. The report attempts to develop a conceptual model

of squatter development in order to formulate and implement planning policies. The report is divided into three sections with the first section analyzing the problem, the second section dealing with urban planning and the third section dealing with a conceptual model and planning strategy. Two goals are determined in relation to planning objectives; integration of squatter settlements; efficient resource use devoted to squatter settlements.

IIIA-7 HUD (USA) - Urban Planning in Developing Countries. by Lloyd Rodwin. Ideas and Methods Exchange No. 61, Washington, D.C. 1965. 58 pp.

IIIA-8 Lam, Anna P. - The Problem of Housing Density in Hong Kong with Reference to Decentralization. Thesis, McGill University, Montreal. 1957.

IIIA-9 Lock, Max - "Mr. Max Lock on India," Journal of the Town Planning Institute, Vol. 38 (No. 7), pp. 174-6 (May 1952).

Need for planners and a comprehensive town and village planning act. Discusses a variety of construction methods briefly.

IIIA-10 Mocke, W.C. - "Site and Service Schemes," Journal of the Institution of Municipal Engineers (South African District), Vol. 1 (No. 9), pp. 50-58 & Discussion, pp. 58-62 (Jan. 1956).

Planning and layout of Bantu urban residential areas in South Africa -- realistic approach toward solving Bantu housing backlog.

IIIA-11 Oldman, Oliver; et al. - Financing Urban Development in Mexico City: A Case Study of Property Tax, Land Use, Housing and Urban Planning. Harvard University Press, Cambridge, Mass. 1967. 356 pp.

Focuses on the fiscal aids and restraints affecting land use in Mexico City. Examines in some detail the property tax, other burdens on real property, including rent control, private credit sources, and mechanisms for financing land development. Also, the problem of planning and controlling land use patterns in Mexico City are reviewed, but in less detail. Of particular interest is the section: mobilizing private credit for low-cost homes, pp. 177-200.

IIIA-12 Organization of American States, Inter-American Economic and Social Council - Inter-American Technical Meeting on Housing and Planning. 2nd Meeting. 1958. Final Report. Washington, D.C. 1959. 580pp.

IIIA-13 Rosall, Nolan L. - A Methodological Approach to the Planning for Low-Income Neighborhoods. Thesis. Cornell University, Ithaca. 1966.

Theory on the study of the composition, socio-economic, physical, cultural...of slums--uses Syracuse, New York, as case study--implications of findings for the planner.

IIIA-14 Spengler, Joseph - "Population Pressure, Housing, and Habitat," in Alfred Page and Warren Seyfried (eds.) Urban Analysis: Readings in Housing and Urban Development. Scott, Foresman, Glenview, Illinois. 1970. 427pp.

IIIA-15 Turner, John F.C. - "Housing Priorities, Settlement Patterns and Urban Development in Modernizing Countries," Journal of the American Institute of Planning, Vol. 34, pp. 354-363 (Nov. 1968).

IIIA-16 Twichell, Allan A. - "Measuring the Quality of Housing in Planning for Urban Redevelopment," in Woodbury, Coleman (ed.), Urban Redevelopment Problems and Practices. University of Chicago Press, Chicago. 1953. \*

IIIA-17 U.N. - "Urban Land Problems and Policies," Housing and Town and Country Planning, Bulletin No. 7, by Charles Abrams, 182pp. (1954). [ST/SOA/SER.C/7]. \*

A useful compilation of descriptive material on urban land tenure and policies in 13 nations with an analytical essay by the editor. Not limited to questions on housing and redevelopment.

IIIA-18 Vagale, L.R. - "Neighborhood Planning & its Relation to Housing," Indian Builder, Vol. 12 (No. 12), pp. 148-51 (December 1964).

A discussion of the neighborhood as the "minimum geographic and planning unit, which contains the basic utilities, services, and community facilities and which provides a physical form available for the full development of individual life, family life, and community life". (p. 148) Covers the development of this idea, and a discussion of the pros and cons of neighborhood planning.

- IIIA-19 Wiener, P.L. ; et al. - "Town Planning in Latin America," Architecture d'Aujourd'hui, Vol. 21 (No. 33), pp. 3-78 (1951).

The following papers are presented in this Symposium:  
 "Town Planning in Latin America" by P.L. Wiener and J.L. Sert; "Four master plans for South American towns--Medellin (Colombia), Tumaco (Colombia), Chimbote (Peru) and Lima (Peru)" by P.L. Wiener and J.L. Sert; "Housing Scheme at Pedregulho, Rio-de-Janeiro" by A.E. Reidy, F. Bolonha and others;  
 "The town-planning extension scheme for the centre of Rio-de-Janeiro (La Butte Santo Antonio)" by A.E. Reidy;  
 "Town planning in Venezuela" by M. Rotival; "New master plan for Bohia Blanca, Argentina" by E. Gebhard and M.C. Roca. The proposed plans for housing and urban construction are described and supplemented in each case by illustrations, plans, and photographs of models. English versions of the substance of each paper are printed separately.

- IIIA-20 Yi, Daniel Aung - A Study for the Urban Redevelopment of Burmese Slums and Blighted Areas. Thesis, Cornell University, Ithaca, New York. 166pp.

- IIIA-21 Anonymous - "Housing and town and country planning in the U.K. Dependencies," Central Office of Information. London. 1960. 52pp.

A general survey of the main administrative problems encountered in organizing adequate housing in the dependencies, and a review of the growth of governmental responsibility in respect to modern ideas of housing and town planning as sponsored by the State. Achievements so far are summarized under the headings: organization of housing, housing finance, rental housing, home-ownership, rural housing and housing of special groups. There are also chapters on building methods, materials and standards, training and research, and international co-operation.

For further references on this topic, see items:

I-10, I-15, IV-34, VIA-6, VII-1, VII-4, VII-6, VII-14, VIII-2, XIV-2, XIV-14, XIV-27, XVIA-5, XVIB-1, XVIB-4, XXIII-17, XXIII-18, XXIII-27, XXIII-29, XXV-3, XXV-29.

#### IIIB. Other

- IIIB-1 Bergman, P.A. - "Construction of Large Industrialized Projects," Byggmastaren, Vol. 47 (No. 4), pp. 13-22 (1968). (in Swedish).\*

Describes a planning method of building a low-cost estate of more than 1,000 dwellings, based on the following: (1) the project must be planned as a unit and have a high degree of uniformity; (2) the labor is restricted in size; (3) the production cost must be low and based on the local price level.

- IIIB-2 Calderwood, D.M. - Principles of Mass Housing. Cape and Transvaal Printers, Johannesburg. 1964.

Based on a series of lectures on housing delivered to post-graduate students in South Africa on the topic of town and regional planning. In South Africa the problem is to build 35,000 units per year until 1973. In the lectures, Calderwood discusses development costs, building organization, housing services, accommodation standards and regional planning. Housing is not just discussed as the physical unit, but also in its relation to the family. There are 11 specific chapters ranging from densities to landscapes. His conclusion--the wide investigation field needs to be studied.

- IIIB-3 Dower, Robin; & Stungo, Adrian - Regional Planning and Housing in Israel. The Anglo-Israel Association, London. Pamphlet No. 8. 1965. 53pp.

National planning policies; The new towns and industrial development; Housing in new towns; Who builds?; Present and future housing trends; Building construction; The influence of Climate on Housing.

- IIIB-4 Foley, R.M.; Puissant, A.; and others - Housing and Town and Country Planning. United Nations Department of Social Affairs, Lake Success, New York. Bulletin 3. February 1950. 118pp.

The bulletin contains the following reports, as well as a series of anonymous articles on the general aspects of housing and town planning in some of the countries which are members of the United Nations: "Evolution of the United States housing programme" by R.M. Foley; "Housing and town planning in Belgium" by A. Puissant; "Low-cost Housing in Tropical Areas--new materials and methods of construction," by J.P. Thijsse; "Vista Hennosa Housing Project" by J. Jimenez. The grave housing shortage in Panama City is complicated by the limited area available for horizontal expansion. The problem is being solved and the community made self-sufficient by the help of the Banco de Urbanización y Rehabilitación which defines housing needs, selects sites, develops tenant selection procedures, sets minimum standards of design and occupancy, and investigates methods of design and construction suitable for the tropical climate. Some sanitation problems and the use of economical building materials (concrete blocks, asbestos-cement sheeting, etc.) are discussed briefly. The latter half of the Bulletin consists of summaries of selected references taken from periodicals published during 1948 dealing with town and country planning, housing community facilities, materials and methods of construction, services and equipment.

- IIIB-5 Fraser, Douglas - Village Planning in the Primitive World. Braziller, New York. 1968. 129pp. \*
- IIIB-6 HUD (USA) - Planning for Sites and Services Programs. by Alfred P. Van Huyck. Office of International Affairs, Washington, D.C. Ideas and Methods Exchange, No. 68. 1971. 67pp.

The author draws on his observations and the experience of others to analyze reasons that sites and services projects should be a major part of the urbanization program of the developing countries as well as to discuss the lessons to be learned from previous worldwide experience with the sites and services concept. He proposes a method for planning the sites and services project and suggests how the individual project should be thought of in the context of a national program.

- IIIB-7 Lifchez, Raymond - "Master Plan Study Gives East Pakistan New Approaches for Tropical Architecture," Architectural Record, Vol. 144, pp. 153-160 (September 1968).

This article examines a master plan for the expansion of five technical institutes in East Pakistan. The new facilities will demonstrate architecture as rational building based upon knowledge of the environment and the life style of the people. The building program was comprised of several parts. The first phase found that geography and climate could be more easily interpreted into built form than cultural concepts. Since the planning was done in various progressive steps, the initial steps could be applicable to any building in Pakistan. A "kit of parts" was evolved, which presents rationally formulated configurations that can be interpreted in response to a given program and site.

- IIIB-8 Stringer, Richard - Planning and Development in Rural Areas in an Increasingly Urbanized Society. International Federation for Housing and Planning, The Hague. Conference Papers No. 1. 1969.
- IIIB-9 UN Technical Assistance Administration - Community Planning & Housing for the Pallikaranai Project, Madras, India. A Demonstration of "The Rural City." Report and Recommendation of a U.N. Expert. 1952. 143pp. [ST/TAA/K/INDIA/1] #
- IIIB-10 UN Department of Economic and Social Affairs - Local Participation in Development Planning: A Preliminary Study of the Relationship of Community Development to National Planning. New York. 1967. [ST/SOA/77]
- IIIB-11 UN Economic and Social Council, Economic Commission for Africa, Housing Problems in Africa - The Relevance of Regional Physical Planning to the Urban Housing Problem in the Developing Countries. prepared by Mario E.F.C. Carvalho. New York ?. 1969. 11pp. [E/CN.14/HOU/38]

For further references on this topic, see items:

- IV-30, IV-40, VII-1, VII-14, IX-3, IX-4, XIII A-1, XIX A-13, XX-21, XX-23, XXIII-4, XXIII-72, XXV-5.

## IV. DESIGN

- IV-1 Alexander, Christopher; & others - Houses Generated by Patterns. Center for Environmental Structure, Berkeley, California. 1969. 219pp.

Domestic Architecture - Peru, designs and plans.

- IV-2 Billig, K. - "Problems of Low-Cost Housing in India and South East Asia," Civil Engineering, Vol. 48 (No. 581), pp. 1208-10 (1954). (London)

Methods of increasing the production and effective use of local materials (lime, pozzolanas, soil, bricks, gypsum, timber, bamboo, thatch and roofing tiles) are examined, as well as methods and techniques of constructing more low-cost houses in India and S.E. Asia. A short account is given of the housing situation, especially in the villages, with some indications of ways of controlling land development and use in and around cities. The human aspects of design are also considered in relation to the fixing of housing standards. The report is based on the activities of the "United Nations Seminar on Housing and Community Improvement" held recently in New Delhi and on the Government on India's International Exhibition on Low-Cost Housing.

- IV-3 Brolin, Brent; & Zeisel, John - "Mass Housing: Social Research and Design," The Architectural Forum, Vol. 129 (No. 1), pp. 66-71 (July/August 1968).

A prototype study in which observations on social behavior are translated into requirements for appropriate architecture.

- IV-4 Caprihan, S.P. - "A Low-Cost House (for Indian families)," Indian Concrete Journal, Vol. 28 (No. 10), pp. 409-11 (1954).

Design and construction details of the prizewinning design in the all-India Competition. Walls are of local bricks and are combined with pre-cast reinforced concrete frames and beams with a concrete floor and roof. The house is suitable for mass production.

- IV-5 Childs, D. Rigby; & Whittle, J. - "Space and Housing, A Study of Environment and Density," Archit. (Build.) Journal, Vol. 132 (No. 3412), pp. 349-363 (1960).

A detailed study of present methods of applying density standards in terms of their effect on environment, and of the way in which good environment and scope for ease of movement can be provided in town-planning schemes. Present practice in using density standards in development plans is regarded as grossly inadequate and in need of review. It is explained how densities should preferably be controlled by: a) the sliding scale for local housing units, b) town density, and c) town ratio (green belt area/town area). Plans and photographs are shown of four different housing schemes covering low (30-60), low-medium (61-100), medium-high (101-140) and high (141-200 persons per acre) density groups, respectively. Factors determining the size of a particular housing development at the present time are considered to be not only the population required to suit the educational structure, but also the relationships between density, spread and either congestion or a livable environment. Finally, some of the arguments for a new approach to the problem of residential density are marshalled.

- IV-6 Danz, Ernst - Sun Protection; An International Architectural Survey. F.A. Praeger, 1967. 149pp. (same as Architecture and the Sun: An International Survey of Sun Protection Methods. Thames and Hudson, London. 1967.)

Text in English, German and Spanish.

- IV-7 Dean, John P. - "Housing Design and Family Values," Land Economics, Vol. 29, pp. 128-41 (May 1953).

This article discusses the way housing design can affect family life. Housing design, it is proposed, can modify the number and types of social environments family members are exposed to. The article elaborates on three hypotheses: influence of dwelling unit orientation, effect of allocating living functions produced by design, and relation of intra-dwelling unit interaction to family values. The hypotheses discussions go into great detail.

- IV-8 Doxiadis, Konstantinos A. - Architecture in Transition. Hutchinson, London. 1963. 200pp.

- IV-9 Foyle, A.M. - "Building in Nigeria," Architectural Journal, Vol. 111 (No. 2882), pp. 549-52 (1950).

An illustrated account is given of the various types of housing under construction in Nigeria. Houses for African staff are usually based on a standard room size of 12' by 10', the number of rooms varying with the salary of the occupant and the maximum number of houses placed together being three, with a continuous verandah along the whole front. Model villages for coal miners comprise two and four-room blocks on plots 60' by 40' and 60' by 80', respectively, flexibility of accommodation being obtained by means of doors in the partitions. Separate kitchens are at the back of each house and there are communal lavatories and wash houses. Three-storey blocks of concrete flats with nine two-room flats on each floor have been built for policemen near Lagos. In Northern Nigeria semi-detached houses for Moslem occupants are built of local stone with dressed copings and are grouped around a compound or courtyard; openings in the external walls are kept to a minimum. Houses for Europeans were originally lavishly planned and built on the assumption that servants would be kept, but the present practice is confined to the building of compact bungalows having one to three bedrooms or of three-storey blocks of flats, each flat having living-room, two bedrooms and kitchen. Most houses built under Government control are of traditional construction but for emergency housing at minimum specification cement-stabilized laterite or pressed-mud blocks 18 by 6 by 6", are used for walls and rendered externally with "Dutch plaster" (6 sand: 4mud: 1 cement). Bricks are rarely used because they are often under-burnt and of poor quality, but stone is used where available. Most permanent building is done with sandcrete blocks (pressed & cured on site) supplemented by pre-cast & in situ concrete with roofs of asbestos cement, tiles, or aluminum sheet.

- IV-10 Frean, R. Merle - "Aesthetics in the Planning and Layout of Low-Cost Native Housing," South African Architectural Record, Vol. 42, pp. 22-34 (January 1957).
- IV-11 Habraken, N. - Supports: An Alternative to Mass Housing. Praeger, New York. 1972. 97pp.

Deals with industrialized building, apartments.

- IV-12 Hall, Edward T. - The Hidden Dimension. Doubleday, Garden City, New York. 1966. 201pp.

Space perception, space and time -- with bibliography.

- IV-13 Hare, A.F. - "Housing in India and the Near East," Architectural Builder, Vol. 197 (No. 4236), pp. 219-21 (1950).

The question of establishing basic structural and insulation standards for house construction in India, Egypt, Israel and other Near Eastern countries is discussed. The following aspects are considered: total immediate housing requirements; total labor force available for building; availability of materials; the present social standard; costs relative to incomes, rents, subsidies and, if necessary, to the amount of imported materials. Plans for typical permanent houses having floor areas of 26.5 (India), 50 (Egypt) and 26 to 30 sq. m. (Israel) are shown and compared.

- IV-14 HUD (Housing and Home Finance Agency, U.S.A.) - A Demonstration of New Techniques for Low-Cost Small Home Construction. by Raymon H. Harrell and James Lendrum. Housing Research Paper No. 29. Washington, D.C. 1954.

Plans, directions and new techniques (as of 1954) for building in the U.S.

- IV-15 HUD (Housing and Home Finance Agency, U.S.A.) - Manual on Design for Low-Cost and Aided Self-Help Housing. Office of International Housing, Washington, D.C. Ideas and Methods Exchange No. 37. 1957 (reprinted 1961). 45 pp.

Pamphlet includes approximately 21 plans and cost analyses of houses that have been built under self-help housing programs in many different countries.

- IV-16 HUD (USA) - Report on the Transitional Housing Experiment: Rosebud Indian Reservation. Low Income Housing Demonstration Program. Washington, D.C. 1969. 43 pp.

Research design and findings of an experiment conducted at Rosebud Sioux reservation in South Dakota - resulted in new homes for 375 families - gives information on housing design, average cost, acceptance of low-cost design. Prefabs used.

- IV-17 India (Government), Ministry of Works, Housing and Supply - Model Houses Constructed in the International Exhibition on Low-Cost Housing, 1954. Delhi. 1955. 139pp.

Booklet covers photographs, plans and specifications of the various house designs with special features on building materials and cost estimates included. Illustrated.

- IV-18 India (Republic), Ministry of Works, Housing and Supply, Comfort Survey Committee - Report on Low-Cost Housing. National Building Organization, New Delhi. 1957. 146pp.

Report studies design and performance of houses constructed for the international exhibition on low-cost housing, New Delhi, 1954. Also includes the principles which govern the design of low-cost houses in a hot region (both arid and humid).

- IV-19 India (Republic), Ministry of Works, Housing and Supply - Rural Housing Manual. New Delhi. 1962. 79pp.

Emphasizes design, aided self-help, use of local building materials, crafts and skills - also sanitation - gives designs for the ideal village incorporating all recommendations of self-help, etc... Plans for entire village as well as individual houses.

- IV-20 Kanvinde, A. - "Regional Housing Traditions," Architectural Review, Vol. 150, pp. 372-3 (December 1971). (India)

- IV-21 King, R.S. - "Town Houses for Tanganyikan Africans," Corona: The Journal of Her Majesty's Overseas Service, Vol. 5 (No. 11), pp. 411-5 (1953). (London)

- IV-22 Lord, P. - "The Results of Application of Simple Acoustic Principles to Low-Cost Housing with a View to Reducing Loss of Comfort due to Noise," Applied Acoustics, Vol. 3 (No.2), pp. 145-160 (1970).

An attempt has been made to solve some of the sound insulation problems which arise in low-cost housing. The lack of privacy becomes much more serious in small houses when the family lives in close proximity to one another and to their neighbors. The possibility of improving the sound insulation of walls, floors, doors and windows has, therefore, been closely examined and the possible redesign of the warm air ducting and

positioning of electrical power sockets and lighting switches considered. The structural modifications which have been carried out are summarized, sound insulation measurements are presented in graphical form and the resulting improvements are examined.

- IV-23 Nickson, R.S. - "A Modern Nigerian House," Building, Vol. 25 (No. 11), pp. 410-20 (1950).

The six-roomed house described and illustrated was built in Ikoyi, Nigeria. The wall framework is of cement-mortar cellular blocks. The ground floor is of 6" concrete hardcore, whilst first floor, front columns and verandah hoods are of reinforced concrete. The roof is constructed of timber trusses and purlins covered with corrugated asbestos-cement sheets. A unique feature is the curvilinear staircase lighted by means of cruciform openings fitted with glass louvres in the external wall, thus providing ventilation for the interior of the house. The staircase balustrade is of aluminium, the treads are of mahogany and the risers of terrazo. Kitchen and garage form a separate block connected with the house by a covered way.

- IV-24 Oakley, David - "Design of Low-Cost Housing in Relation to Local Conditions," Indian Builder, Vol. II (No. 12), pp. 122-28 (1963).

Aims of housing policy: "the right houses in the right place at the right time". Divides housing standards into 2 main groups: a) "those standards which define the performance required of the building as a whole, i.e. stability, resistance to earthquakes, etc... and the building elements and materials; b) "those...which define requirements for health and comfort. Need for the designer of a "low-cost" house to know the way of life of the people for which he is designing. Comments on materials and methods. Two ways to approach the problem of "the high cost of 'low-cost' houses".

- IV-25 Ratcliff, Richard U. - "Housing Standards and Housing Research," Land Economics, Vol. 28 (No. 4), pp. 328-32 (November 1952).

Would be no housing problem without standards which imply a socially acceptable minimum -- these are effective absolutes. Basis of standards determination found in human values -- only valid in relation to people exposed to them -- involves culture.

Research can develop measures of design criteria many of which can be quantified (i.e. cost) in relation to consumer preference and decisions.

- IV-26 Rice, Norman N. - "The Minimal House: A Solution by Le Corbusier and P. Jeanneret, Architects," The Architectural Record, Vol. 68, pp. 133-7 (1930).

Two architects bring a solution to the problem of designing "a dwelling that will be hygienic, water-tight and of sound construction, offering a high standard of living within the workingman's income". The solution is a unit which has sliding panels and folding beds. Steel is used for the main structural members. Plans of the unit and construction details are given.

- IV-27 Rudofsky, Bernard - Architecture without Architects: An Introduction to Non-Pedigreed Architecture. The Museum of Modern Art. distributed by Doubleday, Garden City, New York. 1964. Unpaged.

Based on exhibition shown at the Museum of Modern Art, Nov. 9, 1964 to Feb. 7, 1965.

- IV-28 Toye, L.G. - "Suggested Designs of Two-Room Houses For Hot Humid Climate," Journal of National Building Organization, pp. 35-43 (June-Sept. 1956). (India)

- IV-29 Vinluan, L.O. - A Study on House Building Costs. Building and Road Research Institute, Ghana Academy of Sciences, University P.O. Box 40, Kumasi, Ghana. Aug. 1968. \*

Deals with the components of the cost of housing for the lower middle income group in the urban area of Ghana. Describes how to design durable low-cost housing with all the amenities for improved living conditions, but using available building materials as far as possible.

The report is of value to architects, builders and local authorities.

- IV-30 Welch, C.D. Tod - "Design of low-cost housing for the low to middle income groups: a preliminary investigation with emphasis on housing development schemes," South African Architectural Record, Vol. 48, pp. 9-14 (October 1963).

Low-cost housing for Europeans is possible only by decreasing the size of the houses; either external walls or roofing form the highest single percentage cost, so that the introduction of prefabricated wall units is advocated. Both 2 and 3 bedroom houses are provided to maintain neighborhood balance, but a master plan, embracing the housing scheme in its entirety, is necessary, based on formulation of carefully considered design criteria applied both to separate units and to the scheme as a whole. A cost analysis of the 2 - 3 bedroom house of similar materials and construction is reported.

- IV-31 West Bengal (Government) - Low-Cost Housing: Designs for North Bengal. Metropolitan Planning Organization, Siliguri, West Bengal. 1969. 14 pp.
- IV-32 Anonymous - "Estadio Neighborhood, Arica," Architectural Design, Vol. 34, pp. 186-7 (April 1964). \*
- IV-33 Anonymous - "Family Life in High Density Housing," The Builder, Vol. 192, pp. 1090-93 (June 14, 1972).

Architectural design of all types.

This article presents the summaries of the principal papers presented at the Royal Institute of British Architects' Symposium in May of 1957. Five articles were presented: "The Problem as Seen by a Town Planner," "The Housing Management Point of View," "The Solution of the Problem in Stockholm," "The Problem as Seen by a Sociologist," and "The Detailed Design of Site Layout Including Landscaping". These articles attempt to define high density housing, examine how it affects the occupants, and determine its feasibility.

- IV-34 Anonymous - "Higher Density or More Dispersal: A Note on Some Relative Costs," Town and Country Planning, Vol. 24, pp. 259-266 (July 1958).

This article discusses whether suburbanization or city-rebuilding would be the most economical method of dealing with the rehousing of families in poor quality city units. Various variables were contrasted for each method, such as building costs, subsidy rates, schools and public buildings, and transportation costs. It was determined through a variety of economic analyses that dispersed housing would be the least expensive method.

- IV-35 Anonymous - "Homes for the Poor of Peru," Architect's Journal, Vol. 150, pp. 1196-9 (November 12, 1969).

Quotation and discussion of the brief for the competition for housing urban poor in Peru. Results of the competition. Competition drawings of the winning firm showing firm's design philosophy in housing.

- IV-36 Anonymous - "Houses--Architect and Builder," Architectural Forum, Vol. 95 (No. 4), pp. 195-226 (October 1951).

Ways to improve low-cost housing by improving floor plan circulation and kitchen; examples show possibilities of cutting costs by simplification and prefabrication.

- IV-37 Anonymous - "Laborers House Development in Chile," Arts and Architecture, Vol. 66, p. 37 (April 1949).

This article presents the physical plans for houses for laborers in the central zone of Chile that were designed by Horacio Ace Vedo. The units were built on the form of the Chilean National Agricultural Society, an institution that desires to raise living standards for its workers. The units are designed for the large size of Chilean families, and also incorporate the Chilean culture into the design. Garden space is provided so families may grow their own vegetables. Floor plans are included.

- IV-38 Anonymous - "The Low-Cost House," The Architectural Record, Vol. 79, pp. 80-170 (February 1936).

The entire February issue is devoted to the low-cost private house. Four areas are examined: architectural standards, mechanical equipment, placing mechanical equipment, and appropriate construction materials and methods. The cost range is \$2,400-10,000 and is designed for a family of four persons. Standards of size, planning economy, and character of the house are discussed. A very detailed list of costs and exact construction materials is also examined. The size, function, etc. of each room in the house is examined. Furnishings for the house are presented. The last section of the issue provides a portfolio of low-cost homes.

- IV-39 Anonymous - "The Low-Cost House," The Architectural Forum, Vol. 70, pp. 233-320 (April 1959).

The forum devotes an issue to providing a home for \$30-40 per month. The issue is divided into seven sections: plan and design, construction, labor cost, quantity production, land and services, carrying charges, and case studies. A detailed housing market analysis is presented, as well as floor plans, over views, and exact construction methods. The last section of the article presents 50 recently built homes ranging in cost from \$25-40 per month.

- IV-40 Anonymous - "Low-Cost Housing Exhibition," MARG, Vol. 7 (No. 2), pp. 49-61 (March 1954).

The article is divided into six sections: a report on the exhibition, a discussion of planning problems, plans for housing the masses, approaches to rural housing, requirements in housing design and "dexion". The exhibit showed many designs and numerous ones even solved the problem of a roof adequately and inexpensively. Various government planning problems are discussed and it is ascertained that building costs are the biggest obstacle. The housing design section analyzes the role of the kitchen lighting types, roof design and numerous other variables. For slum clearance projects, dexion, a new construction material, is being used. The merits of dexion are discussed. Also includes a photograph of units from the exhibition.

- IV-41 Anonymous - "Low-Cost Housing in New Zealand: Winning Competition Designs," The Builder, Vol. 185 (No. 5768), pp. 553-576 (October 1953).

Illustration of the winning designs in the New Zealand Low-cost housing competition. The three best designs were discussed briefly with accompanying photographs and floor plans. There were no cost analysis or construction techniques presented.

- IV-42 Anonymous - "Minimal House," The Japan Architect, Vol. 34, p. 7074 (July 1959).

Very small house designed to meet needs of young people seeking a house. Photographs, floor plans, and building techniques are included. No mention is made of costs.

- IV-43 Anonymous - "Neighborhood Group," Progressive Architecture, Vol. 36, pp. 104-9 (August 1955).

In Rio de Janeiro the city is financing and constructing a neighborhood group for municipal employees, including schools, shopping facilities, community facilities, and recreational facilities. The objective of the project is to provide comfortable housing and independence of Rio's public transportation system. The article discusses the buildings' physical design and includes floor plans and photographs.

- IV-44 Anonymous - "Urethane Foam Teams up with Aluminum in New Panel Building System," Modern Plastic, Vol. 47 (No. 7), p. 138+ (July 1970).

Development of a prototype four bedroom house fabricated from aluminum panels insulated with rigid polyurethane foam. This model is the forerunner of homes that can be factory produced in under one hour and are erected in two to three weeks. New panels are manufactured on an assembly line which produces 5,000 sq. ft. in 42 minutes. The panels are a sandwich composite of aluminum, urethane and hardboard (masonite, for example) for the interior. The houses' floor area is 1,500 sq. ft. It requires 72 wall panels and 32 roof panels. Neither wood nor nails were used to build the house. Also, aspects of new houses are discussed.

- IV-45 Anonymous - "Urethane wall system halves construction costs," Plastic World, Vol 28 (No. 7), p. 41+ (July 1970).

Brief description of a three-step foam-processing method developed for manufacture of one-piece dual-density urethane walls incorporating interior and exterior finishes. System developed includes design and design aids, mold making instructions, materials formulation and specifications for various applications and all necessary manufacturing equipment. Economic advantages of new system are outlined.

For further references on this topic, see items:

I-3, II-8, VB-7, VC-5, VC-14, VC-15, VE-24, VIB3-6, VII-6, IX-5, IX-11, XII-2, XIII A-8, XIIC-8, XIV-19, XIV-20, XIV-22, XVID-3, XIX A-1, XIX A-2, XIX A-6, XIX A-14, XIX A-15, XIX A-19, XIX A-20, XIX A-21, XIX A-26, XIX C-2, XIX C-3, XX-3, XXI-11, XXII-2, XXIII-12, XXIII-30, XXIII-86, XXIV-7, XXIV-23, XXV-27.

## V. MATERIALS OF CONSTRUCTION

### VA. Concrete

- VA-1 Billner, K.P. - "Low-Cost Concrete Housing," Concrete, Vol. 61 (No. 3), pp. 30-2 (March 1953).

It is much more economical to precast buildings than to set up forms, fill them and tear them down; built in recent experiments in Bogota, Colombia, in which walls were precast horizontally on platform, reinforcement consists of 3/16 x 12/12 in. mesh-curved roofs 1-1/4" thick are precast. Houses 50' x 16' containing living room, dining room, two bedrooms, kitchen, toilet with shower, cost \$650.

- VA-2 Fuller, Richard Buckminster - "Thin-Shell Concrete and Fuller Domes may Displace Huts in Jungles and Engineer (?)," Western Architect and Engineer, Vol. 221, p. 43 (February 1961).\*

- VA-3 HUD (USA) - Basics of Concrete. Office of International Affairs, Washington, D.C. Ideas and Methods Exchange No. 49. 1960. 24pp.

- VA-4 HUD (Housing and Home Finance Agency, U.S.A.) - Prefabricated Concrete Components for Low-Cost Housing Construction. Office of International Affairs, Washington, D.C. Ideas and Methods Exchange No. 59. 1963. 34pp.

A detailed description of a prefabricated concrete house to be used in low-cost housing construction. Booklet summarizes the principle features of the house, discusses the development of the design, total costs, and construction methods. The basic house has 210 sq. ft. of floor space, consists of two rooms and costs \$589 in Barbados (1962). When all parts have been prefabricated, a crew of 6 men (1 foreman, 5 unskilled workers) can erect the portable house in less than 8 hours. The basic house can be expanded to make a four-room house and larger houses can be built using the same principles.

- VA-5 Jacobson, F.S.B. - "Concrete Construction in the Gold Coast," Reinforced Concrete Review, Vol. 4 (No. 7), pp. 449-68 (1957).

Geographic, climatic and historical information about the Gold Coast. Ministerial Department's undertaking concrete construction. History of concrete construction in the Gold Coast, local factors effecting construction (high water/cement ratio, curing of concrete, relatively more shrinkage of concrete, etc.). Materials for construction as they are used in the Gold Coast. Earthquake history of the Gold Coast. Measures taken against earthquake destruction -- earthquake resistant design. General discussion on some problems of construction in the Gold Coast.

- VA-6 Mehra, S.R.; Uppal, H.L.; & Chadda, L.R. - "Preliminary Investigations in the Use of Bamboo for Reinforcing Concrete," Indian Concrete Journal, Vol. 25 (No. 1), pp. 20-1 (1951).

The studies reported show that the water absorption of bamboo treated with resin-alcohol mixture and a subsequent coat of white lead paint is reduced to about 1% in 24 hours. A double coat of resin-alcohol and white lead reduces the absorption to 0.3% in 24 hours, the volume change being almost negligible. An improved bond (90 lb./sq. in.) between concrete and bamboo is obtained by depositing fine sand over the wet paint. Tests show that in practice it would be advisable to limit the cross-sectional area of bamboo to 5% of the total cross-section of the bamboo-reinforced concrete slabs or blocks, otherwise the concrete may split.

- VA-7 Ridley, Tom - "Design of Concrete," Architectural Review, Vol. 128 (No. 761), pp. 86-88 (July 1960).

Describes causes of poor results with concrete in the tropics, high temperatures, variable humidities, badly graded aggregates and cement which has been kept too long. Advises how problems can be overcome.

- VA-8 West Bengal, Calcutta Metropolitan Planning Organization - Single-storey Housing Unit, Tapsia Type Housing Designs, the UCOPAN System. Calcutta. 1969.

A discussion of the uses and designs for low-cost uniform concrete panel (UCOPAN). Housing as developed for use in Calcutta.

For further references on this topic, see items:

VB-1, VB-2, VC-10, VIA-2, VIA-3, VIA-4, VIA-7, VIB1-3,  
VIB2-2, VIB2-3, XIIIA-8.

### VB. Soil

- VB-1 The Concrete Association of India - Low-Cost Soil Cement Houses. Bombay. 1962.

This brochure describes an economical technique of building low-cost houses. The technique employs only precast units, namely, soil-cement blocks for walls and precast reinforced concrete units for the roof and other structural components. The brochure also indicates the advantages and economies of such construction over the conventional type, and explains in detail the process of making the various units and building houses.

- VB-2 Delarue, J. - "Cement-stabilized pisé-de-terre in Morocco," Réunion des Laboratoires d'Essais et de Recherches sur les Matériaux et les Constructions Bulletin. Number 18, pp. 24-6 (1954).

Difficulties in building construction are often experienced in Morocco owing to the poor adhesion of cement-mortar renderings to walls of pisé-de-terre built of puddled thin-silts (limons) or tuffs, which are the only materials available. The scaling off of the rendering is ascribed to the effect of alternate drying and wetting, with concomitant volume changes, on the outer layers of the pisé just behind the mortar coating. Tests on cement-stabilized pisé-de-terre are reported which show that satisfactory bond-strengths (not less than 1 kg./sq. cm.) can be obtained between cement-rendering and puddled earth blocks when at least 3.5% of the cement is mixed with the earth and the blocks are cured in air for one month followed by seven cycles of drying (at 60-65°) and wetting. Roughing the surface of the stabilized pisé-de-terre followed by the application and 6th drying of a cement-slurry (1:1) wash is recommended prior to the application of the rendering.

- VB-3 Dreyfus, J. - Manual of Stabilized Earth Construction in French West Africa. Government General de l'Afrique Occidentale Francaise. 88pp.

Contents include definition and advantages of stabilization; choice of earth; preparation for stabilizing; starting work on stabilized earth; protection of stabilized earth structures; how to build with stabilized earth; details of construction; books to read. Appendices include methods of estimating proportions; note on the soils of French West Africa and their fitness for stabilization; working material; presses for compacting blocks of stabilized earth.

- VB-4 HUD (USA) - Earth for Homes. prepared for the use of U.S.A.I.D. Missions. Office of International Affairs, Washington, D.C. Ideas and Methods Exchange No. 22. March 1955. 70pp.

Early uses of earth; soils; methods of earth wall construction; stabilization of earth admixtures; earth floors; earth roofs.

- VB-5 HUD (USA) - Handbook for Building Homes of Earth. by Lyle A. Wolfskill; Wayne A. Dunlop; & Bob M. Callaway. Division of International Affairs, Washington, D.C. (no date) 159pp.

Types of earth houses; soils and what can be done with them; soil stabilizers; site preparation; foundations; lightweight roofs; getting the soil prepared; making adobe blocks; making pressed earth blocks; making walls of pressed blocks; making walls of rammed earth; roofs for earth houses; floors for earth houses; surface coatings.

- VB-6 Arthur D. Little, Inc. - Demonstration of Stabilized Mud Brick in Egyptian Village Housing. International Cooperation Administration. Technical Aids Branch. Office of Industrial Resources, Washington, D.C. (no date).

Purpose of this study was to show that the stabilized mud brick (originally recommended in 1952) could be used successfully to construct village housing that would resist prolonged rainfall. Production of large scale stabilized mud bricks and economic considerations were included in the demonstrative study. Bitumen-stabilized mud brick was found to be the cheapest satisfactory unit that could be used in Egypt. However, report lists problems related to construction of

village housing, such as planning, availability of building materials, regulations and property rights in the village; cost estimates and training of brick makers. The study recommends further research on the use of desert soils for house construction.

- VB-7 National Buildings Organization (India) - Building Foundations in Shrinkable Soils (Black Cotton Soils). First Report of the committee of N.B.O. and Regional Housing Center, India. Nov. 24, 1958.

Black cotton soil has been found to crack when used in construction. Damage to buildings due to shrinkage and swelling effected by seasonal moisture variations. Report offers suggestions on design to minimize effects.

- VB-8 Ransom, W.H. - Soil Stabilization: A Review of Principles and Practice. Dept. of Scientific and Industrial Research. Building Research Station. Her Majesty's Stationery Office, London. Tropical Building Studies, No. 5. 1963.

In tropical and sub-tropical countries, soil is widely used for building but is not a very durable material & many additives have been used to improve its resistance to the weather. Of these, portland cement is the most important. Two principle steps are desirable before building with soil-cement. Firstly, tests may be undertaken in order to use those soils likely to be stabilized without undue difficulty. Secondly, tests are needed to decide the amount of cement required to stabilize a particular soil. After considering the properties of soils and the principles of stabilization this study appraises such existing tests. It concludes with information on the design, construction and behavior of cement-stabilized walls.

- VB-9 Rosenak, S. - "Use of soil-cement for low-cost housing in the tropics," Civil Engineering, Vol. 52 (No. 616), pp. 1131-3, and Vol. 52 (No. 617), pp. 1271-7 (1957). (London).

The preparation, properties and service behavior of cement-stabilized soil blocks are described, including details of experiments into the effect of different methods and conditions of manufacture. Most of the information and data relate to the large scale production of stabilized soil for building houses in the tropics, even in humid areas where annual rainfalls are heavy.

- VB-10 Skolle, J. - "Adobe in Africa," Landscape, Vol. XII (No. 2), pp. 15-17 (Winter 1962-63).
- VB-11 U.N. Technical Assistance Programme - Manual on Stabilized Soil Construction for Housing. by Robert Fitzmaurice. New York. 1958. [ST/TAA/k/2].\*

This study gives some technical data which deals with the problem of using stabilized soil for low-cost house construction. The main concern is durability of houses at minimum costs. The selection, production and treatment as well as properties of stabilized soils in various LDC's are discussed at length. The study is based on information from experiments or reports on completed projects from selected countries. Summary of the report lists the country, scale of development and the condition of buildings at the time, which was generally unknown at the time the information was selected.

- VB-12 U.N. Department of Economic and Social Affairs - Soil Cement: Its Use in Building. Inter-American Housing and Planning Center, Bogota. New York. 1964. 87 pp. [ST/SOA/54].

Instructions for making soil-cement blocks that would be helpful to contractors are discussed. The CINVA-RAM machine stabilizes soil with cement in order to obtain a durable building material. It is used for many self-help and mutual-aid programs.

For further references on this topic, see items:

I-24, VIA-3, XIXA-2.

## VC. Wood

VC-1 Anderson, L.O. - Low-Cost Wood Homes for Rural America. U.S.A. Forest Service, U.S.D.A. Handbook No. 364, Washington, D.C. May 1969. 112 pp.

VC-2 Brealey, T.B. - "The Use of Local Resources for Building in New Guinea," Build International, Vol. 1 (No. 1), pp. 44-48 (Sept. & Oct. 1968).

The economic need for tropical developing countries to reduce overseas expenditure by manufacturing their own building materials is discussed. The desirability of participation by Guineans in the building industry and the fact that needs of the moment may call for low building standards are pointed out. An analysis of building low-cost houses. Majority of buildings are of timber framed construction. A matting (known as selo pungal or sak-sak blind) woven from the skin of the mid-rib of the sago palm frond is used for walls. Design for dispersal of human waste.

VC-3 Du Toit, A.J. - "The Use of Timber as a Building Material in Hot Climates," South African Council for Scientific and Industrial Research. Reprinted from Rilem Bulletin, No. 25 (December 1964). (Pretoria).

A discussion of the use of indigenous tropical timber in buildings if properly treated, designed and maintained. Details method of treatment and preservation of tropical timber to safeguard climatic conditions and biological agents.

VC-4 FAO - "The Use of Wood in Housing," UNASYLVA, International Review of Forestry and Forest Industries, Vol. 25 (No's 2,3,4), pp. 101-103 (1971). \*

VC-5 Gatchell, Charles J. - American Woods - Black Cherry (Prunus Serotina Ehrli). Southern Forest Experiment Station, Forestry Services Laboratory, Housing Research, Athens, Georgia. Item 80-A. Revised. February 1971.

Designs for low-cost wood homes with a list of references.

VC-6 HUD (Housing and Home Finance Agency, U.S.A.) - Bamboo as a Building Material. by Floyd A. McClure. Office of International Affairs with permission of Foreign Agricultural Service, U.S. Department of Agriculture, Washington, D.C. 1953-1964. 52 pp.

Bamboo is a versatile plant material which can benefit man greatly. This book discusses its use as a building material; the parts of a house for which bamboo is suitable; bamboo reinforcement of concrete; geographical distribution of bamboo; different types of bamboo and their uses in housing; the shortcomings of bamboo; its preservation; skill requirements; tool requirements -- plus references, photos and diagrams.

- VC-7 HUD (USA) - Manual on Wood Construction for Pre-fabricated Houses. prepared in collaboration with the Forest Products Laboratory, Forest Service, U.S.D.A. for the use of U.S.A.I.D. Division of International Affairs, Madison, Wisconsin. Washington, D.C. 1967. 330 pp.
- VC-8 HUD (USA) - Prolonging Life of Wood in Houses. prepared for USAID Missions. Office of International Affairs, Washington, D.C. Ideas and Methods Exchange No. 47. 1957. 43 pp.
- VC-9 Sanoff, H. - "Low-Cost Timber House for U.S. Hot Arid Area," Wood, Vol. 35, pp. 7-8 (June 1970).
- VC-10 U.N. Economic Commission for Africa - The African Building Materials Industries. Addis Ababa. 1969. 25 pp. [E/CN.14/HOU/34].
- Discusses the building materials industry in Africa, production and consumption of building materials, development problems and cement and wood products. The building industry plays a key role in the development process and at present this industry is far from satisfactory in Africa.
- VC-11 U.N. Economic Commission for Europe - Trends in Utilization of Wood and Its Products in Housing. Geneva. 1957. 49 pp. \*
- VC-12 U.N. Industrial Development Organization - Production of Prefabricated Wooden Houses. by Keijo N. Tiusanen. New York. 1971. 94 pp. [ID/WG.95/5/REV.1].

- VC-13 U.N. Industrial Development Organization - Study Group on Production Techniques in Wooden Houses Under Conditions Prevailing in Developing Countries, Vienna, 1969. New York. 1970. 39 pp. [ID/WG.49/10/REV. 1].
- VC-14 Visser, J.H. (compiler) - Report on the Development of Low-Cost Timber Houses. Council for Scientific and Industrial Research, Pretoria, South Africa. Report 236. 1965. 39 pp.

The design, manufacture, erection and testing of a low-cost timber house developed by the CSIR Timber Unit to be structurally sound, functionally acceptable and economical in all aspects, is described in detail. The actual cost and the manufacture and erection by Bantu (African) of fifty houses at Thaba Nchu are dealt with and some aspects of the cost accounting of timber houses in general are discussed. Includes illustrations.

- VC-15 Anonymous - "Urethane Foam Insulates Low-Cost Experimental Homes," Plastic World, Vol. 28 (No. 4), pp. 56-8 (April 1970).

Brief description of two houses developed by U.S. Forest Service for low-cost rural and urban housing. These experimental designs include a combination of wood and plastics. On the egg-shaped tubular house sprayed-on urethane foam covers the external walls which also form the roof; coating is a latex paint. The flat roof of the round house is lumber decking covered with foamed-in-place urethane, which provides thermal insulation and a water-tight roof covering. The urethane roofing is coated with aluminum-filled asphalt emulsion as protection against the sun's ultra-violet radiation.

#### VD. Roofing Materials

- VD-1 Koenigsberger, Otto; and Lynn, Robert - Roofs in the Warm Humid Tropics. Architectural Association Paper No. 1, London. 1965. 56 pp.

A good specific book on the technical aspects of the covering of shelters.

- VD-2 Mathur, G.C. - "Clay Roofing Tiles," Indian Builder, Vol. 13 (No. 7), pp. 57-9 (July 1965).

The use of clay tiles for roofing for building low-cost houses on self-help basis is advocated. The advantages in the use of clay tiles and their defects have been mentioned. Based on research and study improvements in the common types of tiles have been indicated. Bricks and tiles are the principal building materials which have been used since olden times for the construction of buildings and houses. Clay products that resemble bricks but are thinner and called brick-tiles have been used for structural work in the construction of walls, for flooring and for making the flat-roof waterproof. Still thinner clay tiles of particular shape and size, as may facilitate throwing off rainwater quickly, have been used for covering the roofs and are called roofing tiles. The use of such tiles has been extensively practiced, especially in the rural areas where sloping roofings are commonly built. Also in the urban areas, particularly in the regions having heavy rainfall, clay roofing tiles have been employed for the construction of sloping roof.

- VD-3 National Building Organization (India) - Report on Study of Methods Used for Water-Proofing of Roofs in India. N.B.O. India Ministry of Works and Housing, 1962. 22pp.

This is a report of a study on various specifications that had been used for waterproofing of roofs throughout the country to deal with the problems of rusting, leakage/seepage of water. The aim was to find out which specifications had stood the test of time and efficient and economic methods of waterproofing for different climatic conditions throughout India. Report includes discussion of different specifications and different types of waterproofing adopted and their merits and demerits and further recommendations on the subject. Briefly, the findings were the following: lime concrete, lime concrete with tiles and mud, phuska with tiles were the three methods generally adopted in almost all the regions. The main recommendation emphasized the importance of employing well-trained workers in waterproofing work and in reinforced concrete work for proper execution and success of any specification.

For further references on this topic, see items:

IV-40, VB-4, VB-5, VE-15, VIA-3.

## VE. Miscellaneous

- VE-1 Allen, William; & Mills, Edward D. - "Building Materials and Techniques," Architects Journal, pp. 628-31 & 730-5 (May 27, 1954 and June 17, 1954).
- VE-2 Bennet, K.W. - "Steel Rescues Low-Cost Housing," Iron Age, Vol. 206, pp. 40-1 (July 23, 1970).
- General report on several U.S. companies building prefabricated single family units by using steel frames and/or galvanized steel studs, steel joists and doors. Steel studding shown as future alternative to 2 x 4 timber for the walls of a house.
- VE-3 Blakey, F.A. - The Economic Life of Buildings in Relation to Materials of Construction. Division of Building Research, Commonwealth Scientific and Industrial Research Organization, Melbourne. 1969.\*
- VE-4 Bowley, Marian - Innovations in Building Materials. Gerald Duckworth & Co., London. 1960.
- A study of building materials from an economic viewpoint. This book examines the building materials industry in England. The industry's structure and organization are analyzed and their relationship to innovation is highlighted. Oriented towards industry and innovation and less towards building materials innovations and their applications. This investigation examines inventions that go back more than 100 years, as well as those of today. Innovations in both structure and design are analyzed.
- VE-5 Callaway, Thomas R. - In-Place Foam Plastic Construction Machine for Aided Self-help Housing. A.I.D., Mali. Sept. 1963.
- Proposal for plastic foam making machine to produce housing.
- VE-6 Diamant, R.M. - "Plastic Houses Score on Cost and Performance," Industrialized Building, Vol. 5 (No. 8), pp. 40-1 (1968).

Describes a technique for the construction of bungalows from plastic sections. The sections include the framework (PVC tubes filled with concrete) and sandwich panes are infill. The standard house made by this method has a floor area of 890 sq. ft. and can be erected by a three-man team using a 3/4 ton mobile crane.

- VE-7 Ford, Eric - "Solving Heat Insulation Problems (New Materials and Processes Applicable to Plant and Buildings in Tropical and Sub-tropical Regions," The New Commonwealth, pp. 452-4 (July 1959).
- VE-8 HUD (USA) - Industrialized Building - A Comparative Analysis of European Experience. by Philip Patman et al. Division of International Affairs. Washington, D.C. Clearing House for Federal Scientific and Technical Information, Springfield, Virginia. Special Report. 1968.
- Discusses relative efficiency of industrialized construction and conventional. Includes East and West Europe.
- VE-9 HUD (USA) - New Technologies in the Development of Housing for Low Income Families. National Research Council, Building Research Advisory Board, Washington, D.C. 1969.
- VE-10 HUD (USA) - Plant Requirements for Manufacture of Building Bricks. Division of International Affairs, Washington, D.C. 1955. 32pp.
- VE-11 HUD (USA) - Plant Requirements for Manufacture of Wallboard. Division of International Affairs, Washington, D.C. 1957. 58pp.
- VE-12 Lien, Arthur P. - Plastics and Housing in Developing Countries. Batelle Technical Review, March 1965. 12pp.
- Feasibility of plastics as material of construction for meeting housing needs and promoting industry in developing areas.

- VE-13 Miller, Harry S. - "Do it Yourself -- Weld a House," Welding Engineer, Vol. 41 (No.5), pp. 82-5 (May 1956).

Newest types of light-weight structural steel fabricated by welding provide superiority over wood; advantages include reduced cost in many cases, greater strength and easy maintenance; forming and welding recommendations.

- VE-14 Stahl, J.S. - "Using Plastics for Self-Help Housing in Developing Countries," Society for Plastic Engineers, Vol. 13 (25th Annual Technical Conference), pp. 1067-1072 (May 15-18, 1967).

Use of prefabricated plastic building material to alleviate world housing shortage. With sufficiently simple design, local labor can be used to keep costs low. Since most developing countries have access to supplies of petroleum or natural gas, raw materials can be manufactured locally.

- VE-15 Takeyama, K. - "Design and Construction in Japan and in Some Other Asiatic Countries: A Review of Trends in Asia," Innovation in Building. Contributions at the Second C.I.B. Congress, Cambridge. 1962. pp. 36-42.

The development of new materials and constructional methods in the Far East, where bamboo and/or timber are traditional materials and where resistance to fire and earthquakes is essential, is affected by the high cost of imported or even locally produced modern materials; the generally inherent resistance to their use; the absence of reliable testing and research bodies; the shortage of skilled labor and technicians; and the inadequate facilities for transport and assembly. In Burma there is only the improvement of indigenous materials, although the production of burnt-clay bricks and tiles is increasing. In urban areas of Thailand brickwork is slowly replacing timber, lower roof slopes being attained with galvanized steel sheets; manufacture of tiles and plywood and sugar-cane boards is in hand. Construction of tall reinforced concrete buildings in Indonesian cities is retarded by the high cost of steel and cement, but these are now being produced both in Indonesia and the Philippines. In this last-named country, traditional roofing is being replaced by aluminum and corrugated iron sheets, whilst hollow concrete blocks are extensively used for partitions in reinforced concrete buildings. Reinforced brickwork and concrete blocks (for cladding) are now the prevailing materials in Formosa. In Japan low-cost building is

achieved by domestic production of materials, lightweight construction and prefabrication. Pumice finds extensive use as aggregate for hollow concrete blocks and lightweight concrete, both widely adopted structurally because of ease of handling. Prefabricated reinforced concrete, including both truss and box designs, is developed widely for large-scale fire-resistant building, and tilt-up precast panel construction for small buildings, e.g. houses and 2 to 4 storey hospitals, with much wall area. Use of prestressed concrete increases slowly but that of lightgauge steel, asbestos-cement sheets, and vinyl plastics, is rapidly expanding. In the Far East construction with new materials & methods predominates in urban areas, whereas use of indigenous materials predominates in rural areas. Small size steel sections are found more economical than H or I sections.

- VE-16 Tyler, R.G. - Sandcrete Blocks. West African Building Research Institute. September 1961. 6pp.
- Brick used in Africa made of sand and Portland cement.
- VE-17 United Nations - The Establishment of the Brick and Tile Industry in Developing Countries. by Herbert W.H. West. New York. 1969. 122 pp. [ID/15].
- VE-18 U.N. - Housing and Building Materials. Industrial Development Series #5, Bangkok. 1955. [ST/ECAFE/SER.M/5].\*
- VE-19 U.N. Economic Commission for Latin America and Bureau of Social Affairs - Housing and Building Materials Industry, Central American Economic Integration Programme. New York. 1960. 96 pp. [ST/SOA/41].
- VE-20 U.N. Economic Commission for Asia and the Far East, Committee on Industry and Trade, Working Party on Housing and Building Materials - Report of the 1st Session of the Inter-Secretariat Working Party on Housing and Building Materials to the 5th Session of the Committee on Industry and Trade. New York. (Original issued at Bangkok). 1953. [E/CN.11/I&T/77].
- VE-21 U.N. Economic Commission for Asia and the Far East - Survey of Housing and Building Materials in Asia and the Far East. Bangkok. 1956. 116 pp. [E/CN.11/432].

- VE-22 Webb, T.L.; & Aardt, J.H.P. - Deterioration of Materials Under Tropical Conditions. National Building Research Institute, Pretoria. 1957.

An account of the significance of climatic factors on the deterioration of building materials such as timber, bituminous materials, paints, concrete and cement products, etc. Research work in this field is briefly discussed, and its importance outlined. The modes of deterioration, the investigation of the processes by which it proceeds and the most appropriate action in terms of selection, application and protection of such materials with a view to lengthening their useful life are discussed. (Illustrated).

- VE-23 Anonymous - "Construction firm and antipoverty agency team up on all-plastic houses in Buffalo," Modern Plastics, Vol. 47 (No. 1), p. 176 (November 1970).

Consideration of technical and economic aspects of all-plastic low-cost housing developed by a construction firm in cooperation with an antipoverty agency. Key to the low-cost is modular construction. The walls are a sandwich construction having urethane foam core and outer skin of plywood sheathed with PVC siding and an inner skin of plastic board surfaced with PVC wall covering. Moldings, electrical conduits, and DWV piping are PVC. Kitchen and bathroom counters, shelves, and cabinets are melamine laminate. Mirrors are acrylic. The roofing compound is a spray-on silicone.

- VE-24 Anonymous - "Experimental Housing," Indian Builder, Vol. 13 (No. 9), pp. 35-40 (September 1965).

Information in connection with construction of experimental/demonstration houses/buildings in urban areas. Objectives, procedure for formulation of projects and their execution, financial liability and release of funds, utilization of houses/buildings. Suggested techniques on design with reasons for recommendations.

- VE-25 Anonymous - "Foam Buildings May Ease Housing Shortage," World Construction, Vol. 21 (No. 9), pp. 31-2 (Sept. 1968).

It is shown how, by using foam-in-place construction techniques, low-cost structures enclosing 1,000 sq. ft. can be erected by two men in 6 hours. Buildings are continuously erected in one piece on-site. Technique was developed by Midwest Applied Science Corp. of West Lafayette, Indiana; new technique uses material which can be foamed in place and mobile truck-mounted erector system.

VE-26 Anonymous - "Foam Homes," Chemical Week, Vol. 106, pp. 50-51 (April 15, 1970).

VE-27 Anonymous - "Plastics Used in Design of Low-Cost House," Plastic Design and Processing, Vol. 1 (No. 5), p. 20 (October 1961). \*

New \$2,995 shell house has been made possible through use of plastic material plus new construction methods; walls are made of laminated aluminum, polyurethane foam, supported by hollow fiber glass beams; extruded aluminum posts support beams and whole house is fastened with epoxy adhesive.

VE-28 Anonymous - Structural Potential of Foam Plastics in Underdeveloped Areas. Architectural Research Laboratory, University of Michigan, Ann Arbor, Michigan.

For further references on this topic, see items:

IIIB-3, IV-2, IV-17, IV-23, IV-40, IV-44, IV-45, VA-6, VC-15, VIB3-1, VIB3-2, IX-12, XIII A-8, XIII A-13, XVID-3, XIX A-10, XIX A-23, XIX A-28, XIX C-3, XXIII-76.

## VI. CONSTRUCTION METHODS

### VIA. Conventional

- VIA-1 Bert, I.D. - "Arc Welding in Home Building," Welding Journal, Vol. 30 (No. 3), pp. 263-4 (March 1951).

Welded steel structures with welding done at site; 5 room bungalow shown can be built of steel with all its advantages for less than \$6,000.

- VIA-2 Billig, K. - "The C.B.R.I. Shell House," Indian Concrete Journal, Vol. 28 (No. 6), pp. 201-10 (1954).

Full illustrated details are given of the small ogival-shape Indian houses having a corrugated concrete-shell roof (1-1/2 -- 2-1/2" thick) with permanent flexible (hessian) moulds that form the internal finish of the building. Four low-cost prototypes having floor-areas from 513 to 915 sq. ft. (including verandah) are described; the lightweight concrete floor is suspended on plunger piles. The construction of the corrugated shell roof involves only three simple operations that can easily be carried out by unskilled or semi-skilled labor under supervision. Comparison is made between the materials and costs involved in the construction of the C.B.R.I. shell and traditional brick houses. These inverted-catenary structures are being erected mainly for low-cost houses and storage sheds in India.

- VIA-3 Boyers, A. - "Low-Cost Building Construction for African Housing," Crown Agents Review, Vol. 6, pp. 26-33 (1950).

Illustrated details are given of an experimental three-room African house constructed of cement-stabilized murram (laterite) set in timber frames. For the external walls cement-murram mixes of 1:10 were used, for internal walls 1:15 mixes, for floors and plinth 1:8 mixes; laboratory tests showed that the strengths of the "concretes" made from these mixes were very satisfactory and the specimens were well stabilized. The cement-murram mixes for the walls were placed in the frames by means of portable moulds, supported by bolts and wing nuts; owing to the dryness of the mix the moulds could be rapidly removed and the

operations repeated until a complete course of concrete was laid around the building. The roof was of timber trusses supporting purlins and galvanized corrugated iron sheets. Particular attention was given to the kitchen fireplace to obviate the smoke nuisance and for this purpose a hinged iron door with a glass inspection window was incorporated in the design.

- VIA-4 The Concrete Association of India - Precast Concrete House. Constructed at Conoor for the United Planters' Association of Southern India. M.H. Engineer, Bombay. 1963. 81pp.

The Concrete Association of India has developed a simple precast concrete unit structure that saves money on walls, roofs and doors through its construction methods. Very explicit instructions on all aspects of the physical house are given. A sample home has been constructed and floor plans, etc. are provided.

- VIA-5 Crocker, H.E. - "House construction in Southern Rhodesia," Builder, Vol. 178 (No. 5598), p. 172 (1950).

Some features in the design and construction of houses in Southern Rhodesia are described. The walls are usually of brick, pise-de-terre, or prefabricated concrete slabs. In some buildings the bricks, frequently locally made, are set on edge end-to-end in a two-leaf wall, two courses of stretchers followed by a course of headers. These double walls ensure cool rooms when summer temperatures may be more than 90°F. in the shade. Roofs are often covered with asbestos-cement or vermiculite products, the latter being obtained from local mines. Pisé-de-terre houses, constructed by native workers under white supervision, normally last about 10 years, but if the earth is well rammed the walls should last longer. Floors may consist of wooden boards nailed to joists set on concrete piers, or of wood parquet blocks of the beautifully-grained native woods laid over concrete. Sawdust-cement mixes are easy and cheap to lay, and the resulting floor surface, of pleasing deep yellow color, is easy to clean and reasonably resistant to heavy footwear. All woodwork is protected from attack by white ants by means of thick coatings of tar or "antproof" courses of tar or tin sheet. Most of the houses in the colony are of the bungalow type.

- VIA-6 Durand, R. ; & Lions, P. - "The Bournazel Scheme at Casablanca, Planning and Construction of 1,700 Homes," Ann. Inst. Batim, Vol. 10 (No. 109), pp. 1-30 (1957).

The new urban unit of Bournazel forms part of the town-planning scheme of Casablanca, from the centre of which it is 4-1/2 miles distant. In addition to the 1,700 houses there are two commercial centres, an administrative centre, a crafts centre and a school centre. The structural elements and fittings of the three types of multi-storey flats (each with 2,3,4 or 5 room variously distributed) were planned with the maximum of standardization thus permitting rapid and economical construction. Sixteen metal shutterings were used for the footings and the shutterings for the columns which were poured during the erection of the stressed stone facings. After the piping and "Shunt" conduits were installed the prefabricated joists and the overlying slabs comprising the floor were placed, the floor being finished with concrete laid in situ. Prefabricated units were used extensively during the final stages of the work.

- VIA-7 Anonymous - "Stacked Sacks Offer Low-Cost Housing," Engineering News-Record, Vol 179 (No. 20), pp. 24-25 (November 16, 1967).

Stack-Sack International of Dallas, Texas, employs building blocks composed of burlap sacks filled with concrete mix; completed wall, after being sprayed with water to harden mix, is quickly transformed into beam that carries its own load; at 28 days, sack wall is claimed to have three times the strength of a comparable block wall; method uses approximately 20% less concrete and eliminates all formwork; compared with monolithic concrete construction 6" thick sack wall receives 1" thick skin both inside and out; coating, sprayed on with plaster gun under 40 lb. pressure, consists of 1 part cement and 3.5 parts sand.

## VIB. Prefabrication

VIB1. *On-Site*

- VIB-1 Diamant, R.M.E. - "The HDC Building System," Architectural Building News, Vol. 225 (No. 21), pp. 901-4 (1964).

The HDC system of building low-cost high-quality houses is based on use of prefabricated precast concrete and timber-framed panels, both made in two storey heights and alternating along the external walls. The roof can be placed in position only a few hours after erection of the wall panels. Two semi-detached houses are built on six concrete foundation pads; the basic module is 4", the planning module is 2', floor to floor heights vary from 7'6" to 8'4". The waterproof concrete floor is placed within a r.c. ring beam and then vibrated. The 6" concrete party wall panels are made with a PVC baffle and neoprene tube. The 6" concrete party wall fits into a groove in the floor slab and has a high sound insulation. A central steel girder fixed to the party wall and supported by a 2" square steel tube provides additional support to the various structural units.

- VIB1-2 Lorman, W.R.; & Wiehle, C.K. - "Assembly Line Technique Results in Low-Cost Concrete Construction at Forrestal Village," Civil Engineering, Vol. 23 (No. 11), pp. 58-62 (November 1953).

Assembly line construction procedures employed for 1000-family housing development near Great Lakes Naval Station, Illinois, results in erection of five dwelling units daily at \$8 per square foot; foundations, ground floors, and entrance platforms cast in place, while wall panels were precast; illustrated description of execution of work.

- VIB1-3 Anonymous - "Precast Framing Speeds Erection of Low-Cost Housing," Engineering News-Record, Vol. 153 (No. 13), pp. 30-31 (Sept. 23, 1954).

Construction of 52 two-storey buildings (412 dwelling units) for Philadelphia Housing Authority at a cost of less than \$8/square foot. Precast concrete was used for framing, floors and roof decking. Concrete for column and spandrel beams designed for a 28-day strength of 5,000 psi with trap rock as aggregate. Slabs were made with expanded slag aggregate and had a 28-day strength of 3,500 psi and weighed 100 lb. per cubic foot. Two buildings were constructed per week.

- VIB1-4 Anonymous - "Welders Join Precast Panels in Low-Cost Tropical Houses," Engineering News-Record, Vol. 174 (No. 7), p. 86 (Feb. 18, 1965).

Low-cost, precast-concrete houses being built in Jamaica to stand against flooding and seismic shock. Sufficient information about the way the houses are constructed and an illustrative photograph of a finished house.

For further references on this topic, see items:

VA-1, VA-4, VB-1, VE-6, VE-25, XIII A-12.

*VIB2. Factory*

- VIB2-1 Hare, A.F. - "Factory-Produced Housing in India," Architectural Builder, Vol. 197 (No. 4236), pp. 217-218 (1950).

Brief illustrated details are given of the "alcrete" house which is now being mass-produced in India. The house is planned to a module of 3 ft. 2 in. to accommodate the cellular concrete wall-panels weighing 50 to 62 lbs./cu. ft. The houses are erected in pairs and terraces, each house having 2 rooms of 120 and 100 sq. ft., a kitchen and two open verandahs; the shower and W.C. are sited within the compound yard. There are three basic types of wall panel -- plain, window, and floor -- all cast with a double groove to each edge. A rope material is caulked into the groove and the joint pointed with a special cement. Roof panels of module width, spanning from eaves to ridge, are made of aluminum-alloy lined internally with cardboard, the intervening cavity being filled with glass silk insulation. Roof panels are supported at the ridge by an aluminum-alloy girder spanning the house longitudinally. The manufacture of the panels and fittings and the erection of the houses are both mass-production projects; one factory turns out 5,500 houses per year.

- VIB2-2 Nadirshah, E.A. - "The Use of Precast Concrete Units in Indian Housing," Indian Builder, Vol. 5 (No. 12), pp. 99-103 (1957).

- VIB2-3 Anonymous - "Experimental Low-Cost Housing in the U.S.A.," Build International, Vol. 21 (No. 7), pp. 32-40 (1969).

Summaries of analyses of 12 experimental and development projects in different parts of the U.S.A. From a study done by the Mitre corporation for H.U.D. Specifically deals with precast concrete modules at Habitat; Expo 1967; Uniment project; the Illinois project; Palacio del rio Hotel, San Antonio; "Phoenix".

- VIB2-4 Anonymous - "Fiber Reinforced Plastic (FRP) Creates Homes and Jobs for Indian Tribes," Plastic World, Vol. 28 (No. 1), p. 52 (January 1970).

Development of low-cost housing units based on prefabricated structural members made of glass fiber reinforced plastics. This "social economic experiment in the advancement of underdevelopment ethnic groups" will turn out some 500 units in 1970 for less than \$10,000 each. The basis of the components is a glass-reinforced polyester. Some 80 to 90% of the unit is made of plastics; this includes walls, beamed ceilings, tiled roof, door, bathroom, and decorative trim. Foamed plastics are used for insulation and PVC for trim. Advantage of construction developed.

- VIB2-5 Anonymous - "Industrialization of Housing - Modern Construction Techniques in Sweden and Denmark," Contract Journal, Vol. 187, pp. 1048-52 (June 28, 1962).

- VIB2-6 Anonymous - "Portable houses slated for use in Libya," The Oil and Gas Journal, Vol. 58 (No. 46), pp. 209-10 (November 14, 1960).

From Porta-Kamp Manufacturing Co., Inc. of Houston which specializes in portable units. Each building is 10' x 20' and is made of wooden frames with aluminum siding insulated with glass fiber linings. The insulation will protect the inhabitants in 110°-120° desert heat. All are mounted on steel skids, adaptable to varying weather conditions and can be easily set up by untrained personnel.

For further references on this topic, see items:

VE-2, VIB1-2.

VIB3. *Miscellaneous*

- VIB3-1 Atkinson, G.A. - "Building Techniques Overseas," Prefabrication, Vol. 1 (No. 9), pp. 7-13 and Vol. 1 (No. 10), pp. 7-12 (1954).

Recent technical developments in materials and construction in British territories and in countries such as Burma, India, Ceylon, etc. are reviewed in an attempt to evaluate those that are likely to have a permanent influence. Special attention is given to the gradual extension of the use of prefabricated buildings and to the local conditions that govern their design and construction. Three kinds of such buildings are needed: the medium size house having a floor area of 100-1500 sq. ft. for European and senior indigenous employees; simple homes of floor area 200-600 sq. ft. for locally born workers; temporary shelters, easily transported and erected for development work in the field. The development of local materials industries to supply the needs of local prefabrication schemes is discussed in relation to timber buildings, concrete buildings, concrete blockmaking, precast concrete products, lightweight concrete panels, asbestos-cement products and earth construction. Generally, the building of houses of concrete blocks roofed with corrugated iron or asbestos-sheeting is replacing "swish" and palm-leaf thatch. Relatively simple techniques are the rule for low-cost houses of timber or concrete with recourse to local prefabrication or conventional building.

- VIB3-2 Benjamin, B.S. - "Prefabricated Reinforced Plastics Roof for Low-Cost Housing," Reinforced Plastics, Vol. 11, pp. 74-5 (November 1966).

- VIB3-3 Jain, Uttam C. - "Dalichad Nagar," Journal of the Indian Institute of Architects, Vols. 34 & 35, pp. 10-13 (July/December 1969).

A prefabricated, precast housing scheme at Surat Apartment design, the outcome of the studies done on the regional living habits and climatic considerations.

Two plans and one elevation of the apartment buildings are available along with several photos.

- VIB3-4 Lewicki, Bohdan - Building with Large Prefabricates. Elsevier Publication Co., New York. 1966. 460pp.
- VIB3-5 Marking, G. - "Emergency Housing Peru," Architectural Design, Vol. 41, pp. 264-5 (May 1971).
- VIB3-6 Newcombe, V.Z. - "Low-Cost Housing in Malaya," Prefabrication, Vol. 2 (No. 18) (1955).

The progress made by the Housing Trust in Malaya with the experimental construction of low-cost houses in precast concrete is described and illustrated. Salient design features are: 1) north-south orientation but preferably facing the prevailing breezes, 2) one-room width to ensure through ventilation, 3) well-insulated over-hanging roof, and 4) uninsulated curtain walls with large openings. Precast reinforced post and panel construction using thin sections (in some instances 1" or less) with a module of 40", is favored. All slabs are standardized at 36" by 8-5/8" by 2" and are fabric reinforced. The houses are built at an angle to the road so as to intercept the prevailing breeze; floor areas range from 510 to 910 sq. ft.

- VIB3-7 Schuil, A.O. - "Methods of construction in Netherlands housing," Prefabrication, Vol. 1 (No. 2), pp. 7-10 (1953).

The Director of the Dutch Ratiobouw Building Research Foundation gives a short illustrated account of recent progress in Holland in non-traditional and partly or mainly prefabricated dwellings. In 1952 the non-traditional types formed 16.5% of all dwellings constructed. About 30 different systems had been used, of which 4 principal types accounted for 50% of the total. The post-war shortage of houses in Holland was about 1/4 million, and 55,000 new houses per year are required in face of shortages of bricks, timber, steel, raw materials for cement, and of skilled labor. The erection of housing -- owing to statutory rent restrictions -- is not a paying investment in Holland, requiring therefore Government subsidies which are, however, only available for approved schemes. An account is given of the basis and procedure in assessing such schemes. Five general types are listed, including "no fines" concrete and some other monolithic systems with slag concrete, etc. Some three-layer concrete sandwich walls are used, with sacrifice shuttering of wood-wool slabs or other precast slabs. In assembled structures, both small and full-storey, slabs (the latter handled with cranes) have

been used. Posts and beams are cast in spaces left in a light concrete block construction; floors are of small concrete joists with slabs between. Another type uses an assemblage of concrete posts, steel trusses and reinforced concrete lattice girders, combined with a cladding of concrete and wood-wool slabs and wooded floors. Architecturally these non-traditional types are not popular. The cost is about the equivalent of 1s.6d. per sq. ft. and is competitive with the traditional methods.

- VIB3-8 U.N. Department of Economic and Social Affairs - Use of Precast Components in Masonry Building Construction. New York. 1972. 128 pp. [ST/SOA/116].
- VIB3-9 U.N. Industrial Development Organization - Prefabrication in Africa and the Middle East; Report of the Expert Group meeting held at Budapest, Hungary and Bucharest, Romania, April 17-29, 1972. [ID/WG.122/REV.1]. #
- VIB3-10 Anonymous - "British Prefabricated Buildings for the Commonwealth," New Commonwealth, pp. 374-7 (October 13, 1952).
- VIB3-11 Anonymous - "Prefab: Past, Present and Prospective: Report on the State of the Art of Prefabricated Housing Construction in the U.S.," Construction Products and Technology, Vol. 45 (No. 2), p. 31 (June 1969).\* (published by The Producer's Council, Inc.)

For further references on this topic, see items:

I-22, I-25, I-30, I-35, I-39, I-51, IV-30, IV-36, IV-44, VC-7, VC-12, VE-14, VE-15, VIA-6, X-11, XIIIIC-15, XVIA-4, XXIII-3, XXIII-76.

## VIC. Modular

- VIC-1 Illinois Institute of Technology - Application of Component Construction to Multi-Storey, Low-Income Housing. Final Report by E.B. Fowler and others. Research Institute, Chicago. 1968. 3 Vols.
- VIC-2 Kirkpatrick, H.B.; & Bohlen, J.C. - "Use of Polyester Resin in Filament Wound Dwelling Units," Society for Plastic Engineers, 21st Annual Technical Conference (Paper 2-E), 8 pp. (February 1966). #\*
- Feasibility of designing and fabricating modular low-cost primary building structure from composite materials. Prototype has been compared to conventional structures of same size and basic design in terms of cost, strength, weatherability and other essential factors. Selection of building materials and filament winding process as it relates to prototype.
- VIC-3 U.N. Economic Commission for Latin America - Report of the Working Group on Modular Co-ordination in Housing. San Salvador. 1962. New York. 1965. 52 pp. [ST/TAO/SER].
- Concerns Central America. Group came to conclusions and made recommendations in three areas: 1) characteristics and methods of modular co-ordination; 2) measures for the introduction of the modular co-ordination system in Central America; 3) publicity and instruction concerning modular co-ordination, and legislation and research. System of modular co-ordination would make best use of scarce resources (means small number of standard types). Rest of pamphlet deals with specifics.
- VIC-4 U.N. Department of Economic and Social Affairs - Modular Coordination in Building: Asia, Europe & the Americas. New York. 1966. 67 pp. [ST/SOA/62/E/C.6/36/add.9/rev.1].
- VIC-5 U.N. Department of Economic and Social Affairs - Modular Co-ordination of Low-Cost Housing. New York. 1970. [ST/SOA/90].

Contains information on modular co-ordination, in many degrees of sophistication and in relation to prefabrication. Illustrated.

- VIC-6 Anonymous - "Four Variations: Rapid Economical Production of Mass Housing," Progressive Architecture, Vol. 51, pp. 74-85 (February 1970).

A system called Urban, Organiz, Modular, Element, utilizes concrete, steel and plastic modules. One module with several variations and made of different materials is illustrated.

- VIC-7 Anonymous - "House of Many Parts," Architectural Forum, pp. 77-81 (November 1967). \*

Describes the design of a low-cost house for use in residential areas. It combines the concept of modular section and core house. The module is a steel framed box 10x32 feet with floor and roof fabricated as complete units. The core contains all services. The entire dwelling can be supported on precast r.c. piers.

For further references on this topic, see items:

VE-23, VIB2-3.

#### VID. Miscellaneous

- VID-1 Benes, J. - "Features of Housing Projects Lead to Savings in Costs," BOUW, Vol. 22 (No. 35), pp. 1182-4 (1967).

Discusses the close connection between the design and execution of a housing project and the production method and production planning. Regular cost reviews achieve overall savings in cost. (in Dutch).

- VID-2 Ettinger, Jan van - Problems and Methods of Low-Cost Housing. Bouwcentrum, Rotterdam. 26 figures. 1969. 17 pp.\*

- VID-3 Fullerton, R.L. - Building Construction in Warm Climates, Volume I. Oxford University Press, London. 1967. 165 pp.

The objectives of the book are to give students basic construction techniques and to examine common organizational and administrative problems that might be

encountered. The book discusses the people who are involved with building, surveying, site organization, materials, foundations, floors, walls, and roofs. The book is very detailed with engineering drawings and a glossary. The emphasis of the building is on tropical climate construction.

- VID-4 Godfrey, K.A. - "New Technology in Low Income Housing," Civil Engineering, Vol. 36 (No. 1), pp. 48-54 (1968).

Describes building methods where one team is responsible for designing, components and erection, as in the case of portable houses. The cost reduction is achieved by eliminating innovations by designers, suppliers and builders, independently.

- VID-5 HUD (USA) - Industrialized Housing: The Opportunity and the Problem in Developing Areas. by Ian D. Turner and John F.C. Turner in conjunction with the Organization for Social and Technical Innovation (OSTI), Cambridge, Mass. Office of International Affairs, Ideas and Methods Exchange No. 66, Washington, D.C. 1972.

- VID-6 Indian Statistical Institute - Some Results Relating to Construction of Pucca Houses in Rural and Urban Areas. Delhi Manager of Publications. 1970.

- VID-7 Mohan, Dinesh; and De, P.L. - "Housing Techniques for Developing Countries," Build International, Vol. 1 (No. 3), pp. 10-12 (1968).

Comments on the U.N. Report on Science and Technology for Development.

- VID-8 Newman, Jerry O. - A House-Framing System for Low-Cost Construction. U.S. Department of Agriculture, Agricultural Research Service, Washington, D.C. Misc. Pub. No. 1020. August, 1966.

Total description of the construction and cost of a house built in 1964 by using a low-cost frame structural system composed of an efficient system of posts, beams and girts. Photographs and plans of the house and of the details are included along with a bill of materials used for this low-cost dwelling.

- VID-9 Parker, T.W.; and others - "Building and Housing Research," Housing and Town and Country Planning Bulletin, Vol. 8, (1953).

This Bulletin presents a survey of current trends in research and studies in European and other countries. The survey was effected by the Housing and Town and Country Planning Section of the United Nations Department of Social Affairs. The following reports are presented: "International Building Research," J. Bronowski; "European Collaboration in Building, Housing and Planning Research," Secretariat of the United Nations Economic Commission for Europe; "Materials, Components and Elements of Structure," T.W. Parker; "Heating and Ventilation, Lighting, Sound Insulation and Acoustics," A.T. Pickles; "Climatological Factors in Healthful Housing," D. van Zuilen; "Planning and Design," O. Brochmann; "Heating of Buildings," A. Marini; "The Building Industry," P. Arctander; "Current Building Programs," R. Fitzmaurice; "Building and Site Development," E. Parent; "Reduction of Building Cost," J. Paquay; "Town Planning in the USSR," G. Oshchepkov; "How Can We Realize the Knowledge of So Many in One Building?," J. van Ettinger and L.M. Giertz; "Building and Housing Research in the U.S.A.," C.T. Larson; "Building and Housing Research in Canada," R.F. Legget; "Role of Housing Research in Latin American Development," L.J. Currie; "Building and Housing Research in Austria," D.V. Isaacs; "Building Research in Japan," K. Fujita; "Research into Warm-Climate Building Problems," G.A. Atkinson; "Building Research in the Caribbean," N. Peacocke.

- VID-10 U.N. Department of Economic and Social Affairs - Trends in the Industrialization of Building. by Vladimir Cervenka. New York. 1970. 58 pp. [ST/SOA/102].

- VID-11 Webb, T.L. - "The Assessment and Application of New Developments in Building Research with Special Reference to Low-Cost Housing in Southern Africa," Innovation in Building, Contributions at the Second C.I.B. Congress, Cambridge, 1962. pp. 160-172.

The procedure adopted by the National Building Research Institute for the assessment, application and implementation of new developments in building research in South Africa is discussed generally, with reference to the widely varying climatic conditions and certain unique problems (e.g. semi-literate and poorly-skilled labor force) involved. Some practical results attained are then described, viz. a) utilization of the local

high-magnesia slags for the manufacture of sound Portland blast furnace - slag cement, b) prevention of heaving of foundations constructed on expansive mont-morillonite clays, c) control of deterioration and failure of concrete through attack by aggressive compounds (e.g. biologically formed sulphates), by corrosion of reinforcement, or by excessive volume changes, d) effective performance of certain walling by correct design and construction, and e) establishment of minimum standards of low-cost Bantu housing to ensure healthy and congenial family life, economic rents or payments, and structural durability.

VID-12 Anonymous - "Building the New Africa," Progressive Architecture, Vol. 43 (No. 12), pp. 80-100 (December 1962).

This is an editorial feature of the journal and includes several articles: European importation work of English architects; work of French architects; indigenous synthesis; and others.

Plus photos and diagrams -- does not deal specifically with low-cost housing.

VID-13 Anonymous - "Reema System: A Speedy Method of House Construction," Building Digest, pp. 124-7 (April/1952).\*#

For further references on this topic, see items:

IIIB-3, IV-2, IV-16, IV-39, IV-42, VB-4,  
VC-13, VE-1, VE-9, VE-13, VIB2-4, VIB2-5, IX-13,  
XI-16, XIII A-7, XXIII-66.

## VII. URBANIZATION

- VII-1 Amato, Peter W. - Regional Housing Programming in Latin America: Need and Methodology. Bogota. 1965. 79pp.

An examination of the importance of a government housing program on regional level that will deal with urbanization problems is presented. The sections discussed are: relationship of housing to national and regional economic development, the need for regional housing programs, the use of analytic tools for planning studies, and guide posts for regional housing action. There is no standard regional housing program, especially for Latin American countries. Each country has different needs and goals. One overall guideline is that housing programs not only be on a comprehensive regional scale, but also a part of the overall regional economic development plan. Funds should then be allocated accordingly.

- VII-2 Beyer, Glenn H. - The Urban Explosion in Latin America: A Continent in Process of Modernization. Cornell University Press, Ithaca. 1967. 360pp.
- VII-3 Fox, David J. ; & Robinson, D.J. - Cities in a Changing Latin America: Two Studies of Urban Growth in the Development of Mexico and Venezuela. Latin American Publications Fund, London. 1969.
- VII-4 Frieden, Bernard; & Nasa, William (eds.) - Shaping an Urban Future: Essays in Memory of Catherine Bauer Wurster. MIT Press, Cambridge, Mass. 1969.
- VII-5 International Union of Local Authorities - Urbanization in Developing Countries. Martinus Nijhoff, The Hague. 1968. 177 pp.

- VII-6 Meier, Richard - "Relations of Technology to the Design of Very Large Cities," in Roy Turner (ed.), India's Urban Future; Selected Studies from an International Conference. Sponsored by Kingsley Davis, Richard L. Park and Catherine Bauer Wurster. University of California Press, Berkeley. 1962. 470pp.
- VII-7 Meyerson, M.; Terret, B.; & Wheaton, W.L.C. - Housing, People and Cities. Action Series in Housing and Community Development. McGraw-Hill, New York. 1962. 386pp.
- VII-8 Smith, T. Lynn - "Studies in Colonization and Settlement," Latin American Research Review, Vol. 4 (No. 1), pp. 93-123 (Spring 1969).
- VII-9 Turner, Roy (ed.) - India's Urban Future; Selected Studies from an International Conference. Sponsored by Kingsley Davis, Richard L. Park and Catherine Bauer Wurster. University of California Press, Berkeley. 1962. 470pp.
- VII-10 U.N. Social Commission of ECOSOC, 14th Session - Report of the Adhoc Group of Experts on Housing and Urban Development. New York. 1962. 42 pp. [E/UN.5/3671/ADD.1].\*
- Summary reports on housing and urban development programmes in various countries.
- VII-11 U.N. Economic Commission for Africa - Report of the Regional Meeting on Technical and Social Problems of Urbanization with Emphasis on Financing Housing. Addis Ababa. 1969. 94 pp. [E/CN.14/450 (E/CN.14/HOU/40)].
- VII-12 U.N. Economic and Social Council, Economic Commission for Asia and the Far East, Committee on Industry and Natural Resources, Working Party on Housing and Building Materials, Urbanization and Housing in Asia and the Far East. - Progress Report. by the Secretariat. New York?. June 1962. 22 pp. [E/CN.11/I & NR/HBWP.7/L.1]. \*
- VII-13 U.N. Department of Economic and Social Affairs - Urbanization in the Second U.N. Development Decade. New York. 1970. 39 pp. [ST/ECA/132].

VII-14 Anonymous - "Housing in Israel," The Builder, Vol. 204, pp. 303-4 (February 8, 1963).

This article examines the Israeli housing situation from 1948 through 1962. Also discussed is the Arab housing program and the program to house immigrants. Due to the large immigration flux Israel's urban centers need expansion. In 1948 the National Company for housing immigrants was established. This organization erected subsidized immigrant housing. Beginning in 1950, 30 transit camps were established for immigrants upon their arrival. Then regional centers were planned and the areas were to be developed as single economic units, with villages of various types, as well as industries. The overall national plan calls for the establishment of 15 new towns and semi-urban centers.

For further references on this topic, see items:

I-11, I-49, II-6, IIIA-5, IIIB-8, X-20, XIV-1, XIV-31, XVIA-1, XVIA-10, XVIB-6, XVIC-3, XXV-10.

## VIII. URBAN RENEWAL

- VIII-1 Clinard, Marshall Barron - Slums and Community Development: Experiments in Self-Help. Free Press, New York. 1966. 395pp.

Slum as social and cultural phenomenon -- problems and processes of planned social change through urban community development. Case study of India -- Delhi Pilot Project. Self-help.

- VIII-2 Jensen, R. - "Planning, Urban Renewal and Housing in Singapore," Town Planning Review, Vol. 38 (No. 2), pp. 115-31 (with refs.) (July 1967).

Introduction to Singapore including facts and history of Singapore, information about the population, employment, water supply, electricity, and political and administrative background.

A short abstract of the master plan for Singapore. Discussion on planning principles used for post-war British new towns.

Housing problems of Singapore. A plan of precincts and a program for urban renewal. 17 references at the end of article.

- VIII-3 Miller, J. Marshall (ed.) - New Life for Cities Around the World - International Handbook on Urban Renewal. Books International, New York. 1959. 120pp.

A compilation of the proceedings, selected papers, reports, supplementary and graphic materials prepared or assembled in conjunction with the first International Seminar on Urban Renewal, held in The Hague, August 22-29, 1958.

- VIII-4 Muth, Richard F. - Cities and Housing. University of Chicago Press, Chicago. 1969.

The emphasis of this book is on the way the price system affects urban housing and the residential land market. The accessibility to the central business district of households, their housing consumption and residential land use are analyzed. Then neighborhoods are examined with respect to age, preference factors and housing consumption. Finally, the effects of segregation are examined. The findings of the study indicate that many government policies will have little effect on housing quality and decentralization. This book indicates more urban renewal will aid the housing problem.

VIII-5 Osgood, H.N.; & Zwerner, A.H. - "Rehabilitation and Conservation", Law and Contemporary Problems, Vol. 25, pp. 705-31 (Fall 1960).

VIII-6 Tsai, Ten-pi - Possible Means for Improvement of Housing Conditions in Taiwan. Agency for International Development, Washington, D.C. 1962.

Study of housing in Taiwan, land, economic, urban and population problems and suggested housing programs and activities.

VIII-7 U.N. - Urban Renewal Project in Ireland (Dublin). by Charles Abrams. New York. 1961. \*

VIII-8 UN Economic Commission for Europe, Committee on Housing, Building and Planning - Urban Renewal Publication. New York. 1971. 2 Vols. [ST/ECE/HBP/41].\*

The report on the proceedings of the second ECE Symposium held in Budapest, Hungary, April 27-May 7, 1970 is presented. The practical application and efficiency of the various means of renewal were examined, especially redevelopment, rehabilitation and conservation. Methods of planning and execution of urban renewal schemes were discussed as well as their legal, budgetary, technological and cultural aspects. Renewal of two centers and that of residential districts were treated separately, and case studies in various countries were described. The British contributions included a report on renewal of Bath

and Southend by S.N. Smith who also presented the general report on renewal of residential districts. Another report by J.T. Wilkinson examined the cases of the district of Deeplish in Rochdale and that of Barnsbury, Islington.

- VIII-9 Ural, Oktay (ed.) - Proceedings of the International Symposium on Low-Cost Housing Problems Related to Urban Renewal and Development. University of Missouri, Rolla, Missouri. 1970. 243pp.

Papers included cover the complete spectrum of low-cost housing problems around the world. The analysis, design, construction, materials, codes, sites, sociological, psychological, legal, economic aspects of the problem are presented to reach an efficient and total approach toward the solution of this urban problem. Papers from United States, England, Belgium, Puerto Rico, Canada, Turkey, India and Israel describe their concepts related to the topic.

- VIII-10 Anonymous - Action: Case Study. American Council to Improve Our Neighborhoods, New York. 1955.

Friends, a Quaker group, and settlement house workers decided to rehabilitate the East Poplar area of Philadelphia. They tried to accomplish five things: 1) rehabilitation of deteriorated dwellings; 2) rehabilitation by dwelling occupiers; 3) project occupancy on an interracial basis; 4) management under a housing cooperative; and 5) achievement of all aforementioned things in one badly blighted area. To build the housing, government financing programs were used and the residents-to-be used sweat equity for part of their payments. One major problem still was the high cost of building. The Friends set forth five recommendations: 1) slum properties should be demolished; 2) rehabilitation must be on a modest scale; 3) rehabilitation should be done by sweat equity; 4) rehabilitation should be of a large scale area; and 5) multi-family owner-occupied properties should be rehabilitated.

For further references on this topic, see items:

I-4, I-13, IIIA-16, XI-16, XVIA-1.

## IX. RURAL HOUSING

- IX-1 Crooke, P. - "Rural Settlement and Housing Trends in a Developing Country: An Example in Nigeria," International Labor Review, Vol. 96, pp. 280-289 (September 1967).

Analyzes the trend in rural areas of Western Nigeria, in settlement and housing towards creation of an unfamiliar rural environment. Also discussed are new house forms and changes in housing-building material costs. The new housing has more rooms, increased dimensions and relocates the kitchen area. The use of cement in construction is now more prevalent. Also observed were time elements in construction of various quality buildings. Some conclusions concerning housing were made: 1) trend to urban housing forms suited to higher density family groups; 2) increased use of non-locally manufactured building materials; & 3) house building is becoming a trade.

- IX-2 Khanna, Shri D.C. - "Rural Demonstration Houses at Village Daulatpur, U.P.," Journal of the National Building Organization, Vols. 9-10 (Nos. 4 & 1), pp. 5-24 (October-January 1965).

Specifications, discussion of materials, diagrams, photos.

- IX-3 Mathur, G.C. (ed.) - Proceedings of the Seminar on Rural Housing and Village Planning. National Building Organization, New Delhi. 1960. 356 pp.

This report is the Proceedings of the National Building Organization's planning seminar attended by 100 engineers, planners and socio-economists. The topics discussed were the socio-economics of village planning; planning rural construction; rural housing problems; construction materials; and rural plumbing and sanitation. The following ten conclusions emerged from the papers presented: 1) proper surveys must precede development, 2) village planning should be comprehensive, 3) villages should plan for growth, 4) village redevelopment program need full-time participation, 5) there should be population control, 6) sociology should be utilized,

- 7) village reconstruction committees should be formed,  
 8) rules and regulations should be enforced, 9) government agencies should cooperate with each other, and  
 10) construction of model villages is recommended.

- IX-4 Narayana, S.K. - "Materials and Methods of Building in Indian Villages," Bulletin Central Building Research Institute Roorkee, Vol. 1 (No. 2), pp. 16-25 (1953).

The usual traditional practices adopted in rural hut or housing construction in different parts of India are described and suggestions are offered for improving materials and methods as well as site planning of individual villages. The provision of properly constructed houses with adequate space, satisfactory ventilation, and good sanitary services, is considered to depend on education of the villager, the building and exhibition of model houses, and on technical research.

- IX-5 Oakley, D.; & Unni, K.R. (eds.) - The Rural Habitat; Dimensions of Change in Village Homes and House Groupings. School of Planning and Architecture, New Delhi. 1965. 122pp.

Articles of interest: social factors in housing; rural housing; some obstacles to improving present conditions; some aspects of materials and labor in rural housing; rural habitat; the nature of the design problem.

- IX-6 U.N. - Interregional Seminar on Rural Housing and Community Facilities. Maracay, Venezuela. 1967. New York ? 1968. [ST/TAO/SER.C/103]. \*

A survey of rural population trends, settlement patterns and rural housing conditions in relation to national economic and social development in market and centrally planned economies. A review of present policies and programs, the role of public and private sectors indicate that limitations of capital and technical assistance form a major bottleneck to rural housing and related community facilities programs. Report recommends that full advantage should be taken of international and bilateral technical and financial assistance available for rural housing. New methods for financing and managing low-cost rural housing programs need to be explored.

- IX-7 UN Technical Assistance Administration - Problems of Rural Housing in Eastern Pernambuco. New York. 1952. 60 pp. [ST/TAA/K/BRAZIL/1]. \*
- IX-8 U.N. Department of Economic and Social Affairs - Rural Housing: A Review of World Conditions. New York. 1969. 186 pp. [ST/EOA/87].
- IX-9 U.N. Economic Commission for Europe - The Rural Housing Situation in Europe. Geneva. 1962. [ST/ECE/HOU/3]. \*
- IX-10 U.N. Department of Social Affairs - Survey of Problems of Low-Cost Rural Housing in Tropical Areas: A Preliminary Report with Special Reference to the Caribbean Area. New York. 1950. 93 pp. [ST/EOA/2].
- IX-11 Varsheya, J.K.; & Mathur, G.C. - Handbook of Rural Housing and Village Planning. National Building Organization, New Delhi. 1968.
- This book describes the physical, economic, and social characteristics of Indian villages. It provides guidelines for village planning, incorporating the physical characteristics of the village, population density, and housing pattern. The book also discusses building materials, construction methods, provision of sanitary facilities, and other public services. Also contained are layout plans of villages, building designs and formulae and data for use in designing rural structures.
- IX-12 Viraraghavan, E. - "Symposium on the Use of Indigenous Materials for Low-Cost Housing in Rural Areas," Journal of the Institution of Engineers, Vol. 35 (No. 1), pp. 5-12 (September 1954). (India)
- Includes: Use of Indigenous Materials for Low-Cost Housing in Rural Areas; Hygienic Village Homes with Village Materials.
- IX-13 Anonymous - "Rural Housing in India," Bulletin of the Central Building Research Institute, Vol. 2 (No. 3), pp. 1-64 (1955). (Roorkee)

Rural housing in India has evolved from traditional use of indigenous material. A questionnaire was circulated by the Central Building Research Institute to the various states to gather information on climate, soil, foundations, superstructure, doors and windows, roofs, plasters, floors, and design standards. The results of this survey are given and illustrated by 11 drawings.

For further references on this topic, see items:

I-12, IIIB-9, IV-19, X-10, XI-3, XI-11,  
XI-13, XIIIB-34, XXIII-84.

## X. COOPERATIVE HOUSING

- X-1 Buenehan, Ervan R.; & Jordan, George R. - The Development of Low-Cost Housing Through Cooperatives with Special Reference to the Area Served by the Commission. West Indian Conference, Seventh Session. Caribbean Commission, Port-of-Spain. 1957.\*
- X-2 Bulgarelli, W. - As Cooperativas e o plano nacional de habitacao (Cooperatives and the National Housing Plan). Liuraria Pioneira Editoria, Sao Paulo, Brazil. 1966. 170pp. (in Portuguese)
- X-3 Davis, D.M.L. - "Cooperative Self-help Housing," Law and Contemporary Problems, Vol. 32 (No. 3), pp. 409-15 (Summer 1967).
- X-4 Engelmann, Konrad - Building Cooperative Movements in Developing Countries: The Sociological and Psychological Aspects. Praeger, New York. 1968. 238pp.
- X-5 Gale, Oscar - "The Cooperative Revolution in Honduras," IFBWW International Housing Bulletin, (No. 3/4), (1970).
- X-6 Golz, Paul - Cooperative Housing in Chile: A Final Report to the United States A.I.D. Mission to Chile and the Chilean Federation of Housing Cooperatives. U.S. AID. Publications Service, Santiago, Chile. 1962.
- Examines state of Chilean cooperative housing societies in 1962. The author finds that the coops are not functioning well and the recommendations he makes are based on the need for a crash program. Emphasis should first be placed on Technicoop, the technical service auxiliary of the Federation of Housing Cooperatives. Substantial discussion of finance also included.
- X-7 HUD (Housing and Home Finance Agency, USA) - Cooperative Housing. U.S. Printing Office, Washington, D.C. 1950-1951.

- X-8 HUD (USA) - Cooperative Housing. by James R. Dodge. Office of International Affairs, Ideas and Methods Exchange No. 52, Washington, D.C. 1971. 69 pp.
- X-9 HUD (Housing and Home Finance Agency, U.S.A.) - "Cooperative Housing in the U.S. - 1949 and 1950," Bureau of Labor Statistics Bulletin, (No. 1093), & Housing and Home Finance Agency Research Paper No. 24, Washington, D.C. 1952. 133 pp.
- Gives a comprehensive description of the history and development of 93 cooperative housing ventures in the U.S. Discusses the characteristics of the housing associations, the projects, the cost and financing, internal arrangements, relation with the surrounding community, their relationship with the Federal Government and their problems.
- X-10 India (Republic), Ministry of Works, Housing and Rehabilitation - Report of the Working Group on Housing Cooperatives. New Delhi. 1964. 56 pp.
- Role, organization of coops -- deals with subjects such as land, finance, building materials, incentives for growth of housing coops, rural housing, recommendations.
- X-11 Indian Institute of Public Administration - Problems of Urban Housing, 1960. Report of a Seminar organized by the Indian Institute of Public Administration, Bombay Regional Branch, Sachivalaya, Bombay. Popular Book Depot, Bombay. 1960. 154 pp.
- Report of a seminar; included topics are housing accommodation and finance, building materials, process through prefabrication, scheme for providing housing accommodation for the middle class, cooperative housing, problems of urban housing. Also there is included a study into the housing problem of Greater Bombay.
- X-12 International Cooperative Alliance - Report of the Regional Seminar on Cooperative Housing. Kuala Lumpur, Malaysia. November-December 1964. 36 pp.

Discusses the general housing situation in Southeast Asia; government and housing; the place of housing cooperatives in western countries; a review of cooperative housing in Southeast Asia; the recommendations of the Seminar on Cooperative Housing.

X-13 International Labor Office - Housing Cooperatives.  
ITS Studies and Reports No. 66, Geneva. 1964. 154 pp.

X-14 Interregional Cooperative Alliance - Report of the Regional Seminar on the development of Housing Cooperatives in South East Asia. held at Kuala Lumpur, Malaysia.  
October 19 - November 2, 1970. New Delhi. \*

A presentation of activities of cooperative housing movements in Southeast Asia. Housing Cooperatives in a few countries showed considerable progress, while the majority in most countries were still in their infancy. Shortage of suitable land was considered to be a major obstacle. The seminar recommended national comprehensive housing programs that would enlist public and private cooperative sectors in adopting more realistic targets. Governments should assist in land acquisition, management and financial aid in promoting cooperative housing movements.

X-15 Liblit, J. - Housing the Cooperative Way; Selected Readings. Twayne, New York. 1964. 300pp.

X-16 Mora Rubio, R. - "El Problema Habitacional y las Cooperativas de Vivienda en America Latina (The Housing Problem and Housing Cooperatives in Latin America)," Informationa Sociales, Vol. 15 (No. 4), pp. 3-37 (October, November, December 1960). (Lima).

X-17 Ruiz Lujun, Samuel - "A Cooperative Approach to Housing Problems in Latin America: The Example of Chile," International Labor Review, Vol. 91 (No. 5), pp. 406-19 (May 1965).

Discusses housing cooperatives in Chile from their inception in 1947 until 1965. Discussed are Chile's overall housing plan, financing, auxiliary bodies, and steps in organizing the cooperatives. At present,

Chile's social and economic operations are of sufficient scale to establish a national housing program that would help to alleviate the housing problem. It is felt that the cooperative approach has the greatest potential for eradicating the housing shortage. In order for cooperatives to be effective, the government must, through legislation, provide aid and assistance to the cooperative housing program.

- X-18 Schechter, George - Cooperative Housing Congress in Chile. a final report to the U.S. AID Mission to Chile & the Chilean Federation of Housing Cooperatives. Housing and Planning Division, USAID, Santiago. 1962. 13pp.

The purposes of the 1st National Congress on Chilean housing cooperatives were to provide information on current assistance; to review Technicoop; to provide discussion leaders on planning, constructing and operating housing cooperatives. The Congress called for a Cooperative bank, training programs and courses on cooperative housing. Schechter includes comments on Chile's critical housing shortage and feels cooperative housing is a viable solution. Schechter also feels subsidies might be needed, as well as a housing cooperative adviser.

- X-19 Schechter, George ; et al. - A Report on Cooperative Housing and Related Activities in Cameroon, Gabon, Kenya, Libya, Nyasaland, Sudan. prepared by FCH Company, Inc. for AID. Washington, D.C. 1963.\*

- X-20 UN Economic and Social Council - The Contribution of Cooperative Housing Societies to the Solution of Technical and Social Problems of Urbanization. prepared by B. Heinen. Addis Ababa. 1969.

This report discusses the technical and social problems of urbanization, housing policy objectives, the nature of cooperative housing societies and the contribution of cooperative housing societies to the solution of problems. Housing cooperatives are mutual-help organizations established by economically weak groups. The cooperatives have entrepreneurial self-responsibility which allows them to utilize their experience and knowledge in building and housing management.

- X-21 UN Economic and Social Council - Cooperative Housing in Africa. Addis Ababa. 1969. [E/CN.14/HOU/20]. \*

This report deals with cooperative housing in the present, future, government actions, public policy, desires of the people, professional services, and the technical aspects of cooperative housing. Suggested are concrete steps that can be taken by African governments so that their citizens may have improved housing. The paper reports on the two existing cooperative housing programs in Africa. Africa's urban problems are not comparable to the U.S. but nonetheless will affect the quality of life of the people of Africa. Improvement in policy, attitudes and government programs are suggested. It is recommended that the African governments realize the importance of providing adequate housing for their populations.

- X-22 Weissman, Enerst E. - "Mutual Aid in Low-Cost Housing," The Annals of the American Academy of Political and Social Science, Vol. 329, p. 107 (May 1960).\*

For further references on this topic, see items:

I-19, I-52, XIIIB-16, XVIA-4, XVID-4, XX-21, XXIV-11.

## XI. SELF-HELP

- XI-1 Caribbean Commission - Summary of Proceedings of the Aided Self-Help Housing Seminar Workshop. October 14-27, 1953. Port-of-Spain. 1953. 104 pp. \*

- XI-2 Djang, T.K. - "Aided Self-Help Housing Programmes for Workers in Taiwan," International Labor Review, Vol. 73, pp. 37-57 (January 1956).

This is a report of the first aided self-help housing projects launched in Taiwan in 1953. The report brings attention to the importance of home ownership, through aided self-help, to labor productivity and housing investment. Author tentatively concludes that the success of workers' housing projects depends on collective efforts of the employers, government, the workers and the workers' unions. The workers can play an important role in housing the workers. The projects gave impetus to research in methods of building, financing and organizing low-cost housing in Taiwan.

- XI-3 Fathy, Hassan - "Rural Self-Help Housing," International Labor Review, Vol. 85 (No. 1), pp. 1-17 (January 1962).

Discusses the problem of housing in Egypt (UAR), the economics of house construction and unsatisfactory approaches. Fathy proposes his own approach. Strong advocate of self-help and the cooperative systems to attain "ekistic efficiency". Maximum ekistic efficiency exists "when all materials, labor and skill are provided from within the locality and none are brought from outside". (p. 7).

- XI-4 Ford, Eric - "Low-Cost Housing by Aided Self-Help," The Builder, Vol. 195, pp. 564-5 (October 3, 1958).

This article discusses housing programs where the occupants do most of the building of their new home. This method cuts costs for the government measurably. Groups of 12 to 15 families form self-aid housing teams in Puerto Rico under the auspices of the Social Programmes Administration. It is essential that the Governmental authority administer the program on a sound basis. Family selection must be well-organized.

The authority should do all equipment and material purchasing. So far in Puerto Rico and Fiji these programs have been successful. Photographs of the housing units are included.

XI-5 Hinchcliff, J.C. Harry - Leader Training for Aided Self-Help Housing. International Cooperation Administration. University of Illinois Press, Urbana. 1957.

XI-6 HUD (USA) - Aided Self-Help Housing in Africa. prepared for USAID. Office of International Affairs, Ideas and Methods Exchange No. 65, Washington, D.C. no date. 64 pp.

Reports on projects in Rhodesia, Mali and Zambia.

XI-7 HUD (USA) - Aided Self-Help in Housing Improvement. prepared for USAID. Division of International Affairs, Ideas and Methods Exchange No. 18, Washington, D.C. 1967. 59 pp.

XI-8 HUD (Housing and Home Finance Agency, U.S.A.) - "Colonia Managua", An Aided Self-Help Housing Project in Nicaragua. Office of International Housing, Ideas and Methods Exchange No. 58, Washington, D.C. 1962. 150 pp.

A detailed description of the first self-help housing project concluded in Nicaragua. 104 houses were completed at a total investment per unit of \$1,997. Participants were screened and chosen according to a minimum income of \$71.40 per month, personal character, family composition, health, marital status, and need for housing. The composition of the house was wood and concrete, with corrugated roofing. The several modifications which arose as a result of this program are also discussed.

XI-9 HUD (USA) - The Development of an Urban Aided Self-Help Housing Program in Guatemala City, Guatemala C.A. Prepared for USAID Missions. Division of International Affairs, Ideas and Methods Exchange No. 50, Washington, D.C. 1958. 20 pp.

XI-10 HUD (USA) - Manual for Low-Cost and Aided Self-Help. Division of International Affairs, Washington, D.C. 1968. #\*

XI-11 HUD (USA) - Self-Help Housing in Puerto Rico, How Unskilled Workers in Rural Areas of Puerto Rico are Building Their Own Homes at Minimal Cost. Office of International Affairs, HUD International Briefs, Washington, D.C. June 1971. 8 pp.\*

XI-12 Margolis, Richard J.- Something to Build On; the Future of Self-Help Housing in the Struggle Against Poverty. International Self-Help Housing Associates and the American Friends Service Committee, Washington, D.C. 1967. 84 pp.

Describes the pros and cons of self-help housing programs, the uses, potentials and the history. The concept of self-help housing has only been in use since 1936 and only since 1965 has it been given much attention. The self-help process is defined and its components analyzed (i.e. perspiration and inspiration). A list of books pertaining to self-help programs in other nations is included.

XI-13 Oceana Publications, Inc. - Self-Help Housing - A Handbook for Village Workers. prepared by the staff of Oceana Publications in cooperation with the Housing, Building and Planning Branch of the U.N. Secretariat. Dobbs Ferry, New York. 1964. \*

XI-14 Rural Housing Alliance - Self-Help Housing Handbook. Washington, D.C. (Revised). 1971.

Vol. 1: Organizing a self-help housing program  
 Vol. 2: Operating a self-help housing program  
 "Technical publication for organizing and operating self-help housing programs". Analysis of the financial aspects of such procedures (funds, loans);  
 "recruitment, organization, education, construction, land acquisition, administration".

XI-15 Shenkel, William M. - "Self-Help Housing in the United States," Land Economics, Vol. 43 (No. 2), pp. 190-201 (May 1967).

This article examines self-help programs in housing in the U.S. with respect to financing, building, and end users. Self-help housing would seem to be a means of increasing housing stock in low-income areas. HUD sponsored a survey on self-help housing using shell housing (incomplete, but habitable unit). Various financial mechanisms for obtaining the units were discussed. From the study it was determined that consumer installment mortgages appealed to the low-income buyers. Incomplete

unit completion dates; if going to be long term financed must be liveable at the time of sale; occupant must be capable of finishing construction; the real estate must be well qualified and government mortgage insurance must be revised so that incomplete units can be included.

- XI-16 Terner, Ian Donald; and Herz, Robert C. - "Squatter Inspired," Architectural Design, Vol. 38 (No. 8), pp. 367-370 (August 1968).

Describes housing system devised by Professor Neal O. Mitchell for use with Venezuelan squatter families. The system has been applied to the ghetto of Detroit. System uses a concept of incremental improvements with small components on a self-help basis. Channels the independent action of the squatter, without stifling that independence.

- XI-17 Ungers, Oswald M. - S-HHS; Self-Help Housing System. O.M. Ungers, Architect & Gerardo Brown, Project Designer. Department of Architecture, Cornell University, Ithaca, New York. 1972. unpagged.

- XI-18 U.N. Department of Economic and Social Affairs - Manual on Self-Help Housing. New York. 1964. 114 pp. [ST/SOA/53].

- XI-19 Vazquez Calcerrada, P. - Housing Puerto Rico Under the Mutual Aid and Self-Help Program. World Planning and Housing Congress, May 28-June 3, 1960, San Juan, Puerto Rico. International Federation for Housing and Planning. Inter-American Planning Society. 1960. 33 pp.

By having rural people contribute labor for building their own and their neighbors' new houses, 7,886 units were completed between Nov. 1949 and Dec. 31, 1959. Cost of the houses is \$350. The social programs administration, operating under the Department of Agriculture and Commerce, supplies the communities with all necessary supplies and training and selects the communities and families which participate. The family makes a \$25 downpayment and another payment when the poured concrete structure is finished and then makes monthly payments without interest until the house is paid for. The houses are 18' by 18' structures with 2 bedrooms, a living-dining area and a porch. Families contribute the materials from their old houses to build a kitchen in the back and to build doors and windows.

- XI-20 World Planning and Housing Congress - General Report on Self-Help and Mutual Aid Housing. San Juan, Puerto Rico. 1960. 29pp.

Resumé of the main issues involved in mutual aid and self-help housing. Mutual aid (MA) is a more formal arrangement of a collective nature, while self-help (SH) is more an individualistic project undertaken by one individual with the help of his family and friends. SH seems to predominate in highly urbanized and industrialized countries with a strong middle class. MA is more likely to be sponsored in less industrialized and rural areas. Discusses economic considerations that are necessary before attempting SH or MA programs, social issues, aspects of construction, and organizational considerations. In analyzing the role of SH and MA programs within a comprehensive housing program, the type of government, the goals and aspirations of the people with respect to housing, and the social and economic standing of the country were pointed out as important considerations.

- XI-21 Anonymous - "Self-Help Housing," Architectural Design, Vol. 41, p. 700 (November 1971).\*
- XI-22 Anonymous - "Super Blocks, Self-Help and 'Community' in Latin America," Build International, Vol. 1 (No. 1), pp. 49-51 (September & October 1968).

The approaches of Venezuela and Colombia to the problem of squatters and slums are discussed. Venezuela constructed "super blocks" in the 23 January housing project in Caracas. Colombia instituted a self-help housing program under the National Housing Agency of Colombia. Compares the results of these very different approaches to the same problem.

For further references on this topic, see items:

IV-15, IV-19, VE-5, VIII-1, X-3, X-22, XIII A-8, XIII B-20, XVID-2, XIX C-2, XX-21, XX-23, XXII-6, XXIII-14, XXIII-41, XXIII-84, XXIII-104, XXIV-8.

## XII. HOUSING MANAGEMENT

XII-1 UN Department of Economic and Social Affairs - Basics of Housing Management. New York. 1969. [ST/SOA/92].\*

XII-2 UN - Management, Maintenance and Modernization of Housing. Vol. 2, Warsaw. 1968. \*#

This is the volume of proceedings of the seminar which contains written comments by seminar participants on the theme of the seminar. The major topics are: general principal issues; management and organization of housing maintenance ; modernization of housing; influence of maintenance and modernization on new housing design ; and social aspects of housing management; maintenance and modernization.

XII-3 UN - Meeting of Group of Experts on Housing Management and Tenant Education. Wellington, New Zealand. 1963. New York. 1964. [ST/TAO/SER.C/61]. #

This meeting was sponsored by the U.N. Bureau of Technical Assistance Operations with participation by ILO, FAO, WHO and aid from the New Zealand government. The U.N. felt there was a need for expert attention to examine problems in new housing projects. Nine major topics were discussed: 1) socio-economic aspects of housing management; 2) function and role of public housing; 3) tenant selection; 4) social services; 5) tenant cooperation; 6) home economics; 7) management and maintenance; 8) planning of public housing; 9) practice of housing management. Specific recommendations concerning each topic were presented.

XII-4 Anonymous - "Housing Management and Tenant Education in Asia -- Some of the Problems," Build International, Vol. 1 (No. 2), pp. 15-18 (November 1968).

Review of "Housing Management and Tenant Education Practices in the Countries of Asia and the Far East," case report no. 4 in a series prepared for U.N. Committee for Housing, Building and Planning by Dr. C.M. Palvia. Compares various projects in Hong Kong, Singapore, Malaysia, India.

For further references on this topic, see items:

I-31, IV-33, VII-11, XIV-25.

## XIII. ECONOMIC ASPECTS

## XIII A. Cost Savings

- XIII A-1 Culpin, C. - "Low-Cost Housing -- Planning for Better Value," Royal Society of Health Journal, Vol. 89, p. 79 (March & April 1969).
- XIII A-2 Divecha, Krishnamamt - "Cost Control in Buildings in the Designing Process," Journal of the National Building Organization, Vol. X (No. 3), pp. 3-15 (1965). (New Delhi)

The cost problem. Definition of terms related to cost analysis and control. Quality surveyors. Discussion of the three factors influencing cost. Approximate cost estimate and methods used to prepare it. Availability of cost data and completed buildings in America and England. Advantages and disadvantages of cost estimating method. A list of elements of building and grouping of items of work into elements. A typical cost analysis of a completed residential building with a ground floor and two upper stories. Bibliography.

- XIII A-3 Ettinger, Jan van - Towards a Habitable World; Task-Problems and Methods-Acceleration. published for Bouwcentrum, Rotterdam. Elsevier Publishing Co., Amsterdam. New York. 1960. 318 pp.

Discussion of housing and building problem throughout world in general -- little specific reference to low-cost housing, although does mention efficiency in resource allocation and construction.

- XIII A-4 India (Government), Committee on Plan Projects (Building Project Team) - Report on Industrial Townships. New Delhi. 1963. 81 pp.

Report of study of industrial townships and recommendations for future planning. Has some information on housing and suggestions for cost reducing materials such as the use of industrial by-products and stress pre-fabrication.

- XIIIA-5 Pratt Institute - Methods of Reducing the Cost of Public Housing. Research Report of the School of Architecture, Pratt Institute, New York. 1960. 139 pp.

Analysis done in five chapters. These include: plan studies, structural systems, the exterior wall, interior elements, mechanical equipment. All costs for materials used in the analysis are given. Practical recommendations at the end of the book.

- XIIIA-6 South African Council for Scientific and Industrial Research - Research Studies on the Costs of Urban Bantu Housings. The Council. Pretoria. National Building Research Institute Series DR 10. 1954.

Report of the Main Committee of the S.A.C.S.I.R. together with the reports of the five sub-committees established to investigate specific aspects of the problem. The Main Committee was charged with considering and investigating ways and means of reducing costs of building urban Bantu houses that conform with accepted minimum standards of accommodation and provided the minimum requirements for stability, weather resistance, durability and thermal sufficiency. The various factors influencing the cost of housing are summarized as well as the main conclusions and recommendations of the Committee.

- XIIIA-7 Talbott, J.W. - Frameless Glazing System for Framed Wood Buildings and Wood Foundations for Economy Housing. College of Engineering, Research Division, Bulletin 307, Washington State University. December 1967. 13 pp.

Proposed method makes it feasible to bond window glazing directly to structural frame members of framed wood buildings and eliminates rough opening in framing. Glazing is sealed to outside of vertical framing members. Advantages and disadvantages of methods are summarized. In second part of paper it is pointed out that in some situations wood foundations for wood houses make good economic and engineering sense.

- XIIIA-8 Tuskegee Institute - Low Cash Cost Housing. Rural Life Information Series, Bulletin No. 2, Tuskegee Institute, Tuskegee, Alabama. 1950

Deals with United States. Oriented toward farmers-self-help principle - discusses the "Tuskegee Concrete Block" - simplify design and construction & use local building materials. Emphasize that recommendations are for low cash cost, not low-cost, because do not have to pay for commercial concrete blocks - in Southern U.S. can find sand and gravel in ditches and creek banks.

- XIIIA-9 U.N. Economic Commission for Asia and the Far East - Study on Building Costs in Asia and the Far East. Bangkok. 1961. 42 pp. [E/CN.11/568].

An analysis of cost reducing methods in the building industries of Asia and the Far East. Information on specifications, standards, designs, cost of materials, labor and finished buildings submitted to ECAFE secretariat by the participating countries. Theoretical building cost indices established to establish a common basis for comparison in view of variations in prices of labor and materials, administrative and organizational arrangements. Study proposed sound housing policy and organization at central state and local governmental level. Advance planning, long-term finance at reasonable interest rates, help in organizing the production of the traditional materials economically, and encourage the establishment of new materials and methods of construction.

- XIIIA-10 Vagifdar, J.P. - "Building Economics for Low Rent Housing," Indian Builder, Vol. 12 (No. 12), pp. 117-20 (Dec. 1964).

Proposal for putting up houses on a mass scale at nominal rents, with real utility value, aesthetic outlook, privacy within, and no disturbance from outside elements. Houses must be built quickly and built to last. Divides needs into four groups -- very low, low, middle, and high middle income. Would use mass production, depend on new builders organizations, and rely on government cooperation. Gives some detail on land purchases and calculations of rents.

- XIIIA-11 Vedagiri, T.S. - "Scheme of Cost Reduction," Journal of the Institution of Engineers, Vol. 42 (No. 8), (April 1962). (Calcutta). \*

- XIIIA-12 Anonymous - "Box Shutters Cut House Costs,"  
Industrialized Building Systems and Components,  
Vol. 6 (No. 9), pp. 26-31 (1969).

Capital costs required for industrializing the process of building tends to put the best techniques beyond reach of the small contractors. This continental method of tunnel shuttering for rapid in-site concrete structures, already used for a number of medium and high rise projects in this country (Britain), has now been applied to two storey family housing, appreciably reducing costs and, most importantly, making only small demands on the quantity of site labor, especially skilled labor.

- XIIIA-13 Anonymous - "Brick Bearing Walls Keep Costs in Line for Low-Cost Housing," Architectural Record, Vol. 144, p. 150 (August 1968). \*

For further references on this topic, see items:

I-3, IV-29, IV-36, IV-44, IV-45, VB-1, VC-14, VE-13, VIA-4, VIC-6, VID-1, VID-5, XVIII-5, XXII-5, XXIII-64, XXV-34.

## XIIIB. Financing

- XIIIB-1 Abrams, Charles - Housing Finance in Venezuela. New York. 1960. (Mimeo). \*
- XIIIB-2 Andrzejewski, A.; & Kucharski, M. - Financing of Housing in Socialist Countries. Working Paper for the U.N. Third Advisory Group Meeting on Housing Finance, Warsaw . February, 1969.
- XIIIB-3 Ashton, E.H.--"The Economics of African Housing," The Rhodesian Journal of Economics , Vol. 3 (No. 4), pp. 29-37 (December 1969).

Ashton discusses the problem of housing in urban areas by using 4 housing categories: 1) domestic employers, 2) large employers, 3) public bodies, 4) home ownership. Domestic & industrial employers usually provide housing for their employees. Local authorities provide low-cost public housing. Now that legalities are cleared up, private home ownership should be a viable living arrangement. The major problem is providing housing for low-income families. At present, Rhodesia uses 4 techniques to bridge the gap between housing costs & amount of money a family can afford to spend. These 4 techniques are 1) informal subsidization of married accommodations by bachelors, 2) a housing tax, 3) allowal of home owners to take in lodgers, 4) use of beer profits. None of these methods are perfect, but combined they are a fairly effective attempt to combat the housing problem.

- XIIIB-4 Calderwood, D.M. - Considerations of Housing Costs in Relation to Family Income for Mass Housing Schemes in Developing Countries. Paper presented at National Conference on Low-Cost Housing . Salisburg . October, 1962.
- XIIIB-5 China (Republic), Urban and Housing Development Committee - Data on Financing of Housing . Dec., 1967. 11 pp.

A report on the general housing finance situation in Taiwan. A number of tables are included suggesting how, out of the growing GNP, enough capital can be taken to finance an adequate housing program without straining the economy. Noted is the failure of private and public financial institutions to meet the housing problem. The Four-Year Plan has made inadequate provisions in housing investment planning. The proposed rate of annual increase in investment in urban housing is \$1 billion a year -- well within the capacities of the postulated annual increase in GNP and capital resources. The report recommends a recognition of the scope of the housing problem and top level economic planning and investment allocations that would implement such a program.

- XIIIIB-6 Elliott, Sean H. - Financing Latin American Housing; Domestic Savings Mobilization and U.S. Assistance Policy. Praeger, New York. 1968. 216 pp.

The premise of this book is that low-cost housing construction in Latin America is feasible on economic as well as on political and social grounds. The relationship between living conditions and home owner output means that improved housing in Latin America could result in increases in regional productivity. Housing investment also stimulates the building material and construction industry. The book examines housing's economic benefits, financing and related institutions and the role of U.S. assistance. The topics are discussed in detail and some conclusions are obtained. In Latin America housing costs would be low because labor and materials are drawn from within the domestic economy. The U.S. foreign aid programs should result in the extension of funds to meet some of the effective Latin American housing demand.

- XIIIIB-7 Fonseca, José - Housing Finance in Developing Countries. Housing and Planning Conference Papers, No. 3. International Federation for Housing and Planning, the Hague, the Netherlands. 1971.

- XIIIB-8 Frankenhoff, Charles - "Housing in Chile: The Economics of Stimulus Response," Journal of Inter-American Studies, Vol. XII, pp. 379-391 (1970).

Popular participation in savings.

- XIIIB-9 Harris, Walter ; & Gillies, James (eds.) - Capital Formation for Housing in Latin America. Pan American Union, Washington, D.C. 1963. 176 pp. Studies and Monographs.

Includes: capital formation for housing in rapidly expanding economies; some major issues: the position of housing in national economic and social policy; inter-American housing financial sources and policies; the financing of housing in Latin America; the role of financial institutions in channeling resources into the housing sector; evaluation and implementation of programs for residential capital formation in Latin America; objectives and areas of research for a program for residential capital formation; a positive program for residential capital formation in Latin American economies.

- XIIIB-10 National Building Organization (India) & U.N. Regional Housing Center (ECAFE) - Selected Papers from Symposium on Housing Finance. New Delhi. 1965.

Contains 18 papers on housing finance that were presented at a symposium in New Delhi, 1964. The areas covered are: Japanese, Burmese and Indian housing finance; mortgage financing principles; housing sector physical policies; property taxes; and social housing. There were 159 participants from all over the world. The symposium was divided into 4 sections: 1) housing investment and its relation to national income; 2) institutional financing; 3) effect of fiscal policies on credit supply; & 4) financing housing cooperatives.

- XIIIB-11 Smigel, Stanley E. -- "Financing Problems of Housing Programs in Developing Countries," American Statistical Association, Proceedings of the Social Statistics Section, Washington, D.C. 1966. pp. 140-54.

The major problem of building housing in developing countries is lack of capital, for both the private developer and the public agency. Other factors in building: land, building materials (some of which may be imported), labor are available at relative costs. A discussion of the possibility of applying a link-index system to counteract the impact of inflation on price-index. This system has been applied in Israel and Latin America. African countries may not have adapted this system because of lack of "know-how" to manage a link-index system. It seems that the critical lack of capital for housing is a problem that will remain with the developing countries for a long time.

- XIIIB-12 U.N. Technical Assistance Program - Asia and the Far East Seminar on Housing Through Non-Profit Organizations. New York. 1958. \*

This report is an outgrowth of a U.N. Seminar on housing programs held in Copenhagen in 1956. Five topics were discussed: 1) general problems based on countries monographs, 2) housing policy development in relation to economic policy, 3) organization of non-profit housing, 4) housing financing, 5) public land policy. Detailed plans and recommendations are included concerning housing policies. Also included are monographs for 13 Asian countries, concerning their specific housing problems, as well as bibliographic references.

- XIIIB-13 U.N. Economic and Social Council - East African Sub-Regional Meeting on Specific Aspects of Housing Finance. 1970. [E/CN.14/HOU/56]. #

This report deals with different sources of capital for housing and the finance mechanisms needed for house building in Africa. The needs and demand for housing surpass the construction. Discussed were provisions of housing capital through the public and private sectors, techniques for combining housing capital sources, drawbacks in obtaining capital, ways to attract housing investment, techniques for reducing lending risks, ways to make the African Development Bank play a more major role, and ways the ECS can increase its supply of expertise.

- XIIIIB-14 U.N. Economic and Social Council, Committee on Housing, Building and Planning - Finance for Housing and Community Facilities in Developing Countries; Final Report by the Secretary-General. N.Y. 1965 [E/C.6/32].
- XIIIIB-15 U.N. Department of Economic and Social Affairs - Finance for Housing and Community Facilities in Developing Countries. N.Y. 1968. \*
- XIIIIB-16 U.N. Economic and Social Council - The Finance of Housing in the Public and Private Sectors. Addis Ababa. 1969. [E/CN.14/HOU/31].

This report places emphasis on the housing finance company of Uganda, limited loans for house purchase, and relative yields of new building. Discussed are various methods of financing savings and loan institutions, housing cooperatives, the housing market and the governmental role of Uganda in supplying housing. Some of the suggestions are low cost housing projects, guaranteed loans, and insurance company investment. Some of the conclusions are that there is a need for more information on financing in relation to new African countries, different countries will have very different needs and experiences, and housing investment can be increased by transfer of funds or by encouraging saving specifically for housing.

- XIIIIB-17 U.N. Economic and Social Council, Social Commission - Financing of Housing & Community Improvement Programmes. New York. 1957. 61 pp. \*

An over-view of private and public financial institutions designed to finance housing for low-income groups. Due to problems of foreign exchange required for imports of materials, equipment and services in connection with such housing programs, it is recommended that domestic sources should be greatly mobilized and particularly the establishment of the building and building materials resources to meet housing needs & problems of full-employment. Regional and interregional cooperation in

assessing policies & methods of housing finance, the position of community facilities and services and land acquisition & development constituted one of the major problems of technical & financial efficiency in program implementation.

- XIIIIB-18 U.N. Economic and Social Council - The Financing of Housing in the Public and Private Sectors. N.Y. 1969 [E/CN.14/HOU/30].

This report attempts to determine characteristics of housing finance in the public and private sectors of the economy. The report is divided into 4 sections: 1) principles of housing finance with respect to market characteristics of the economy; 2) public sector; 3) private sector and; 4) the housing sector in relation to development planning. The report deals mainly with Africa. Some of the conclusions were the great need for the International Union which provides people with experience in the housing field, the assets of finance and savings institutions in the housing field approach \$175 billion. The International Union hopes to put the experience of these institutions to work in new and developing countries.

- XIIIIB-19 U.N. Economic and Social Council - The German Saving-for-Building System - A Pattern for the Encouragement of Private Home Financing. Addis Ababa. 1969 [E/CN.14/HOU/36].

This report contends that the saving-for-building system might be adaptable for Africa. The method is based on an Anglo-Saxon collective savings society. The societies grant loans for construction or acquisition of owner-occupied homes. Building societies are credit institutions which accept deposits from building-savers and from collected funds grant loans to their depositors. The report discusses the history of the program and all its functions and administrative concepts. With state support, this system might work in Africa, but it must be adapted to the countries' economic, social and psychological traditions.

- XIIIIB-20 U.N. Economic and Social Council - The Ghana Group Loan Scheme. Addis Ababa. 1969. [E/CN.14/HOU/32].

This report discusses housing finance in Ghana, the roof loan program, its implementation and advantages, village housing societies, and house inspection. The purpose of the paper is to show the advantages of developing in Africa new methods of housing finance, designed to meet the countries' specific needs. The roof loan program is self-help housing. Roofing on the Gold Coast is the major and most expensive part of house building. Usually the loan is made for the roof, but also for doors, windows and finishes. In the six years the program has been operating it has been most successful. This experiment shows that it is possible to devise a finance system for low income housing, that it is possible to circumvent the land tenure problem, and it is possible to administer the program with the help of existing government institutions.

- XIIIIB-21 U.N. Economic Commission for Europe, Industry and Materials Commission, Housing Sub-Committee - Methods and Techniques of Financing Housing in Europe. # \*

- XIIIIB-22 U.N. Economic Commission for Africa, Housing Problems in Africa - Methods of Cost Assessment in Low Cost Housing. Tangiers. 1969. 11 pp. [E/CN.14/HOU/45].

Discussed are different manners in which to estimate building costs such as direct listings of expenditures verified by vouchers, distribution of direct costs on construction work, combination of work-prices into prices of building elements, and statistical analysis of the factual total costs of houses built in different places and different times. Exact proposals on how to accomplish each method are given.

- XIIIIB-23 U.N. Economic and Social Council - New Methods and Machinery to Increase the Flow of Capital to Housing. Addis Ababa. 1969. [E/CN.14/33].

This report discusses the need for long term credit, state financing systems, public savings programs, measures to increase private investment, the external sector, and current U.N. programs in the field of housing finance. It is determined that one of the major problems in building African housing is the roof, and therefore roof loan programs should be instituted. Governments should establish formal savings and finance institutions. The public sector should participate through sale of public bond issues, and compulsory savings programs. Through legislation on taxes and government incentives, the private sector could be encouraged to invest in housing.

XIIIIB-24 U.N. Department of Economic and Social Affairs - Proposals for Action on Finance for Housing, Building and Planning. New York. 1972. [E/C.6/106/REV.1].

XIIIIB-25 U.N. - Report on Housing Financing in Bolivia. by Charles Abrams. New York. 1959. \*

XIIIIB-26 U.N. Economic and Social Council - The Role of Savings and Loan Institutions (Building Societies in Mobilizing Savings for Housing). Addis Ababa. 1969. [E/CN.14/HOU/26]. #\*

This report discusses the need for mobilizing local savings, applications to Africa, operation of accounts, changes in proprietorship, and use of foreign funds. Savings and loan associations collect savings from the public and use the money to lend to individuals for mortgages. At present, there are some of these associations in Africa, but they need to be revitalized. This paper deals primarily with organization and methods used to encourage savings in building societies. A way must be found to provide the public with incentive to invest in these institutions. Trained personnel are urgently needed to administer these programs.

XIIIIB-27 U.N. - Seminar on Financing of Housing and Related Community Facilities for the Arab States. Cairo. 1963. New York. 1965. [ST/TOA/SER.C/72]. \*

This report summarizes the U.N. Seminar on financing housing that was held in Cairo in 1963. The seminar was part of a long range program of international action in housing and related community facilities. The purpose of the seminar was to evaluate present techniques of housing finance in the UAS, examine sources of capital funds, analyze housing subsidy policies, examine new methods for savings and loans and to make recommendations on how to utilize external resources. The seminar was attended by representatives of 12 Arab states. It was noted, although of late the Arab states have established government agencies to deal with housing, the size of the problem, the need to modernize present stock, and the provision of community facilities exceed the efforts of the institutions.

- XIIIIB-28 U.N. Economic Commission for Africa - Working Group of Experts on House-Building Costs, Tangier, 1-12 Sept., 1969: "Methods of Cost Assessment in Low-Cost Housing". [E/CN.14/HOU/45]. #

An outline of 4 elements in the methodology: registration of relevant places and types of buildings; listing of each relevant place and type of building; including prices of building materials; cost of labor and labor productivity. The cost of operation of plant and transportation and management and general expenditure. Techno-physical/economic research on the detailed components of the above elements of cost assessment would facilitate the selection of most advantageous building systems, economically.

- XIIIIB-29 Wasfi, Ellen O. - Thrift Institution Development in Latin America. A staff study prepared for the use of the Sub-committee on Inter-American Economic Relationships of the Joint Economic Committee, Congress of the United States. U.S. Government Printing Office, Washington, D.C. 1970. 92 pp.

Concerned with the proliferation of savings and loan institutions and credit unions in Latin America -- gives situation and results for Bolivia, Chile, Dominican Republic,

Ecuador, Peru, El Salvador and Brazil. Each section contains a brief description of the housing situation and its relation to the savings and loan programs. Although not specifically dealing with housing, does discuss housing as important proportion of financial business.

XIIIB-30 Woodworth, G.W. - "Monetary Policies and Investment in Housing," Current Economic Comment, Vol. 22 (No. 3), pp. 33-46 (Aug. 1960).

XIIIB-31 Anonymous - "Housing in Hawaii," Construction Review, Vol. 8, pp. 4-5 (July 1962).

Very short (1 page and 1/2) article -- gives basic facts with a few comments on crowding and housing need. Much renting -- basic problem is high value of land.

XIIIB-32 Anonymous - "Housing in Latin America, Financing, Programs and Policies," IFBWW Housing Bulletin, No. 11, pp. 305-324 (November 1966).

General report on housing in Latin America containing the titles: Relationship between the population of capital cities in the Americas and that of their countries; Chile's housing corporation's report on work accomplished through cooperatives in 1959-64; Inter-American Development Bank Loans (1961-65); Legislation on housing development and financing in the Dominican Republic; Housing policy and housing plan in Ecuador (1964-73); Urban housing progress in El Salvador; Housing situation and plans in Panama -- a) present situation (in 1967), b) Future needs, c) Program for the next 3 years; Similar titles for other Latin American countries.

XIIIB-33 Anonymous - "Latin America: IDB Lends for Low-Income Housing," IFBWW Bulletin, ICFTU/IFBWW, No. 10, pp. 268-271 (October 1967). (Copenhagen).

Announcement of the Inter-American Bank that it will loan 5.5 million dollars to Bolivia and 6 million dollars to Chile "to help finance the construction of" (3,500 in Bolivia and 3,030 in Chile) "houses and their respective urban and community services for low-income families of" these countries. Some financial information about the houses to be built is also given.

- XIII B-34 Anonymous - Rural Housing. Agricultural Experiment Station of Auburn University, Auburn. 1962.

An intensive housing study of the South Eastern Cotton Belt of the United States. Major objectives were to examine and evaluate the credit facilities available to rural residents for purchase, construction and improvement of homes, and to examine the use of credit facilities by rural families and to determine their adequacy. The sample was made up of residents from Mississippi, Alabama, Georgia and South Carolina. The study produced the following needed corrective measures: provision for flexible interest rates on government backed loans, more emphasis placed on borrowers' education than prepayment abilities, revision of appraisal methods, and development programs should be expanded.

For further references on this topic, see items:

I-18, IIIA-11, VC-2, VE-24, VII-11, X-6, X-9, X-10, X-11, X-17, XI-2, XI-8, XI-9, XI-14, XI-15, XI-19, XIV-10, XVIA-4, XVIA-5, XVIB-1, XVID-2, XVID-9, XXIII-3, XXIII-19, XXIII-26, XXIII-86, XXIII-97, XXV-3, XXV-25.

#### XIII C. Miscellaneous

- XIII C-1 Burnham, Kelly, ed. - Housing & Economic Development. The Report of a Conference Sponsored at MIT by the Albert Farwell Bemis Foundation on April 30 and May 1-2, 1953. Cambridge. January 1955. \*

XIIIIC-2 Burns, Leland S. - "Capital-Output Analysis of Housing Programs for Developing Nations," Industrial Relations Research Association, Proceedings, Vol.17, pp. 195-214 (Dec. 1964). \*

XIIIIC-3 Burns, Leland S. - Cost-Benefit Analysis of a Social Overhead Project for Regional Development. International Housing Productivity Study, Housing, Real Estate and Urban Land Studies Program, Graduate School of Business Administration, Division of Research, University of California at Los Angeles. 1965.

Deals with Pine Ridge Indian Reservation in mid-west U.S.A. Cost/benefit analysis of improved housing.

XIIIIC-4 Burns, Leland S.; & Mittelbach, Frank - "Efficiency in the Housing Industry," in The Report of the President's Committee on Urban Housing: Technical Studies. Volume II, Government Printing Office, Washington, D.C. 1968. \*

XIIIIC-5 Burns, Leland S. - Housing: Symbol and Shelter. University of California, Los Angeles. 1970.

Sponsored by U.S.A.I.D. An attempt is made to explain the reason for housing investment within the context of development planning. Six study areas are selected, one each in the U.S., Korea, Venezuela, Kenya and two in Mexico. The six case studies are analyzed in relation to community facilities, health, labor and many other areas. The two study components are the statement of the hypotheses concerning improved housing and the economy and empirical tests of the hypotheses. A list of conclusions and steps to be taken is also included.

XIIIIC-6 Council for Scientific and Industrial Research - Economics of Site Metering of Water in Urban Bantu Townships. C.S.I.R. Research Reports No. 182, Pretoria, South Africa. 1961. ^ pp.

- XIIIC-7 Cuisenier, J. - "Limits to Absorption of Capital Intensive Techniques in the Urban Sector with Particular Reference to Construction and Housing," Informations Sciences Sociales, Vol. 7 (No. 4), pp. 153-170 (1968).
- XIIIC-8 Dey, N.C. - "Economic Middle Income Housing Unit," Journal of the National Building Organization, Vols. 9-10 (No's 4 & 1), pp. 25-30 (1965). (New Delhi).  
Economize by altering design of house, gives suggestions for design with diagrams and drawings. Cost comparison chart at different stages.
- XIIIC-9 Gaffney, Mason; & Muth, Richard F. - Land as an Element of Housing Costs: The Effects of Public Policies and Practices, the Effects of Housing Demand. Institute for Defense Analyses, Program Analysis Division, Arlington, VA. (distributed by the Clearing House for Federal and Technical Information). 1968.  
This study comprises two separate papers addressing the general problem of the cost of land for low-income housing (in U.S.A.). The first, by Mason Gaffney, discusses how public policy affects land costs and the second, by Richard Muth, presents a quantitative model that shows the impact of the demand for housing and the demand for land on the price of land.
- XIIIC-10 Givens, R.A. - "Job Security in the Building Industry and High Quality Low-Rent Housing," Labor Law Journal, Vol. 18 (No. 8), pp. 468-477 (August 1967).
- XIIIC-11 Grebler, Leo - Housing Issues in Economic Stabilization Policies. National Bureau of Economic Research, Occasional Paper #72, New York. 1960. 129 pp.
- XIIIC-12 Hanumantharayappa, P. - "Use of Household Data in the Analysis of the Housing Situation in India," Asian Economic Review, Vol. 8 (No. 1), pp. 88-102 (November 1965).

XIIIIC-13 Howenstine, E.J. - "Appraising the Role of Housing in Economic Development," International Labor Review, Vol. 75, pp. 21-33 (January 1957).

XIIIIC-14 Kenyon, Peter B. - "African Housing in South Rhodesia, an Investigation into Economics," Builder, pp. 788-9 (May 13, 1955).

Divides accommodations for Africans into two classes:

- 1) "for those who live and work in rural areas or in reserves where they build their own houses or on farms where brick cottages are built;
- 2) "for those who work in urban areas and have to be housed in the native townships adjacent to them."

The article deals with the second category.

XIIIIC-15 Klemeyer, Frederick J. - Cost Estimation of Industrialized Housing. Ithaca, NY. 1970.

1. prefabricated houses
2. building estimates

XIIIIC-16 Maisel, Sherman - "Housing: Economic Aspects," International Encyclopedia of the Social Sciences. Vol. 6, pp. 521-26. Macmillan & Free Press. 1968.

XIIIIC-17 Needleman, Lionel - The Economics of Housing. Staples Press, London. 1965. 232 pp.

Reviews: Ratcliff, Richard U., American Economic Review, Vol. 55 (No. 5), Part 1, pp. 1242-3 (December 1965); Bowley, Marian, Economic Journal, Vol. 76 (No. 302), pp. 410-412 (June 1966).

XIIIIC-18 Nevitt, Adela A. (ed.) - The Economic Problems of Housing. Proceedings of a Conference held by the International Economic Association. Macmillan Co., New York. 1967.

Articles of particular interest:

The Political Economy of Housing, D.V. Donnison  
 Slums & Poverty, R.F. Muth  
 Housing & the State: The Responsibilities of Government, J.B. Cullingworth

Housing Problems in Developing Countries,  
L. Psanic

Housing in Africa: Some Problems & Major Policy  
Issues, D.A. Turin

Other articles may be interesting in general,  
although do not apply specifically to developing  
countries or low-cost housing.

- XIIIC-19 O'Huiginn, P. - Some social and economic aspects of housing -- an international comparison, 1959. Paper read at joint meeting in Dublin of the Statistical and Social Inquiry Society of Ireland and the Institute of Public Administration. November 1959.

Compares housing situation in Ireland to the situation in other European countries. Also social characteristics of post-war residential construction and economic comparisons.

- XIIIC-20 Ramachandran, P.; & Padmanabha, A. - Social & Economic Rents and Subsidies for Low-Income Groups in Greater Bombay. Tata Institute of Social Sciences Series No. 18, Luluani Publishing House, Bombay. 1967.

Explores the capacity of income groups to pay rent, the economic rent for different types of dwellings, gap between economic and social rents and estimates the social cost of providing housing. Study conducted among low-income groups, monthly income of Rs.500 or less. Sample size: 2,500 households. Found that large majority of dwellings were sub-standard and rent paying capacity of residents is quite low. Authors call for a well thought-out and practical housing program.

- XIIIC-21 Smith, Wallace F. - Housing: The Social and Economic Elements. University of California Press, Berkeley. 1970. 511 pp.

This book describes the essential elements of resource allocation systems in a manner which is sufficiently general to be of some practical significance anywhere.

- XIIIC-22 U.N. Economic and Social Council - Cost Analysis for Price Reductions in Low Income Group Housing, Tangiers. 1969. [E/CN.14/HOU 46. add 1]. \*

Discussed are price and cost factors, the effect of decision on price, builders' cost, price analysis, and price data. The appendices include proposals for build-up of estimates for a housing project, standard analysis of price, and example of the use of price analysis. The appendices give concrete examples of the topics discussed in the main body of the article.

- XIIIC-23 U.N. Department of Economic and Social Affairs - Manual of Land Tax Administration, Including Valuation of Urban and Rural Land and Improvements. N.Y. 1968. 176 pp. [ST/ECA/103].

- XIIIC-24 U.N. Economic and Social Council - Report of the West African Working Group of Experts on House-building Costs. Ghana. 1970. [E/CN.14/HOU/81]. #

This report focuses on the decisions influencing house-building costs and the decisions are classified as either micro or macro. Some macro decisions are population development, use of domestic natural resources, optimal quality and integrated planning and implementation of plans. Among the micro decisions are the standard of infrastructural works, the building materials industry, prefabrication, aided self-help and finance. The methods for tackling these problems are national organization, sub-regional cooperation, and standardization coordination. Numerous recommendations were made, among them are a need for each country to set up a national housing center, and low-cost housing should be given a certain priority.

- XIIIC-25 U.N. Economic and Social Council - Report of the Working Group of Experts on House-Building Costs. Tangiers. 1969. [E/CN.14/460/HOU/51].

This report discusses methods of cost assessment in low-cost housing, standardization of building components, and other factors affecting the price of dwellings. Also included are the background

papers and minutes from the Working Group meeting. The Work Group put forth the following recommendations: continuation of experts working on house-building costs in the North Africa sub-region; adoption of joint method of analysis for cost-reduction; modular coordination and governmental basic decisions influencing the cost of housing.

- XIIIC-26 U.N. Economic and Social Council - The Role of Insurance in Housing and Proposals for its Application in Africa. Addis Ababa. 1969. [E/CN.14/HOU.29].

This report discusses insurance in housing and the investment activities of building insurance companies in housing and building in Africa. The purpose of this paper is to make a connection between housing and insurance and to make recommendations for ways of implementation in Africa. The following conclusions were arrived at: insurance of construction business should follow government regulations; insurance for completed buildings should be a low-term policy; the number of companies should be limited; there should be a pooling of businesses and a survey of insurance activities in Africa.

- XIIIC-27 U.N. - The Use of National Accounts Statistics to Assess the Economic Significance of Housing. prepared for the Latin American Seminar on Housing Statistics and Programmes, Copenhagen, Denmark. September, 1962. \*

- XIIIC-28 Weston, J.C. - "International Comparisons of the Cost of House Building," Journal of Industrial Economics, Vol. 12 (No. 1), pp. 33-38 (1963).

A brief review of various ways of comparing the costs of house building in various countries is followed by some data on man-years per dwelling for 1) low-cost housing in Europe 1955-57; 2) average housing (private and public respectively) in U.K. 1948-61; and 3) private and public housing in U.S.A., 1948-60. The data are briefly described.

XIIIC-29 Williams, D.N. - "Low-Cost Housing is Homeless Waif," Iron Age, Vol. 204 (No. 11), pp. 63-66 (Sept. 11, 1969).

Reasons why low-cost housing does not exist and why the chances are high that it will not exist in the future. Though structural costs can be decreased, the overall cost will be only slightly affected because two-thirds of the overall costs come from interest, land and insurance. Craft-unions against pre-fabrication. Information about work going on for low-cost housing in American corporations. Information on prefabrication and new materials for low-cost housing.

For further references on this topic, see items:

II-9, IIIA-1, IIIB-2, IV-25, IV-30, VIII-4, XI-20, XIV-7, XIV-14, XVIB-9, XXI-8, XXIII-11, XXIII-24, XXIII-59, XXIII-78, XXIII-95.

## XIV. SOCIAL ASPECTS

- XIV-1 Abrams, Charles - "Emerging Social Problems in an Urbanizing World," Ekistics, Vol. 24 (No. 145), pp. 457-461 (1967).
- XIV-2 Bauer, Catherine - Social Questions in Housing and Town Planning University of London Press, Ltd., England. Oct. 1952.
- XIV-3 Better Housing League - Housing and People; A Survey of Expert Opinion on the Relationship between Housing and the Human Condition. Cincinnati. 1971. # \*
- XIV-4 Fawzi, Saad Ed Din - "Social Aspects of Urban Housing in the Northern Sudan," Sudan Notes and Records, Vol. 35 (No. 1), pp. 91-106 (1954).
- XIV-5 Hammel, E.A. - "Some Characteristics of rural village and urban slum populations on the Coast of Peru," S.W. Journal of Anthropology, Vol. 20, pp. 346-58 (Winter 1964).

This is a study of cultural similarities and differences between rural and urban populations of Tca, Lima and San Juan. The author uses his own ethnographic data of Tca and the other two areas. He uses aggregate data. The data was used to compare inferred fertility, age distribution, the nature and frequency of conjugal unions, housing, occupation and family composition. The author's findings showed that there was a differences between slums and non-slum urban areas in the above mentioned variables. Slums also different from villages.

- XIV-6 Holford, William - "Co-existence: Witwatersrand, Rio de Janeiro and North Kensington," The Architect and Building News, Vol. 216, pp. 329-30 (October 21, 1959).

This article was the presidential address delivered at the Housing Centre's Annual General Meeting on October 6, 1959. The subject discussed was co-existence by households of different races. Witwatersrand is an area of South Africa inhabited by detribalized Africans. This area abuts an all white section. This segregation occurs throughout South Africa. The people of the Witwatersrand are moving towards economic co-existence with their neighbors. But the rest of their lives is in total segregation. In Rio de Janeiro slums alternate with lush apartment buildings. In Brazil, differences are more economic than social. West Indians and others are moving into North Kensington. At present the influx is slow enough to not create a problem.

- XIV-7 International Labor Organization - Technological Changes in the Construction Industry and Their Socio-economic Consequences. Seventh Session of the Building, Civil Engineering and Public Works Committee, Report No. II, Geneva. 1964.
- Covers various aspects of the industry, labor/technology situation in developing countries. Role of international cooperation.
- XIV-8 Ivern, Francis - "The Social Effects of ReHousing on Slum Dwellers (India)," Indian Journal of Social Work, Vol. 25, pp. 353-62 (January 1965).
- XIV-9 Kay, George - Social Aspects of Village Regrouping in Zambia. Department of Geography, Misc. Series No. 7, University of Hull, Hull, England. 1967. 94 pp.
- XIV-10 Khandekar, Mandakini - "Social Housing in India, with Particular Reference to Industrial Housing," The Indian Journal of Social Work, Vol. 31 (No. 3), pp. 229-242 (October 1970).
- Discusses housing subsidies and their place in social housing. Gives problems of housing schemes in India and details of financial aspects. Discusses criteria for participation and government aided programs.

- XIV-11 Madge, John - "Housing: Social Aspects," International Encyclopedia of the Social Sciences, Vol. 6 , pp. 116-21. Macmillan & Free Press. 1968.
- XIV-12 Mao, J.C.T. "Relocation and Housing Welfare," Land Economics, Vol. 41, pp. 365-70 (November 1965).
- XIV-13 Maule, H.G. - "Social and Psychological Aspects of Rehousing," Advancement of Science, Vol. 12 (No. 48), pp. 443-53 (1956).
- XIV-14 Mitchell, Robert E. - Housing, Urban Growth and Economic Development. Asian Folklore and Social Life Monographs, volume XXXI, The Orient Cultural Service, Taipei. 1972. 304 pp.

Contains: the Problem and the Setting; a Macro Perspective; Micro-social and economic perspectives; Responses to Housing; Housing and Land-use Planning. The primary emphasis is on social aspects of housing that are involved in processes of urban growth and economic development. Chapters are organized to take the reader from a broad socio-economic perspective on housing down to a consideration of how people respond to their immediate micro-residential environment. The results obtained from the macro and micro perspectives are then joined together to provide policy guidelines for urban land-use developments and housing programs in cities with low levels of income but with rapidly expanding populations.

- XIV-15 Morris, Raymond N.; & Mogey, John - The Sociology of Housing: Studies at Berinsfield. Routledge and K. Paul, London. 1965. 211 pp.

Social consequences of rehousing a community without change in geographical location and composition of settlement. Rural slum to be replaced with model village. England.

- XIV-16 Musil, Jiri - "The Sociological Approach in Planning Workers' Housing: The Experience of Czechoslovakia," International Labor Review, Vol. 86 (No. 6), pp. 545-566 (Dec. 1962).

The importance that the I.L.O. attached to workers' housing has many times been emphasized. One special occasion was in 1961 when the International Labor Conference adopted the Recommendation concerning workers' housing in which it declared that it should be an objective of national policy "to promote...the construction of housing and related community facilities with a view to ensuring that adequate and decent housing accommodation and a suitable living environment are made available to all workers and their families." In the article below, Jiri Musil describes what is being done in Czechoslovakia to draw up a long-term program of dwelling construction that will not only meet technical and economic requirements but also take into account such essential factors as the structure and development of the family unit, the expected future changes in ways of living expected to result from modern work methods, the necessary independence of each family unit and of its individual members, and the encouragement that must be given to all to take part in the social life of the local community.

- XIV-17 Noyola, Benito X.- "Housing of Social Interest in Latin America and Especially in Mexico," Austin, Texas. 1967. Film.
- XIV-18 Peattie, Lisa R. "Social Issues in Housing," in Frieden, Bernard; & Nasa, William (eds.), Shaping an Urban Future. MIT Press, Cambridge, Mass. 1969. pp. 15-34.
- XIV-19 Rigby-Childs, D. - "Space and Housing, A Study of Environment and Density," The Architect's Journal, Vol. 132, pp. 348-363 (September 8, 1960).\*

- XIV-20 Royal Institute of British Architects - Family Life in High Density Housing with Particular Reference to the Design of Space about Buildings. Report of a Symposium held 24 May, 1957. London. 1957. 40 pp.
- XIV-21 George Schermer Associates - More Than Shelter: Social Needs in Low- and Moderate-Income Housing. U.S. National Commission on Urban Problems, Research Report No. 8, Government Printing Office, Washington, D.C.. 1968. 213 pp.
- XIV-22 Stevens, P.H.M. - Densities in Housing Areas. Department of Scientific and Industrial Research, Building Research Station, Tropical Building Studies No. 1, Her Majesty's Stationery Office, London. 1960. 55 pp.

The purpose of this paper is to help those concerned with housing problems towards a better understanding of the significance of density in the physical development of a community and to suggest an approach that will assist them to determine their own unique standards appropriate to local circumstances. It does not recommend standards, but provides a tool which aids better decisions on local standards.

- XIV-23 Tjioe, B. Khing ; & Burns, Leland S. - "Housing and Productivity: Causality and Measurement," American Statistical Association, Proceedings of the Social Statistics Section. Washington, D.C. 1966. pp. 155-160.

It is postulated that qualitative improvements in housing and community facilities affect productivity in the same fashion as improvements in working conditions. This paper narrates the difficulties of assessing this more subtle of the two broad classes of factors improving productivity. The paper is divided along 3 lines: first a description of the research design including a statement of facilitating assumptions; second, a test of the direction of causation; and finally an estimate of the magnitudes of the changes in productivity induced by changes in the quality of housing. Evidence is provided from a case study of the relocation of Korean mine workers to a new community consisting of housing and related facilities.

- XIV-24 U.N. Department of Economic and Social Affairs - Report of the Ad Hoc Group of Experts on Social Programming of Housing in Urban Areas. New York. 1971. 79 pp. [ST/SOA/109].
- Contains: social needs to be fulfilled; evaluation techniques; operational indicators of standards; techniques in programming and planning.
- XIV-25 U.N. Department of Economic and Social Affairs - Social Aspects and Management of Housing Projects; Selected Case Studies. New York. 1970. 104 pp. [ST/SOA/98].
- Reviews present programs dealing with housing in Great Britain, U.S., Hong Kong, Poland and Venezuela.
- XIV-26 U.N. Secretary-General (U Thant) - Economic and Social Council - Social Aspects of Housing and Urban Development. by Elizabeth Wood. New York. 1965. 84 pp. [E/C.6/35].
- XIV-27 U.N. Department of Economic and Social Affairs - Social Aspects of Housing and Urban Development. by Elizabeth Wood. New York. 1967. 58 pp. [ST/SOA/71].
- XIV-28 U.N. Economic Commission for Latin America - Social Change and Social Development Policy in Latin America. New York. 1970. [E/CN.12/826/REV.2].
- XIV-29 Urquidi, Victor L. - "La Ciudad Subdesarrollada," Demografia y Economia, Vol. III (No. 2), pp. 137-155 (1969). Translated in Eells, Walton - Man in the City of the Future. pp. 73-97.
- An overview of the structural and social problems of cities in developing countries.
- XIV-30 Vapñarsky, César A. - "An Approach to the Sociology of Housing," International Review of Community Development, Vol. 13-14, pp. 189-210 (1965).

- XIV-31 Vayda, Andrew P. (ed.) - Environment and Cultural Behavior. The National History Press, New York. 1969.

A collection of articles by various authors dealing with the relationship of eco-system and environment with social groups. Various: including those by Scott (#5), Gould (#12) and Duncan (#23) deal with subjects pertinent to urban conditions.

- XIV-32 Anonymous - European Seminar on Social Aspects of Housing. Lepolampi, Finland. 1959.

- XIV-33 Anonymous - Social Aspects of Low-cost Housing in the North Sudan. Labour Department, Khartoum. 1954. #\*

For further references on this topic, see items:

I-3, I-33, I-36, I-37, II-6, II-9, IIIA-1, IIIB-2, IV-3, IV-5, IV-7, IV-37, IX-5, X-4, X-20, XI-8, XI-20, XII-2, XII-3, XIIIC-19, XIIIC-21, XVIB-2, XVIB-9, XVID-6, XVID-19, XVII-1, XVII-2, XVII-3, XVII-4, XVII-5, XIXA-24, XXIII-3, XXIII-4, XXIII-11, XXIII-19, XXIII-24, XXIII-51, XXIII-63, XXIV-7, XXV-19.

## XV. POLITICAL ASPECTS

- XV-1 Martinez-Pardo, A. - Low Rent Dwelling. Instituto Tecnico de la Constuccion y del Cemento, Numero 174, Madrid. 1956. 55 pp.

A review of the legislative and administrative aspects of private enterprise low-cost housing in Spain.

- XV-2 Ray, Talton F. - The Politics of the Barrios of Venezuela. University of California Press, Berkeley. 1969.

Squatter settlements -- author believes that the people who inhabit the barrios will be a significant variable in attempts at political reform in Venezuela. Gives history of barrios and conditions.

For further references on this topic, see items:

X-17, XVIB-9, XVID-19, XX-21, XXV-32.

## XVI. PROBLEMS NEEDING SOLUTION

### XVIA. Slums

- XVIA-1 Desai, Akshayakumar R.; & Pillai, S. Devadas (eds.) - Slums and Urbanization. Popular Prakashan, Bombay. 1970. 356 pp.

Compilation of articles on slums by authors such as Charles Abrams, Lewis Mumford, Frederick Engels, Michael Harrington, Oscar Lewis & others. Book is divided into 8 sections: The problem in perspective; nature, characteristics & theories of slums; slums in the USA; slums in the Latin American Region; some Asian cities; the Indian slum; urban renewal programmes in some countries; & urban renewal: general.

- XVIA-2 Gussman, Boris - "Shanty Towns in Southern Africa," Geographical Magazine, pp. 321-30 (November 1952).

A description of slums in South Africa, a reflection of institutionalized racism and urban poverty. The descriptions include economic activities of the shanty town dwellers, such as illegal beer brewing. Police raids have led to formation of organized band and insurance society to protect individual interests from law enforcers.

- XVIA-3 Gutkind, Peter - "Congestion and Overcrowding: An African Problem," Human Organization, Vol. 19 (Fall 1960).#

- XVIA-4 Indian Institute of Public Administration - Problems of Urban Housing. Report of a Seminar organized by the Indian Institute of Public Administration, Bombay Regional Branch, Sachivalaya, Bombay. Popular Book Depot, Bombay. 1960. 154 pp.

Subjects covered include finance of housing, building materials, prefabrication, housing problem of Greater Bombay, scheme for providing accommodation, cooperative societies, urban housing, slum clearance and construction agencies.

- XVIA-5 McKenzie, Daniel J. - Workable Program for Slum Prevention and Elimination. Buffalo, New York. 1957.

This program was submitted by the city of Buffalo to the Housing and Home Finance Agency as part of their workable program. It includes a description of codes and ordinances, a comprehensive community plan, neighborhood analyses, a description of the administrative organization, methods of financing the workable program, procedures for housing displaced families, and the role of citizen participation. The city hopes to increase its slum prevention activities and for this reason has begun another more intense study.

- XVIA-6 Roger, L.H. - "Slum Neighborhoods in Latin America," Journal of InterAmerican Studies and World Affairs, Vol. 9, pp. 507-28 (October 1967).

- XVIA-7 Schorr, Alvin L. - Slums and Social Insecurity. U.S. Department of HEW, Social Security Administration, Division of Research and Statistics, Research Report No. 1, Superintendent of Documents, Washington, D.C. 1963. 168 pp.

An appraisal of the effectiveness of housing policies in helping to eliminate poverty in the U.S. Examines causal connection between housing and the feelings and behavior of individuals and families. Evidence shows that housing affects perception of one's self, contributes to or relieves stress and affects health. Also affects ability to improve one's circumstances. A wide range of architectural, political and social decisions about housing have explicit consequences in social security or insecurity: city space, neighborhood, design and adequacy of dwelling unit, and social

elements. Then looks at financial problem and examines public efforts to provide housing with conclusion that programs are ineffective. Final conclusion that "housing policies will have to be integrated toward the end of ... achieving social security."

- XVIA-8 Solow, Anatole A. - "Housing in Latin America: The Problem of the urban low income families," The Town Planning Review, Vol. 38 (No. 2), pp. 83-102 (July 1967).

Discusses background and facts of housing problem. Gives summary of policies for coping with problem. Bibliography and references.

- XVIA-9 Stokes, Charles J. - "A Theory of Slums," Land Economics, Vol. 38 (No. 3), pp. 187-197 (1962).

- XVIA-10 Turner, J.C.; Turner, C.S.; & Crooke, P. - "Dwelling Resources in South America," Architectural Design, Vol. 33, pp. 360-393 (August 1963).

Discusses the problems of South America in coming to terms with population increases and the urban explosion with regard to housing. Examples from Venezuela, Chile, Colombia and Peru demonstrate how the resources have been put to work to solve the problems. Series of articles with summary, conclusions.

- XVIA-11 U.N. Department of Economic and Social Affairs - Interregional Seminar on the Improvement of Slums and Uncontrolled Settlements, Medellin, Colombia, 1970. [ST/TAO/SER.C/124]. # \*

Report on governments' policies and programs shed light on degree of official commitment, scope and character of approaches to the problem.

For further references on this topic, see items:

I-26, I-34, II-6, VIII-1, XIV-5, XVIB-9, XXIII-4, XXIII-14, XXIII-15, XXIII-100.

## XVIB. Squatters

- XVIB-1 Fraser, J.M. - "Planning and Housing in Two Crowded Asian Cities," Surveyor, Vol. 119, pp. 1023-24 (1960).

Starvation problem threatens because of very small land. New satellite towns being planned for Singapore. Main problem in Hong Kong is supply of water. Land values are soaring. Population rise is very rapid in Hong Kong. Therefore the density of population in housing units is very high. Many still live in squatter areas. Housing comparisons between Hong Kong and Singapore are discussed and also given in a table. Work on housing and financing of housing in Hong Kong and Singapore.

- XVIB-2 Golger, Otto J. - Squatters and Resettlement: Symptoms of an Urban Crisis: Environmental Conditions of Low-Standard Housing in Hong Kong. Otto Harrassowitz, Wiesbaden. 1972.

Data from surveys from three squatter settlements and three resettlement estates. One aim of research to throw light on some factors of environmental conditions of low-standard housing and on the problem of over-crowding in squatter settlements or in multi-storey dwellings. An attempt was made to find out what factors are at work to make those high densities in Hong Kong bearable.

- XVIB-3 Healey, Patsy - "Barrios are not romantic," Architectural Design, Vol. 41, p. 631 (October 1971).

Description of barrios in Venezuela--concludes that "the barrios are the expression of a problem whose causes originate on a national scale and consequently no solutions at the community level or the urban level are going to remove them." The economic situation will have to change before the barrios will disappear.

- XVIB-4 HUD (USA) - Squatter Settlements: The Problem and the Opportunity. by Charles Abrams. Office of International Affairs, Ideas and Methods Exchange No. 63, Washington, D.C. 1966. 48 pp.
- XVIB-5 Juppenlitz, Morris - Cities in Transformation: The Urban Squatter Problem of the Developing World. University of Queensland Press, St. Lucia. 1970.
- XVIB-6 The Karachi Development Authority (Pakistan) - The Problem of Shelterless People and Squatters in Pakistani Cities. Proceedings of a seminar held at Karachi, March 25-29, 1966.

Presentations focused on: 1) reasons for the shelterless conditions of multitudinous city dwellers in Pakistan; 2) the socio-economic implications of the influx of low-income groups to cities; 3) the nature and extent of the problems created by shelterless people and squatters; 4) an appraisal of policies made and projects undertaken to rehabilitate the shelterless and the after-effects of rehabilitation. The delegates who made the presentations were individuals who had been directly involved with housing problems, directors of regional and city planning, buildings engineers in housing and public works, members of financial institutions, etc... The discussions and resolutions provide an insight into what the government and the related institutions view as the problem and solutions.

- XVIB-7 Mangin, William - "Latin American Squatter Settlements: A Problem and a Solution," Latin American Research Review, Vol. 2 (No. 3), pp. 69-98 (1967).

Takes the point of stating that squatters are only a problem in terms of the government and the landowners affected, not to the society, since squatters provide their own housing, etc.

- XVIB-8 Mangin, William - "Urban Squatter Settlements: A Problem and a Solution," Latin American Research Review, Vol. 2 (No. 3), (1967). #\*
- XVIB-9 Sewell, Granville H. - Squatter Settlements in Turkey: Analysis of a Social, Political & Economic Problem. Thesis, M.I.T., Cambridge, Mass. 1964.
- XVIB-10 Stycos, J. Mayone - Children of the Barriada: A Photographic Essay on the Latin American Population Problem. Grossman Publishers, New York. 1970. 88 pp.
- Not specifically on housing, but gives a poignant picture of the conditions of the barriada.
- XVIB-11 Turner, John F. C. - "Uncontrolled Urban Settlements: Problems and Policies," in Breese, Gerald (ed.), The City in Newly Developing Countries. Prentice Hall, Englewood, New Jersey. 1969. pp. 347-398.
- XVIB-12 Anonymous - "Misery Village," The Economist, Vol. 199 (No. 6139), pp. 330 (April 22, 1961).
- Brief (1 page) description of slum and squatter problem in Latin America.
- XVIB-13 Anonymous - "Squatters in their Jerusalem," The Economist, Vol. 220 (No. 6410), pp. 28-31 (July 2, 1966).
- Brief discussion of squatters and crowding problem in South America.

For further references on this topic, see items:

I-26, I-49, XI-22, XV-2, XVIA-10, XVIA-11, XXIII-25, XXIII-27, XXIV-13, XXV-15

## XVIC. Migrants

- XVIC-1 Appleyard, Reginald Thomas - Low-Cost Housing and the Migrant Population. Committee for Economic Development of Australia, Melbourne. 1963. \*
- XVIC-2 Browning, Harley L.; & Feindt, Waltrant - "Selectividad de migrantes a una metropoli en un pais en desarrollo: Estudio de un caso Mexicano," Demografia y Economia, Vol. III (No. 2), pp. 186-200 (1969).
- XVIC-3 Iyer, S.S.; & Verma, K.K. - A Roof Over Their Heads: A Study of Night Shelters in Delhi. Delhi School of Social Work, Studies in Social Work, Publication 8, University of Delhi. 1964. 59 pp.

Based study on six night shelters run by the Bharat Sevak Samaj in Delhi -- June, 1962. Points out the serious shortage of housing and over-crowding in existing housing in India, particularly in urban areas. Suggest long-term solution is to provide the shelterless with full-time employment at fair wages. Short-run solution could be the construction of multi-storey hostels. The provision of night shelters is only an interim solution, although is superior to leaving people to sleep in the streets.

For further references on this topic, see items:

I-26, XXIII-15.

## XVID. Miscellaneous

- XVID-1 Collard, W.E. - "Housing in Hong Kong," Housing Review, Vol. 9 (No. 2), pp. 51-64 (March-April 1960).

Describes the present housing situation in the colony of Hong Kong and discusses the provision of low-cost housing with special reference to the work of the Hong Kong Housing Authority. Two estates have been constructed and three more are in course of building or planning; they comprise 12 to 20 storey blocks of flats, about 10,000 flats in all.

- XVID-2 Crane, Jacob L.; & Paxton, E.T. - "The World-wide Housing Problem," Town Planning Review, Vol. 23 (No. 1), pp. 16-43 (1951).

Based on data from over 100 voluntary reports on housing, construction, war damage and reconstruction made to the U.S. Department of State, the present situation regarding present-day world housing is reviewed. The housing needs of the U.S.A., Great Britain, Canada, Europe, U.S.S.R., Africa, Asia and the Pacific, and Latin America are summarized, and some account is given of what their peoples and governments appear to be doing to meet them. Trends in public policy, national methods of financing, research and technical assistance, international exchange of information, and present and future problems are also discussed. A short account is given of the practical application in certain countries of the principle of "aided self-help" whereby the prospective home-owner can, with the help of his friends, build most of his own house. Public assistance may provide small loans for building materials, practical instruction and advice, and periodical inspection of the structure. The principle is primarily applicable to less developed countries and "backward areas" although it has been locally successful in Scandinavia and the Netherlands.

- XVID-3 Emmerich, D.G. - "Plaster on a Wooden Leg," Architectural Design, Vol. 41, pp. 633-636 (October 1971).

Describes the construction of a shelter of Rhombicuboctahedron shape which is capable of forming a spatial system which can grow. Constructed in Morocco with waste materials, cheap, easy to build and sturdy.

- XVID-4 Indian Social Institute - Seminar on Low-Cost Housing. Extension Service, Bombay, Poona. 1961.
- Discusses the housing problem, approaches to the solution and basic principles and techniques involved in low-cost housing through cooperative efforts with government aid.
- XVID-5 International Labor Office - Workers' Housing Problems in Asian Countries. Asian Regional Conference, Tokyo, September 1953, Report II, International Labor Organization, Geneva. 1953. 177 pp.
- Includes account of the problem, role of workers and employer in housing supply, action by the government, national housing programs and policies, formulating a housing proposal, role of technical assistance. Bibliography.
- XVID-6 Jesus, Carolina Maria de - Beyond All Pity. Translated by David St. Clair. Panther Modern Society, London. 1970. 170 pp.
- United States Version: Child of the Dark. Dutton, New York. 1962. 190 pp.
- Diary of the author (Brazil).
- XVID-7 Kenyon, Peter; and Leslie, Ian - "Looking at Africa: Problems of African Housing," The Builder, Vol. 188 (No. 5859), pp. 920-22 (June 3, 1955).
- From a talk given by the authors to the architectural association--general discussion of housing problems in Africa, particularly South Africa and Rhodesia.
- XVID-8 Mangin, William - Peasants in Cities: Readings in the Anthropology of Urbanization. Houghton Mifflin Co., Boston. 1970. 207 pp.
- An excellent collection of articles dealing with urbanization. Includes articles by John E. Turner, Anthony and Elizabeth Leeds, Aidan Southall, Leonard Peotincov and Mangin. Contains a good bibliography.

- XVID-9 The Research Section of the Department of Economics and Certain Specialists in Other Departments, University of Natal - The Durban Housing Survey: A Study of Housing in a Multi-Racial Community. University of Natal Press, Union of South Africa. 1952. 508 pp.
- Report No. 4 of the Durban Economic Research Committee and Additional Report No. 2 of the Natal Regional Survey.
- Includes summaries of research carried out by the department of economics of the University of Natal. Articles of particular interest are: the general housing problem; subsidized housing in South Africa; the administration of municipal housing schemes in Durban; samples of Durban's problems; the problem of cheaper housing; national research and local development in housing. Includes maps, photos and statistical tables.
- XVID-10 Riddell, John - "The Housing Needs of Developing Countries -- Some Recent Trade Union Initiatives," Civilizations, Vol. 15 (No. 1), pp. 31-40 (1965).
- Housing a problem all over, but real problem is a question of priorities, especially in developing countries. In response to situation, trade unions have become restive: bilateral technical and financial assistance from advanced countries to developing -- emphasis on Africa -- discusses building costs and relationship of housing and economic development.
- XVID-11 Turner, John C. - "Official Housing Problems and Popular Solution," L'Architecture D'Aujourd'hui, Vol. 39 (No. 140), issue "Tiers Monde", (Oct.- Nov. 1968). Boulogne, France.
- XVID-12 U.N. - Survey of Current Housing Problems and Government Policies. New York. 1971. 45 pp.
- XVID-13 U.N. Department of Economic and Social Affairs - World Housing Conditions and Estimated Housing Requirements. N.Y. 1965. 58 pp. [ST/SOA/58].

A report on housing needs determined by population growth from net additions and migration; inadequate and obsolete existing stock; and substandard housing. Based on these determinants, annual housing requirements in the developing regions of the world for the period 1960-1975 estimated to be around 390 million dwellings; at an annual production of 8 to 10 dwellings per 1000 inhabitants. The report recommended that housing and urban development should be an integral part of development plans, and the necessary economic resources should be mobilized.

- XVID-14 Ural, Oktay (ed.) - Proceedings of the Second International Symposium on Lower-cost Housing Problems. University of Missouri, Rolla, Missouri. 1972. 290 pp.

Comprehensive.

- XVID-15 Yeh, Stephen H.K.; & San, Lee Y. - Housing Conditions in Singapore. reprinted from The Malayan Economic Review, Vol. 13 (No. 1), pp. 11-38 (April 1968). Reprint Monograph Series No. 16, Economic Research Centre, University of Singapore.

Gives a historical summary of housing development in Singapore. Uses data from a 1966 sample household survey which contained information relating to housing facilities and household structure. Discusses the current (1968) housing conditions and implications for the immediate future.

- XVID-16 Anonymous - "Housing for the Bantu," The Builder, Vol. 188, pp. 412-15 (March 11, 1955).

The economic structure of South Africa is serviced by African labor. Due to this structure there is a need to house these laborers. There is a 167,000 housing unit shortage for the urban Bantu. In ten years the need will be 350,000 units. One problem is fund allocations from the government. At present research is being done to determine the needs of the people. Four class standards for building houses were determined,

ranging from minimum class to superior class. Training should be given to more of the Bantu in order that they can build housing for their own people. Private enterprise should help more in the area of housing.

- XVID-17 Anonymous - "Housing Problem," Oriental Economics, Vol. 23, pp. 290-91 (June 1955).

This article discusses the Japanese housing shortage and the ten-year plan proposed to alleviate the problem. The plan calls for construction of 420,000 dwelling units within the first year by both the government and private enterprise. In April of 1955 there was a 2,842,000 dwelling unit deficit. The causes of the shortage were high cost of building one's own home, the breakdown of the housing rental business, and the brief life span of Japanese units. Exact figures on dwelling costs, amount of units, etc., are included.

- XVID-18 Anonymous - Housing Problems in Uganda. Adult Education Centre, Milton Obote Foundation, Kampala. 1969. #\*

- XVID-19 Anonymous - Tokyo's Housing Problem. TMG Municipal Library, No. 5. March 1972.

Despite the industrial development of Japan since World War II, housing still presents a problem in Japan. Expensive housing is available due to the lack of a government policy on public housing, leaving the construction to private entrepreneurs and employers. The result has been urban sprawl. The problem must be treated as a major city problem and the solution is based on public-housing-centred thinking. Authors blame both the central government and the government of Tokyo. These 2 governments should align together to devise realistic policies based on housing demand. Must shift from excessive emphasis on industrial and economic growth to consideration of the living conditions of the citizens. Part I of the book relates how citizens are actually housed. Part II

illustrates how Tokyo's housing famine makes the citizens' lives poorer and their social disparity deeper. Part III emphasizes that the housing problem has resulted from Japan's post war economic and financial policies. Part IV analyzes current housing policy and proposes a future policy.

For further references on this topic, see items:

II-10, IIIB-11, IV-33, VID-3, XIIIB-12, XXIII-9, XXIII-37, XXIII-58, XXIII-67, XXIII-102, XXIV-4, XXIV-9.

## XVII. RELOCATION

- XVII-1 Back, Kurt Wolfgang - Slums, Projects and People: Social-Psychological Problems of Relocation in Puerto Rico. Duke University Press, Durham, N.C. 1962. 123 pp.
- Study of relocation and housing projects in San Juan, Puerto Rico. The author perceives the move from slum to housing project as a change in the way of life, a change of scene. Purpose of the survey is to understand the relocation process in itself and also because it gives a picture of individual reaction to social change. Used a cross-sectional survey of people in all phases of relocation. Used role-playing in interviews. Then examines the different ways in which relocation is regarded.
- XVII-2 Baker, Carolyn E.; Blaetus, Marcella C.; et. al. - Relocation: People and Problems. M.S.W. Dissertation, Howard University. June 1960. \*
- XVII-3 Gans, Herbert J. - The Urban Villagers: Group and Class in the Life of Italian-Americans. Free Press of Glencoe, N.Y. 1962. 367 pp. Includes a bibliography.
- XVII-4 Hartman, Chester W. - "Social Values and Housing Orientations," The Journal of Social Issues, Vol. 19 (No. 2), pp. 113-131 (April 1963).
- Studies effects on mental health of forced relocation in Boston's West End. Clarifies the prevalent values and patterns of a stable and vital urban working-class neighborhood.
- XVII-5 Marris, Peter - Family and Social Change in an African City: A Study of Rehousing in Lagos. Northwestern University Press. 1962.

This book is an exploration of the changes in Lagos, Nigeria, due to slum clearance and its effects on the people's family life and livelihood. The study is based on four interviews and attempts to examine the social problems facing tropical town planners and the pressures of a radically changing social structure upon the family. The last few chapters of the book are devoted to conclusions concerning governmental policies and an evaluation of family life changes. Marris feels that traditions of family life should be adopted into new planning designs.

XVII-6 Perry, Brian - "Nigeria - Design for Resettlement," Interbuild, pp. 18-23 (January 1964). (London).\*

For further references on this topic, see items:

I-1, XIV-8, XIV-12, XIV-13, XVIB-2, XXIII-84, XXIV-19.

## XVIII. HEALTH

- XVIII-1 Andrzejewski, A.; et al. - Housing Programmes: The Role of Public Health Agencies. World Health Organization, Public Health Paper No. 25, Geneva. 1964.

The role of public health agencies in planning housing and the maintenance of housing standards is discussed. The responsibility of health administrators to improve health standards through improvement of the housing environment is emphasized. Health administrators should help in the development and execution of programs and policies related to the housing environment. Health officials should try to increase community participation in housing programs. There should be a close working relationship between housing officials and public health officials.

- XVIII-2 Buchanan, C.R. - "Modernization of Indigenous Housing Practice in Tropical Countries," Royal Sanitation Institute Journal, Vol. 70 (No. 4), pp. 457-63 (1950). Discussion, pp. 463-66.

The special housing problems of the tropics are discussed and some suggestions for solving them and also for improving health and sanitation are presented. The housing problem in urban areas of the tropics is urgent because of the need to reduce overcrowding, whilst even in rural areas there is an increasing demand for better houses. It is stressed that developing trends should be directed along lines which will incorporate modern ideas of health requirements whilst still preserving the best features of traditional design. Housing design should conform to the social customs and family structure of the local community; in view of recent developments in the control of mosquitoes and other insects close liason between building and insecticide research is recommended as well as the prosecution of research on the best uses of local building materials. Standards of space, ventilation, height, lighting, accommodation

and sanitation in tropical countries are reviewed and some unaccountable variations are indicated. In spite of varying conditions, it should be possible to formulate basic minimum standards necessary to ensure a satisfactory state of public health in urban and rural areas. From the sanitary aspect it is preferable to provide for separate apartments rather than retain the simple structure of one or two larger rooms; a separate latrine to each family unit is advocated. The designs adopted in suburban housing schemes and elsewhere in the large towns may serve as models for the owner-occupier to emulate in rural areas.

- XVIII-3 Calderwood, D.M. - Housing Health and Poverty. National Building Research Institute, South African Council for Science and Industrial Research, Reference No. RD 40, The Council, Pretoria. 1963. 6 pp. \*
- A general discussion with special reference to standards of low-cost housing accommodation in South Africa and to social surveys investigating the spread of incomes and the problems of poverty.
- XVIII-4 Chapin, F. Stuart - "The Relationship of Housing to Mental Health," Working Paper for the Expert Committee on the Public Health Aspects of Housing of the World Health Organization. June 1961. Mimeo. \*
- XVIII-5 Deshpande, Raghunath Shripad - Cheap & Healthy Homes for the Middle Class of India. 7th Edition. 1969. #
- XVIII-6 Gilbertson, Wesley E.; & Mood, Eric W. - "Housing, the Residential Environment & Health--A Re-Evaluation," American Journal of Public Health and The Nation's Health, Vol. 54 (No. 12), pp. 2009-2013 (Dec. 1964).

Housing quality affects the physical and mental health and social well-being of the occupants. Local and state public health agencies should become more involved in urban redevelopment, renewal and community improvement programs as a means of developing a more sanitary residential environment with safe, hygienic and decent housing. Authors propose a national conference on hygiene of housing and the residential environment.

XVIII-7 H.E.W. (U.S.) - Proceedings of the First Invitational Conference on Health Research in Housing and its Environment. Environmental Health Service, Public Health Service, U.S. Department of Health, Education and Welfare, Washington, D.C. 1970. \*

XVIII-8 Kinzey, Bertram York - Environmental Technologies in Architecture. Prentice Hall, Englewood Cliffs, N.J. 1963.

1. Environmental Engineering
2. Sanitation, Household
3. Building fittings

XVIII-9 Martin, John - "Housing and Health Schemes, South Africa: Welfare of Orange Free State Native Mineworkers," The Builder, Vol. 205 (No. 6274), pp. 325-6 (August 16, 1963).

Deals with the Anglo-American corporation group in and around the town of Welkom in South Africa's Orange Free State province. Article discusses the accommodations available for the mineworkers. Incorporates housing, health and welfare.

XVIII-10 Mora-Rubio, R. - The Health Aspects of Housing in Latin America. Centro Interamericano de Vivienda y Planeamiento, Bogota. 1962. 37 pp. \*

This monograph analyzes the population of Latin America and discusses the housing problem, the provision of water and drainage, minimum housing standards, the effect of housing on health and state-aided and private programs of improvising housing.

- XVIII-11 World Health Organization - Expert Committee on the Public Health Aspects of Housing: First Report. Technical Report Series No. 225, Geneva. 1961. 60 pp.

Covers the fundamentals of a healthful residential environment; special considerations for housing in rural areas; housing for special groups; role of the public health agencies in the field of housing; community action in housing activities; training of public health and other technical personnel; research needs; suggestions for future action; with a summary of principal recommendations.

For further references on this topic, see items:

I-7, I-46, XIIIIC-5, XIV-3, XIXA-11, XIXA-15, XXIII-14, XXIII-86.

## XIX. EFFECTS OF PHYSICAL ENVIRONMENT

## XIXA. Climate

XIXA-1 Aronin, J.E. - Climate & Architecture. Reinhold Publishing Corp., New York. 1953.

XIXA-2 Atkinson, G.A. - "Building in the Tropics," R.I.B.A.J., Vol. 57 (No. 8), pp. 313-320 (1950).

Some of the more important problems in tropical building are discussed, some tentative solutions are offered, and some of the facilities available for research on low-cost housing in tropical climates are reviewed. After a brief characterization of tropical climates and of man's physiological reactions in such conditions, the comfort requirements for buildings in hot climates are discussed, especially the need for light-colored surfaces, adequate shading, even diffusion of bright day light, free movement of air and cool interior surfaces. The application of these principles is somewhat different for each of the three basic tropical climates--hot and dry, hot and humid, and upland--the specific design requirements for each of which are detailed. Consideration is given to the position regarding housing and planning in tropical countries, and to the need for formulating minimum standards of space and accommodation in order to safeguard public health as well as individual comfort and privacy in low-cost housing schemes. Building techniques are briefly described with special reference to the suitability of earth building (wattle and daub, cob, pisé, and cement-stabilized earth) in many parts of the tropics. Ways in which scientific research can assist in the development of both traditional and improved (mainly European) building techniques are indicated.

XIXA-3 Bean, Keith - "Better Housing for Hot Climates," New Commonwealth, p. 248 (April 1959). \*

XIXA-4 Buckens, F. - Considérations sur l'étude climatologique de l'habitation Tropicale. Bruxelles. 1956 (in French).

- XIXA-5 Correa, Charles - "Climate Control," Architectural Design, Vol. 39 (No. 8), pp. 448-451 (August 1969).

Discusses five concepts of climate control in tropics for dwellings. Photos and diagrams.

- XIXA-6 Dhar, D. N. - "Industrial Housing for the Tropics," Indian Concrete Journal, Vol. 31 (No. 2), pp. 51-53 (1957).

Differences in climatic and living conditions between Europe and India are briefly noted, and the planning of one room house (convertible into 2 room houses) is considered in detail. The importance of providing for storage is stressed. Orientation and planning of the site are discussed fully with examples. A complete set of working drawings of single room quarters is given.

- XIXA-7 Drew, Jane B.; & Fry, E. Maxwell - Tropical Architecture in the Dry and Humid Zones. Reinhold Pub. Corp., N.Y. 1964. 264 pp. Includes a bibliography.

- XIXA-8 Drew, Jane B.; & Fry, E. Maxwell; in collaboration with Harry L. Ford - Village Housing in the Tropics. L. Humphries, London. 1947. 134 pp.

- XIXA-9 Ehrenkrantz, Ezra D. - "A Plea for Technical Assistance to Overdeveloped Countries," Ekistics, Vol.12 (No. 71), pp. 167-72 (September 1961).

We have tended to lose sight of primary design considerations. Build structures which are unsuitable and occasionally uninhabitable--some indigenous housing is eminently more efficient and suitable to the local climate.

- XIXA-10 Fitch, J. M.; & Branch, D. P. - "Primitive Architecture and Climate," Scientific American, Vol. 203, pp. 134-144 (Dec. 1960). \*

Dwellings designed and used by primitive people, which meet the severest climate problems, despite small choice of available raw materials. A study of the igloo, adobe, thatched huts, tepee,

Kazak tent, and other primitive dwellings.  
 Comparison with modern architecture. Matching  
 of primitive villages with the types of climate.  
 Drawings and cross-section of these dwellings.

- XIXA-11 Fry, M.; & Drew, J. - Tropical Architecture in the Humid Zone. B.T. Batsford Ltd., London. 1956.  
 320 pp.

Contents: Climate. The House. Housing and town planning. Shops, markets and commercial buildings. Educational buildings. Health, hygiene and hospitalization. Appendices: List of principal building research stations. Sun data. Notes on the design of buildings in hurricane areas. Earthquake resistant structures. Protection of buildings against lightning. Water collection and supply in the tropics. Performance of building materials in the tropics. Stabilized earth construction. Thermal movement and building construction in West Africa. Air-conditioning and the architect. Exclusion of solar heat from buildings. Notes on special glass. Protection of buildings against termites. Fungus, as affecting decorations and finished surfaces. Space and accommodation standards for low-cost housing in the tropics. Building costs. Planting in the humid tropics. Firewood plantations.

- XIXA-12 Girouard, Mark - "Elegant Simplicity," Country Life, Vol. 130, pp. 818-9 (October 1961) London.

This article describes housing in a smart residential area of Ghana. The houses were designed by the rules of tropical architecture. Included are photographs and floor plans.

- XIXA-13 Hashimshoni, A. - "Problems of climatic planning in Israel," Israel Institute of Technology, Bulletin No. 9. Technion Research and Development Foundation, Haifa. 16 pp.

The problem in planning a built-up environment in warm climates is that of creating conditions which will permit a greater degree of activity. Whereas in cold countries the aim of climatic planning is to reduce the loss of body heat, the need in warm countries is to increase the cooling power of the environment. Initial

investments and maintenance expenses are required to create and maintain the desirable cooling power. The resulting increased efficiency in productivity will prove these investments economical. The problem of climatic planning is therefore not limited to human comfort, but is a fundamental factor in the national economy. The paper gives the various aspects to be considered by the planner. Analysis of Israel's climatic conditions shows that the sharp contrasts demand "local" approach to planning in the various regions. Building design is only one aspect among the planning problems of the "built up environment." The minimum requirement to be considered by the planner is to prevent more difficult climatic conditions than those in the surrounding un-built-up area. The main object, however, is to obtain a climate comfortable for activity within the city. The traditional building in the Mediterranean Basin used three structural forms characterized by their micro-climate. These were the open shed, the cave (or equivalent thick-walled construction) and the courtyard. The combination of these three forms provided a choice of desirable conditions according to the time of the day and year. On a higher level of civilization, the planner seeks a solution combining the micro-climatic qualities of the basic types, within a more or less unified space. The achievement of the aim is still in the experimental stage.

- XIXA-14 HUD (Housing and Home Finance Agency, U.S.A.) - Physiological Objectives in Hot Weather Housing: An Introduction to the Principles of Hot Weather Housing Design, by Douglas H.K. Lee. Washington, D.C. 1953. 77 pp.

Presents those principles, the observance of which it is believed would minimize the direct effects of hot environments upon man, insofar as housing and shelter can do this. Principles are preceded by a simplified analysis of tropical and subtropical climates and an explanation of the way in which they act upon man. Principles of housing developed for typical hot dry, warm humid environments and finally modifications of these basic principles to meet more common combinations of climatic types and certain

special cases. While some specific methods of application may be mentioned by way of illustration, no attempt is made to provide detailed instructions for each of the endless variety of cases that arise.

XIXA-15 HUD (U.S.A.) - Village Housing in the Tropics with Special Reference to West Africa. by Keith H. Hinchcliff, Office of International Affairs, Washington, D.C. 1963. 67 pp.

XIXA-16 Lee, Douglas H. K.; & Henschel, Austin - Evaluation of Thermal Environment in Shelters. Occupational Health Research and Training Facility, Cincinnati, Ohio - Washington U.S. Department HEW, Public Health Service, Division of Occupational Health. 1963. 58 pp.

This report arose out of a need for a systematic method of predicting the probable effect of given shelter environments on the various types of people who might have occasion to use them. It is restricted to thermal aspects. The predictive scheme offered here is in 4 parts: a) a chart for determining the probable relative strain posed by any temperature -humidity combination upon a (specified) standard individual under (specified) standard conditions, b) a table for adjusting the chart to other than the standard values of activity and air movement, c) an evaluation of the significance of each zone of relative strain for a (specified) standard individual, d) evaluations of each zone of relative strain for certain non-standard individuals (from conclusion)--includes a bibliography.

XIXA-17 Lee. D.H.K. - "Thoughts on Housing for the Humid Tropics," Geographical Review, Vol. 41 (No. 1), pp. 124-47 (1951).

This article, illustrated by 24 photographs of suitable types of building, sets out the amount of radiation falling on roof and walls, reflection by paint of various colors, insulating effect of different materials and of air spaces, and protection against rain. The greatest trouble is high vapor pressure, hence

through-ventilation is important and there should be no cross wind partitions. Floor structure and house planning is discussed. Examples of houses are described for India, East Africa, Nigeria, Australia and Puerto Rico, with costs.

- XIXA-18 Muszynski, W. - "Building in Tropical Conditions," Czasopismo Techniczne, Vol. 75 (No. 139), pp. 33-37 (1970). (In Polish).

Describes the survey of buildings in East Pakistan carried out in 1966-68 and gives recommendations for advising the local authorities to develop houses that suit local climatic conditions.

- XIXA-19 Oakley, David - Tropical Houses; A Guide to their Design. Batsford, London. 1961. 272 pp.

- XIXA-20 Olgyay, Victor - Design with Climate: Bioclimatic Approach to Architectural Regionalism. Princeton University Press, Princeton. 1963. 190 pp.

- XIXA-21 Olgyay, Aladar; & Olgyay, Victor - Solar Control and Shading Devices. Princeton University Press, Princeton. 1957. 201 pp.

- XIXA-22 Peel, C. - "Thermal Conditions in African Dwellings in Sierra Leone, a study in indoor climate in British West Africa," Journal of the Institution of Heat and Ventilation Engineers, Vol. 22 (No. 27), pp. 125-43 (1954).

A comprehensive series of thermal observations as carried out in four different types of native houses in Sierra Leone. Each set of observations covered a period of twenty-four hours from 4pm to 4pm. The following instruments were used: a) psychrometers, b) globe thermometers, c) surface thermometers (for wall temperatures), d) photo-electric light meter calibrated in foot-candles, e) high-temperature silvered kata-thermometer. These instruments were read at two-hourly intervals and air velocities, relative humidities and effective temperatures were calculated and recorded. External climatic conditions throughout the

twenty-four-hour period were noted. The intensity of sunlight falling on the external surface of the housewalls and the amount of sunlight reflected back from the wall were measured with a light meter. Thermography recordings were made simultaneously in the roof space and bedroom of each house; these instruments ran for one week. The data collected were insufficient to enable accurate comparisons to be made of the thermal capacity of the various types of native house in Sierra Leone. It was thought, however, that the technique used in these observations would, if carried out over a climatically representative period, enable a complete evaluation to be made. The results of this preliminary investigation, although not significant, did appear to indicate that an improved thermal environment could be obtained by simple measures within the scope of the native builder and without departing from the traditional native-house design.

- XIXA-23 Ransom, W. H. - Solar Radiation: Thermal Effects on Building Materials. Department of Scientific & Industrial Research, Building Research Station, Tropical Building Studies no. 3, Her Majesty's Stationery Office, London. 1962. 18 pp.

In all regions, temperate or tropical, the radiant energy emitted by the sun has a pronounced effect upon the behavior and durability of materials exposed to it. This study deals with the global distribution of this energy and its thermal effects upon building materials. An indication is given of the levels of temperature likely to be reached on the surfaces of building materials and the relative stresses produced by the variation of temperature with time are considered in some detail. Though written primarily from a tropical standpoint, much of the text has a wider application. References.

- XIXA-24 South African Council for Scientific and Industrial Research and the University of Natal - Symposium on Design for Tropical Living. S.A.C.S.I.R., Durban, 1957.

A review of the impact of the physical environment on man and his buildings in tropical and subtropical regions, particularly in Natal. Included is a discussion on physiological and psychological aspects of design for tropical climatic conditions in order to determine the most durable, optimal living conditions in the tropics.

- XIXA-25 Troy, Robert D. - Lima, Peru: A Study of Housing in an Arid Coastal Region. International Center for Arid and Semi-Arid Land Studies, Special Report No. 13, Lubbock, Texas. 1969.
- XIXA-26 U.N. Department of Economic and Social Affairs - Design of Low-Cost Housing and Community Facilities. by Otto Koenigsberger; Carl Mahoney; & Martin Evans. Vol. 1: Climate and House Design. New York. 1971. [ST/SOA/93].

"The practitioner in the field...needs a self-contained aid to design, one book that gives him the data and tools he needs for his decisions in response to climatic considerations. 'Climate and House Design' is intended to meet his needs." (from the Introductory Statement.)

- XIXA-27 Whiteley, P. - Recommendations for Painting in Tropical Climates. Department of Scientific and Industrial Research, Building Research Station, Tropical Building Studies No. 4, Her Majesty's Stationery Office, London. 1962. 36 pp.

The recommendations cover the painting of the materials commonly used in tropical building, the selection of appropriate paints, having regard to the limitations or availability imposed by marketing considerations and notes on detail design of structures where this can affect paint performance. Factory painting of industrial products, the finishing of furniture or vehicles or the use of cellulose lacquers are not included.

- XIXA-28 Win, Kyaw - A Study of Low-Cost Housing in the Tropics. Thesis, Cornell University, Ithaca, New York. 1957.

Problems of housing in the tropics -- climate, building materials -- Puerto Rico, Burma. Comprehensive.

For further references on this topic, see items:

I-32, I-53, IIIB-3, IIIB-7, IV-6, IV-18, IV-28, VA-7, VB-7, VC-9, VD-1, VIB1-4, VID-4, XVIII-2.

#### XIXB. Durability

For references on this topic, see items:

VA-7, VB-7, VC-3, VE-22, XIXA-11, XIXA-17, XIXA-23, XIXA-27, XIXA-28.

#### XIXC. Natural Hazards

XIXC-1 Building Research Advisory Board - Foundations for Residential Structures in Seismic Areas. National Academy of Sciences, Washington, D.C. 1969. # \*

XIXC-2 Cornwell, Warren - "Ecuador: New Low-Cost Homes Follow Earthquake Devastation," The Journal of Housing, Vol. 9 (No. 4), pp. 134-36 (April 1952).

Gives details of size and structure of house which is said to be "decent, safe and sanitary." Used self-help principle, aided by Pan American Union. A national housing agency was to be developed from these combined efforts.

XIXC-3 Anonymous - "Plastic dome houses provide emergency shelter," Engineering-News Record, Vol. 184, p. 19 (April 23, 1970).

Plastic dome houses formed by spraying polyurethane over a mold (by Farbenfabriken Bayer AG of Leverkusen, West Germany). Domed units (16' in diameter, 10' high) used for the people left homeless after an earthquake in western Turkey. Brief description of construction and construction equipment. Fabrication time: 1 hour for each unit.

For further references on this topic, see items:

VA-5, VE-15, XIXA-11.

XIXD. Miscellaneous

XIXD-1 West African Building Research Institute -  
Termites and Buildings. Information Sheet  
No. 6, Accra. 1956. 4 pp.

## XX. HOUSING SURVEYS

- XX-1 Atkinson, G. A. - "Housing in the British Colonial Territories," Builder, Vol. 187 (No. 5826), pp. 630-631 (1954). (London).

A survey of recent developments in colonial housing including progress made, mainly through the aid of governmental organizations in Hong Kong, Malaya, Singapore, East Africa, Gold Coast, West Indies, and the Mediterranean territories. Comments on housing conditions, requirements and building costs in these colonial areas are made, and the need for specially trained housing assistants, colonial municipal surveyors and architects is stressed.

- XX-2 Braisch, George; Crooke, Patrick; & Shaw, John - Bashagra Area Settlements, 1963. University of Khartoum, Khartoum. 1964. 177 pp.

In regard to physical development the following conclusions are reached: an increase in population will not only demand an expansion of housing areas but also better living accommodation and services. Moreover, the cost of improved housing and services will have to be covered by local funds and through official agencies; investments will stimulate mutual aid and community cooperation. Under community development it is suggested that the improvements be achieved within the framework of existing social patterns; that these social patterns be considered as dynamic organisms; and that the community be encouraged to identify its own wants and needs, and to work cooperatively to satisfy them.

- XX-3 Caminos, H.; Turner, J. F. C.; & Steffian, John - Urban Dwelling Environments -- An Elementary Survey of Settlements for the Study of Design Determinants. MIT Report 16, MIT Press, Cambridge, Mass. 1969.

The sections of particular interest are those that analyze a group of barriadas around Lima

and another Peruvian city. Analysis deals directly with the problem of personal pride through own home, and, together with other material, by Turner and others, discounts the typical fiction about *barriadas* (breeding grounds for radicals, etc...).

- XX-4 HUD (USA) - How to Make and Use Local Housing Surveys. Bureau of Business and Social Research, University of Denver, Denver, Colorado, Office of International Affairs, Washington, D.C. 1954. 106 pp.
- XX-5 Mathur, G.C. (ed.) - Monograph on Housing Situation in India. National Building Organization, Ministry of Works, Housing, and Supply, Government of India, New Delhi. 1959. 124 pp.
- Background: Economic conditions; demographic features; housing conditions and needs; housing policy; housing programs; economic aspects; technical aspects; physical planning and slum clearance; technical assistance. Sample designs.
- XX-6 Palvia, C.M. - "Investigations into the Occupancy Pattern of Tenements Constructed under Subsidized Industrial Housing Scheme," Journal of the National Building Organization, Vol. X (No. 3), pp. 33-39 (July 1965).
- XX-7 U.N. Economic Commission for Asia and the Far East - Asian Recommendations for the 1970 Housing Censuses. New York. 1966. 34 pp. [E/CN.11/772].
- XX-8 U.N. Statistical Office - General Principles for a Housing Census. New York. 1958. 14 pp. [ST/STAT/SER.M/28].
- XX-9 U.N. Statistical Office - Handbook of Population and Housing Census Methods. 3 Volumes. New York. 1969-72. [ST/STAT/SER.F/16]. \*
- XX-10 U.N. Statistical Office - Principles and Recommendations for the 1970 Housing Census. New York. 1967. 140 pp. [ST/STAT/SER.M/45]. \*

XX-11 U.N. Statistical Commission - Proposed Methods of Estimating Housing Needs. N.Y. 1960. [E/CN.3/274] . \*

XX-12 U.N. - Report of the Latin American Seminar on Housing Statistics and Programmes. N.Y. 1963. [E/CN.12/647/REV.1] . \*

This report is divided into 7 discussion areas: 1) work of the seminar; 2) housing needs in Africa, Asia and Latin America; 3) formulation of national housing programs; 4) implementation of such programs; 5) statistics needed for program development; 6) administrative arrangements; 7) and general conclusions. The Annex to the book includes list of participants, Agenda, report outlines and discussion of UNECE. The general conclusions were to recognize the importance of long-term national housing programs, develop a suitable methodology for program formation, recommend to Governments that priority be given to collection of basic housing statistics, establish housing statistics department, and to provide frequent opportunities for experience exchange amongst housing experts.

XX-13 U.N. Economic Commission for Africa, Conference of African Statisticians - Report of the Seminar on Housing Statistics and Programmes for Africa, Copenhagen, Denmark, 31 Aug. - 15 Sept., 1966. N.Y. ? 1968. 71 pp. [E/CN.14/CAS.5/16/R1.c.1] . #

XX-14 U.N. Economic Commission for Asia and the Far East - Report of the Seminar on Housing Statistics and Programmes for Asia and the Far East, Copenhagen, Aug. 25 - Sept. 14, 1963. N.Y. 1965. [E/CN.11/677/REV.1] .

XX-15 U.N. Economic and Social Council, Statistical Commission - Report on the 1960 World Population and Housing Census Programmes. N.Y. 1965. [E/CN.3/329] .

XX-16 U.N. Secretariats of the Regional Economic Commissions, Economic Commission for Europe - Report on the Seminar on Housing Surveys and Programmes, with Particular Reference to Problems in the Developing Countries, held at Zagreb, Yugoslavia, Oct. 1961. 170 pp. [ST/ECE/HOU/5] . # \*

Contents include: Housing and Economic Development; basic information on the housing situation; present housing requirements; assessing future housing requirements; housing programmes; the material and technical implementation of housing programmes; administrative and organizational requirements in the preparation and execution of housing programmes at all levels.

- XX-17 U.N. Statistical Commission - Report on the Sixteenth Session. N.Y. 1971. [E/CN.3/417].

This article is an account of the 16th session of the Statistical Commission held in Oct. of 1970. The report is divided into 15 parts, among them: organization of the session, national accounting, demographic statistics, integration of international statistical programs, directory of enterprises, 1973 world program of industrial statistics, demographic and housing statistics. The most pertinent section is that on housing statistics. This section discusses the need for better statistics and the efforts made in that direction.

- XX-18 U.N. Economic Commission for Asia and the Far East - Seminar on Housing Statistics and Programmes for Asia and the Far East, Copenhagen, 1963. N.Y. 1964. 177 pp. [E/CN.11/677]. \*

- XX-19 U.N. Department of Economic and Social Affairs, Statistical Office - Statistical Indicators of Housing Conditions. New York. 1962. 21 pp. [ST/STAT/SER.M/37].

- XX-20 U.N. - Techniques of Surveying a Country's Housing Situation, Including Estimating of Current and Future Housing Requirements. N.Y.? 1962. # \*

- XX-21 U.N. General Assembly - Workers' Housing Problems in Non-Self Governing Territories. N.Y. 1958. [A/AC.55/L.277].

This report deals with the general housing situation, the priority of housing in economic development, town and country planning, workers' and employers' action. The paper is mainly

based on the African Labor Survey. The purpose of the report is to bring together information that will aid the committee in discussing the living standards of workers in non-self governing territories. Some of the conclusions are that since World War II the housing situation has deteriorated, in growing countries housing does not get a high enough priority, governments must encourage local labor for house building, far-sighted town planning is needed, self-help housing should be encouraged, housing cooperatives should be organized, there should be much government assistance, and expansion of construction resources is needed.

- XX-22 West Bengal (Government), State Statistical Bureau - Survey of Housing Condition in Calcutta Corporation Area, 1963. Calcutta, 1968. 45 pp.

Survey data.

- XX-23 Anonymous - Housing & Town & Country Planning in the U.K. Dependencies. Central Office of Information, Reference Pamphlet 39, Her Majesty's Stationery Office, London. 1960. 51 pp.

Opens with a general survey of the main problems that have confronted the governments of the dependencies in organizing the provision of adequate housing and sketches the growth of government responsibility for both housing and town planning. In subsequent chapters is an account of the organization of town planning, of the way in which the housing effort is organized and financed, the record of achievement in housing for rent and for home ownership. Concludes with chapters on building methods, materials and standards, on training and research and on international cooperation. Has some examples of self-help housing.

- XX-24 Anonymous - "A Survey of Dwellings and Living Conditions of Industrial Employees in Madras City," Indian Journal of Social Work, Vol. 26, pp. 69-80 (April 1965). \*

For further references on this topic, see items:

IX-10, XVID-13, XVIII-3, XIXA-18, XXIV-2.

## XXI. HOUSING ANALYSIS

- XXI-1 Bloomberg, Lawrence N. - "Housing Demand Analysis in Developing Countries," American Statistical Association, Proceedings of the Social Statistics Section, pp. 161-9 (1966). (Washington, D.C.).
- When housing estimates are based on housing market forces, one should be aware not only of unreliable data, but also consumer behavior. Further, the analyst should be sensitive to problems peculiar in each country.
- XXI-2 Desalvo, J.S. - "A Methodology for Evaluating Housing Programs," Journal of Regional Science, Vol. 11 (No. 2), pp. 173-83 (1971).
- Presents a mathematical model for calculating relations between the net and gross tenant benefits, non-tenant benefits, tenant subsidy and resource cost, which are used for economic evaluation of housing projects.
- XXI-3 Gerckens, Laurence Conway - Urban Blight and Slums: Concepts, Causes and Patterns of Development. Thesis, Cornell University, Ithaca, New York. 1958.
- Cortland, New York - blight.
- XXI-4 Goodman, Sophia - Analyses of Blight Measurement Methods in the Community Renewal Programs of Eleven Cities. Urban Renewal Design Center, School of Architecture, Washington University, St. Louis. 1968.
- Blight measurement methods used by Community Renewal Programs in the United States.
- XXI-5 HUD (USA) - Housing Market Analysis in Latin America: A Technique to Estimate Housing Requirements in Terms of the Ability of Families to Afford Shelter at Various Price Levels. Division of International Affairs, Washington, D.C. 1965. 48 pp.

The purpose of this manual is to make available to Latin American housing officials market analysis techniques for estimating the number of families able to pay for housing at various price levels. Geared toward Latin America specifically.

XXI-6 HUD (USA) - Urban Housing Market Analysis. by Richard W. Lippold. Washington, D.C. 1967. 100 pp.

XXI-7 Mosier, Charles I. - Evaluating Rural Housing. University of Florida, Gainesville. 1942.

This is the summary report of the Sloan Project in applied economics dealing with housing conditions improvement. The University of Florida has undertaken a research project on methods and effects of teaching housing in rural schools. A housing inventory and housing index were developed to measure housing adequacy. A very detailed plan for administering the survey is included with computing instructions. The inventory questionnaire is reproduced in its entirety.

XXI-8 O'Block, R.P. - "An Economic Model for Low-Cost Housing Projects: Program and Policy Evaluation," Socio-Economic Planning Sciences, Vol. 4 (No. 1), pp. 131-45 (1970).

In order to assist housing policy makers in evolving legislation policy, programs and projects, acceptance or rejection criteria, a model has been developed that employs simple mathematical equations to represent the economics of the construction and operation process. The work described here has been devoted to analyzing and documenting the factors influencing housing, developing the mathematical equations, writing the computer program, testing the sensitivity of various factors and performing simple tests to examine the model's feasibility as an aid in formulating and evaluating public housing policy.

- XXI-9 Pennance, Fred G. - Housing, Market Analysis and Policy. Institute of Economic Affairs, Hobart Paper 48, London. 1969. 87 pp.

Subject is Great Britain.

- XXI-10 Tesfazion, Amanuel - Supply and Demand Factors of Housing and Their Linkages to Economic Development in Africa. Unpublished Thesis, Cornell University, Ithaca, New York. 1971.

A survey of housing needs and a discussion of critical factors to include when making housing estimates, specifically in relation to problems of economic development.

- XXI-11 Tokmakian, H. - Measurement and Analysis of Residential Density and Livability. Thesis, 1956. #\*

- XXI-12 U.N. Department of Economic and Social Affairs - Methods for Establishing Targets and Standards for Housing and Environmental Development .N.Y. 1968. 59 pp. [ST/SOA/76]. \*

- XXI-13 U.N. Department of Economic and Social Affairs, Statistical Office, Studies in Methods Series F no. 12 - Methods of Estimating Housing Needs. New York. 1967. [ST/STAT/SER.F/12].

Includes information on procedures, basic statistics, purpose and coverage, application and criteria. Also contains a 47 entry bibliography.

For further references on this topic, see items:

IIIA-16, XIV-24, XVIII-10, XXII-1, XXII-4, XXIII-47.

## XXII. PILOT PROJECTS

- XXII-1 Calderwood, P.M. - "An Approach to Low-Cost Urban Native Housing in South Africa," Town Planning Review, Vol. 24 (No. 4), pp. 312-28 (January 1954).

Methods of providing low-cost housing for the native population in South Africa are described and illustrated with special reference to the successful housing scheme of Kwa-Thema by the Town Council of Springs in the Witwatersrand.

- XXII-2 Carlson, Eric - "Evaluation of Housing Projects and Programmes: A Case Report from Venezuela," Town Planning Review, Vol. 31 (No. 3), pp. 187-207 (October 1960).

An evaluation of the Caracas Public Housing Projects covering the social, economic, technical and administrative aspects of the study and includes policy recommendations for housing programs. The high-rise apartment buildings in Caracas (known as superblocs) were built between 1954 and 1958. The management of these buildings requested CINVA, Pan American Union's Inter-American Housing and Planning Center, to review the mounting socio-economic and administrative problems which had set in almost from the beginning of the projects. The report concluded by emphasizing the importance of considerations of social aspects at all levels of planning, implementing and managing of housing, not only in Latin America but also in other developing countries. Superblocks were seen as symbols of imbalances of the nation's economic and social life and proposed periodic evaluation projects as devices for measuring the country's progress.

- XXII-3 Fitch, J.M. - "Previ/Lima: Low-Cost Housing Project," Architectural Design, pp. 187-205 (April 1970). (London).

Experimental project in housing for Peru. Purpose is to develop methods and techniques to be applied on larger and significant scale as part of Peru's housing policy. First pilot scheme is for the design and construction of a community of approximately 1,500 low-cost houses. Second pilot scheme is to develop procedures and techniques to rehabilitate and extend the life of older houses. Third pilot project is to develop methods and techniques for planning the rational establishment and growth of spontaneous housing settlements to meet proper standards. The article continues in more detail on the schemes and gives the plans and construction details of the designs submitted.

XXII-4 H.U.D. (U.S.A.) - An Analysis of Twelve Experimental Housing Projects. Washington, D.C. 1969. 79 pp.

XXII-5 HUD (Housing and Home Finance Agency, U.S.A.) - Low Income Housing Demonstration: A Search for Solutions. Office of Program Policy, Washington, 1964.

Progress made under the low-income housing demonstration program from 1961 to 1964 included 31 new demonstration projects aimed at 1) lowering the costs of new construction; 2) using the existing housing supply; 3) supplementing rents in privately owned dwellings; 4) facilitating home ownership or home improvement for low-income families. Although none of the 31 projects had been completed at this time, it was felt that the program was flexible and adaptable to the various needs of low-income families. Two self-help projects in Pierre, South Dakota and Indianapolis had been started at this time.

XXII-6 Laquian, Aprodicio A. - Slums are for People: The Barrio Magsaysay Pilot Project in Urban Community Government. Local Government Center, College of Public Administration, University of the Philippines, Manila. 1968.

Project sponsored by the presidential arm on community development in an attempt to understand the character of urban slums and search for ways and means by which conditions may be improved. Even in an urban area the spirit of community is important. Used self-help system with guidance and support from professionals. Book focuses on the people themselves.

- XXII-7 Sanoff, Henry; Porter, Tyrus; & Rapoport, Amos - Low-Income Housing Demonstration. Project Report (November 1965) for HUD Low-Income Housing Demonstration, University of California, Berkeley. 1965. 251 pp.

Analysis of problems involved in design of permanent housing for low-income families in a hot-arid region of the United States. Three prototype dwellings were constructed in Fresno, California. Includes concern for climatological comfort as well as living patterns and sociological structure of the families.

For further references on this topic, see items:

VIII-1, XXIV-22.

## XXIII. COUNTRY &amp; REGIONAL STUDIES

- XXIII-1 Abrams, Charles - Report to the Barbados Government and the Barbados Housing Authority. N.Y. 1963. # \*
- XXIII-2 Abrams, Charles; Banks, James G.; Dodge, J. Robert; Gilman, Marvin S.; & Oberg, Kalervo - Report of Housing Team of the International Cooperation Administration to the U.S. Operations Mission. Jamaica. April 1961.\*
- XXIII-3 Aggarwal, S. C. - Industrial Housing in India. Roxy Printing Press, New Delhi. 1952.
- Complete survey of India's housing problems up to 1952. It discusses the origin of the housing problem, sociological issues, the effects of bad housing, housing policy, financing housing, and housing construction. Attention has been paid to the Planning Commission's Five Year Plan. Also great attention has been paid to building materials and prefabrication. The book is most explicit and deals with cost figures and numerous statistics. It is concluded that the major problem in alleviating India's housing shortage is financing.
- XXIII-4 Agoro, Olatunji - Social Aspects of Slums and Redevelopment in Western Region of Nigeria. Thesis, Cornell University, Ithaca, New York. 1967.
- XXIII-5 Akerson, Torvald - Education in Marble Halls or Under Trees: Low-Cost Houses in East Africa Especially Ethiopia and Tanzania. Stockholm. 1966. # \*
- XXIII-6 Alderson, Stanley - Britain in the Sixties: Housing. Penguin, Hammondsworth. 1962.

An analysis of Britain's housing problems in the late 1950's and early 1960's. The shortage of housing doesn't just affect the lower class family. Families who could afford decent housing were unable to obtain it in the market. Since 1885 there has been no comprehensive public inquiry into housing. The topics discussed are old and new units, family desires, home ownership, planning national policy and politics.

XXIII-7 Andrzejewski, A. - Building and Housing--Investigations in the Socialist Countries. Warsaw. 1966. 310 pp.

XXIII-8 Atkinson, G. A. - "Housing and Building in the Commonwealth," Journal of the Royal Society of Arts, Vol. 105 (No. 5004), pp. 535-54 (May 24, 1957).

Examines the early years of building, particularly in Australia and India, the influence of Britain on overseas building, and the present needs of overseas building. During the early 1950's much happened in the field of housing overseas; the governments began establishing housing policies. A discussion of various territories and their housing policies is presented. Atkinson feels that these territories in the future will place more emphasis on town planning, low-income housing, building and engineering.

XXIII-9 Atkinson, G.A. - Report on Housing for Government Officers in Division II and Lower, The Federation of Malaya. Government Press, Kuala Lumpur. 1953.

Housing costs not very low--deals with rules and regulations for housing government officers. Touches slightly on housing problem in general.

XXIII-10 Atkinson, G. Anthony - "West Indian Houses," Architectural Association Journal, pp. 194-9 (February 1952). \*

- XXIII-11 Balan, Jorge - "Migrant-Native Socioeconomic Differences in Latin American Cities: A Structural Analysis," Latin American Research Review, Vol. 4 (No. 1), pp. 3-30 (Spring 1969).

Special information that affects housing.

- XXIII-12 Bedwell, E. - "Low Cost Housing (Multi-Storey Blocks) in Hong Kong, 1958," Housing Centre Review, Vol. 7 (No. 6), pp. 181-83 (1958).

- XXIII-13 Calderwood, D. M. - Native Housing in South Africa, Thesis, University of Witwatersrand, Johannesburg. 1955 ? 202 pp.

- XXIII-14 Caribbean Commission Central Secretariat - Aspects of Housing in the Caribbean. Kent House, Port-Of-Spain, Trinidad. 1951.

The study presents problems of housing, sanitation and health in the Caribbean and the tropics in general. Congestion, overcrowding and substandard housing, both in Caribbean rural and urban areas are found to correlate with incidence of certain diseases. Traditionally, more money had been spent on treatment of the diseases and less on the home-environmental diseases. This part of the volume points out the factors related to the problems of health-housing relationships. The rest of the volume gives statistical data and problems of the financial institutions and construction materials and methods; reports on self-help housing and housing development programs throughout the Caribbean. The study includes a bibliography on the above aspects of housing. Gives insight into colonial policies toward housing for low-income groups in the Caribbean.

- XXIII-15 Chakrabartty, Syamal - Housing Conditions in Calcutta. Socio-Economic Survey Section, Department of Economics, University of Calcutta, Monograph No. 1, Bookland Private Ltd., Calcutta. 1958.

Analysis of a housing study in Calcutta, 1954-58, part of a socio-economic survey conducted by Calcutta University and the Department of Statistics. Covers the municipal boundary of Calcutta as it existed in 1951. Deals with all types of housing, discusses materials, overcrowding, city amenities, income and rent, linguistic groups and slums and slum clearance. Last section discusses methods for alleviation of these problems.

XXIII-16 Chandrasekhar, S. - "Population Trends and Housing Needs in India," Population Review, Vol. 1 (No. 1), pp. 12-18 (Jan., 1957).

XXIII-17 Chao, Kang - "Industrialization and Urban Housing in Communist China," Journal of Asian Studies, Vol. 25 (No. 3), pp. 381-396 (May 1966).

XXIII-18 Cordner, G. F. - "City Planning and Housing in the Philippines," American City, Vol. 58 (No. 3), pp. 94-5 (March 1953).

Due to destruction of Manila, "Quezon City" was built to become new capital of Philippines. Greatest progress has been made in public housing for families of low income, e.g. public housing project built of painted concrete block walls and corrugated asbestos cement roofing.

XXIII-19 Dark, J. W. - Low-Rent Asian Housing: Classical Basis and Modern Development. Ye Olde Printerie, Ltd. 1952. 122 pp.

This book is based on Dark's 20 years of observation in 4 continents as a town planner. Dark uses China as the basis for discussion. Human, sociological and financial aspects are discussed and analyzed. The Chinese family patterns, etc... are incorporated into Dark's proposals. Dark's conclusions are the family and trades unions are responsible for housing, the state is responsible for planning and land control. Technical labor and materials should be made available, prototypes of low-rent Asian housing are already in existence. Also stated are the needs for improved financing, professional housing management and decentralization.

- XXIII-20 de Leon, Arg. Teodoro G. - "Low Cost Housing in Mexico," Arts and Architecture, Vol. 48 (No. 2), (February 1967). #\*
- Brief article with illustrations (both photos and plans) of a project in Northern Mexico.
- XXIII-21 Dethier, Jean - Evolution of Concepts of the City and of Housing in Morocco. Documentation de la Direction de l'Urbanisme et de l'Habitat, Rabat. 1970.
- XXIII-22 Donaldson, G. W. - Foundation Problems Experienced in Africa. International Publications Service, New York. 1962. 44 pp.
- XXIII-23 Doxiadis Associates - Housing in Libya. prepared for the Ministry of Planning and Development by Doxiadis Associates, Athens. 1964. \*
- XXIII-24 Drabkin, Darin H. - Housing in Israel: Economic and Sociological Aspects. Gadish Books, Tel Aviv. 1957. 256 pp.

This book examines Israel's housing problem which is mainly one of colonization and social absorption. The topics discussed are building before the establishment of the state of Israel, housing for immigrants, housing in agricultural settlements, growth of urban centres, public housing projects, building programs, the physical construction of housing and the economics. Israel's housing is unique since masses of immigrants arrive in Israel each year from a variety of countries and different housing environments. Israel's plan is to develop the coast plains and the Negev and to prevent further concentration in the cities. The present housing policy is to provide each family with the living quarters it needs. This book presents a thorough analysis of the problem, both economic and sociological.

- XXIII-25 Dwyer, D. J. - "Urban Squatters: the Relevance of the Hong Kong Experience," Asian Survey, Vol. 10 (No. 7), pp. 607-13 (July 1970).

Discusses squatter problem in Hong Kong and the Resettlement Program undertaken by the government.

- XXIII-26 Economic Development Foundation, Inc. - Some Aspects of the Housing Situation in the Philippines. EDF, Manila. 1971.

This report is 28 tables and figures that define the housing situation in the Philippines. In 1970 the housing backlog was 817,000. The ratio of housing investment to GNP is a very inadequate 2.8%. The People's Homesite and Housing Corporation studied the urban housing situation and arrived at the following principles: more housing loans, higher income and lowering of construction cost through improved technology and production. Two government loan institutions are engaged in large scale housing programs. These institutions supply construction loans and mortgage funds at low interest rates.

- XXIII-27 Firth, J. R. - "Housing in Hong Kong," The Builder, Vol. 202, pp. 248-99 (February 8, 1962).

This article explains the methods employed in attempting to solve Hong Kong's post-war housing problem. After fires that destroyed more than 60,000 "squatter homes," the government built 7-storey resettlement block units. Each block accommodates 2,500 people and on the bottom floor are shops, clinics and other services. In the early 1960's blocks of flats with a better living standard were being built. The Hong Kong Housing Authority is the non-profit commercial enterprise that built the units. Although rent for these units is kept as low as possible, they must be sufficient to cover the expenditure. Six of these estates have been built and they house a total of 55,000 people.

- XXIII-28 Frankenhoff, Charles A. - "Low-Cost Housing in Colombia and Venezuela," Journal of Inter-American Economic Affairs, Vol. 17, pp. 79-86 (Spring 1964).

- XXIII-29 Fraser, J. M. - "Housing and Planning in Singapore," Town Planning Review, Vol. 23 (No. 1), pp. 5-25 (April 1952).

- XXIII-30 Frean, Merle P. - Low-cost Housing for South Africa. Council for Scientific and Industrial Research, Report No. 174, Pretoria, South Africa. November 1960. 37 pp.

An investigation into housing problems and policies with particular reference to Bantu (African) housing under Apartheid. Includes designs and illustrations.

- XXIII-31 Glaumann, Mauritz - Tanzania-Zanzibar Present Conditions and Future Plans. Housing, Building and Planning in Developing Countries. University of Lund, Department of Architecture. 11B Sweden. 1969.

A survey of social and economic conditions in Zanzibar. Included is a detailed description of physical conditions, layouts, building materials, and house types in the towns, with illustrations and photographs.

- XXIII-32 Gray, B. G.; and Deverell, N. M. - "Urban Housing in the Uganda Protectorate," Housing Center Review, Vol. 7 (No. 2), pp. 45-47 (1958).

- XXIII-33 Guru Swamy, Mahadevayya. Housing in India. Thesis, Cornell University, Ithaca, New York. 1960.

This thesis attempts to measure the housing problems in India. The report is divided into 3 major sections. The first section discusses housing in prehistoric India and mode of living; the second section deals with urbanization, housing conditions and construction; the third section deals with housing policies and financing. The report points out a need for a national housing policy and more government housing. Also discusses methods for reducing the cost of the physical unit. It is suggested that land disposal (building sites) be allotted to builders on a no-loss and no-profit basis. Also discussed are improved building techniques, labor reorganization, financing and industrialized housing.

- XXIII-34 Gutkind, E.A. - "How Other Peoples Dwell and Build," Architectural Design, Vol. 23. \*
- a) "Houses of the South Seas," Jan. 1953, pp. 2-4;
  - b) "The Houses of Japan," Feb. 1953, pp. 31-4;
  - c) "China," March 1953, pp. 59-62;
  - d) "Indigenous Houses - Africa," May 1953, pp. 121-4;
  - e) "Mohammedan Houses," June 1953, pp. 159-62;
  - f) "Houses of North American Indians," July 1953, pp. 193-7.

- XXIII-35 Harris, Walter D.; & Hosse, Hans A. - Housing in Honduras. Pan American Union, Washington, D.C. 1964. 295 pp. In English and Spanish.

This study of housing in Honduras attempts to examine all information on housing and its related areas. The topics examined are socio-economics of housing, housing policies, housing production and needs, building materials, financing, community services, land control and rural housing. Also included is a glossary of terms related to housing and various Honduran institutions and agencies. It is hoped that this book gives a better understanding of the role of housing as an incorporated part of national development. The book is very detailed in topic discussions and makes a variety of recommendations under each topic.

- XXIII-36 Harris, Walter D.; & Hosse, Hans A.; and Associates - Housing in Peru. Pan American Union, Washington, D.C. 1963. 713 pp. In English and Spanish.

Includes: physiographic, economic and social background; housing policies and institutions; housing inventory, production and needs, building materials; housing finance and market; community services; land control and planning; rural housing; bibliography. Comprehensive study with emphasis on low-cost housing and public institutions.

- XXIII-37 Horiarty, Denis - "Kenya Houses its Africans," Town and Country Planning, Vol. 23 (No. 136), pp. 369-74 (August 1955).

This article describes Kenya's four major towns and their housing and other problems created by rapid growth. In Mombasa housing is distributed in small areas and there is a feeling of cosmopolitanism. Nairobi is a rapidly growing city, with separate residential areas according to race, and a separate African town center. Nairobi has some special problems since it is at the end of the supply line and is the headquarters of the Mau-Mau. Nakuru is Kenya's farming capital and has separate African housing. The houses are semi-detached or in rows with pastel colored walls. Kisumu has well-designed, quality units. Since they are expensive, the Africans live outside the city.

- XXIII-38 Howard, Gordon E.; & Wagner, Bernard - Housing and Urban Development in Guatemala. Report to AID. December 21, 1964.
- XXIII-39 HUD (U.S.A.) - Housing and Urban Development in Japan. Office of International Affairs, HUD International Brief, Washington, D.C. 1971. 48 pp. \*
- XXIII-40 HUD (U.S.A.) - Housing in Ethiopia, by J. Robert Dodge; Burton O. Young; and L. Albert Wilson. Country Report Series, Office of International Housing, Washington, D.C. 1966. 67 pp.
- XXIII-41 HUD (Housing and Home Finance Agency, U.S.A.) - Housing in Guatemala. Office of International Housing, Country Report Series, Washington, D.C. 1965. 20 pp.

Gives basic information on housing in Ethiopia.

Gives statistics on housing and housing-related areas in Guatemala. In 1956, the Instituta Cooperativa Interamericano de la Vivienda (ICIV) was created and they have been responsible for most self-help housing projects. Money was at first allocated for 2,826 housing starts and

as of 1964 the program was completed. Participants worked 20 hours a week in groups of 30-50 to help with the building process. Building averaged 537 houses a year from 1957 to 1964. The private housing industry and American aid is also discussed, as well as a more detailed analysis of urban and rural housing needs.

- XXIII-42 HUD (Housing and Home Finance Agency, U.S.A.) - Housing in India. Office of International Housing, Country Report Series, Washington, D.C. 1965. 21 pp.

A statistical approach to what has been done in India in terms of fulfilling housing needs, and the needs which still exist in both urban and rural areas. Discusses the role of the five-year plans on housing, the policy decisions made about housing, and the programs for government financed housing. Low and middle income groups, slum clearance, village housing, and other plans are discussed. The state of the building industry and its capacities are also discussed.

- XXIII-43 HUD (U.S.A.) - Housing in the Ivory Coast. by Thomas R. Callaway. Country Report Series, Division of International Affairs, Washington, D.C. 1966. 62 pp.

- XXIII-44 HUD (U.S.A.) - Housing in Jordan. compiled by Bernard Wagner. Office of International Housing, Washington, D.C. 1965. 16 pp.

Gives background information, demographic data, existing housing conditions, information on planning, the building materials industry, labor related to housing in Jordan. Points out that there is very little government-financed housing and that no program of government assistance for lower or medium income groups exists. A housing agency was established in 1965.

- XXIII-45 HUD (Housing and Home Finance Agency, U.S.A.) - Housing in Liberia. Office of International Housing, Country Report Series, Washington, D.C. No date. 17 pp.

Background and basic data on the state of housing in Liberia, the need for urban and rural housing, with a brief section on housing finance and legislation and housing programs. A new housing law was promulgated in 1960 to facilitate construction in both urban and rural areas; since then many aided self-help programs have been started. Nineteen demonstration projects have been started in rural areas.

- XXIII-46 HUD (Housing and Home Finance Agency, U.S.A.) - Housing in Nigeria. Office of International Housing, Country Report Series, Washington, D.C. 1965. 15 pp.

Gives basic demographic data related to housing in Nigeria. Goes on to discuss the economic situation, the state of the building industry, and the available professional service and urban and rural housing. A short section discusses government housing programs, stress the financing of new projects. Written for the purpose of helping in the orientation of AID technicians.

- XXIII-47 HUD (U.S.A.) - Housing Market Analysis in Latin America; A Technique to Estimate Housing Requirements in Terms of the Ability of Families to Afford Shelter at Various Price Levels. prepared for A.I.D. by the HUD Division of Urban Affairs, Washington, D.C. 1965.

- XXIII-48 HUD (U.S.A.) - Israel. International Country Report, Office of International Affairs. 1971. 11 pp. \*

- XXIII-49 HUD (U.S.A.) - Panama. International Country Report, Office of International Affairs. 1971. 12 pp. \*

- XXIII-50 HUD (U.S.A.) - Peru. International Country Report, Office of International Affairs, Washington, D.C. 1971. 16 pp. \*
- XXIII-51 Hunter, Guy - Modernizing Peasant Societies: A Comparative Study in Asia & Africa. Institute Race Relations, Oxford University Press, London & New York. 1969. 324 pp.
- With bibliography. Covers social conditions and agriculture.
- XXIII-52 India, Office of the Chief Advisor of Factories - Low-cost Housing for Industrial Workers. New Delhi. 1954. 69 pp.
- XXIII-53 India (Republic) - National Building Organization. - Monograph on Housing Situation in India. Government of India Press, New Delhi, India. 1959. 124 pp.
- XXIII-54 India (Republic), Parliament, House of the People, Committee on Public Undertaking - Townships and Factory Buildings of Public Undertaking. Lok Sabha Secretariat, New Delhi. 1965.
- XXIII-55 International Union of Architects - Cuba: Architecture in Countries in the Process of Development. Seventh Congress of the I.U.A., La Habana, Cuba, September 1963. 118 pp.
- XXIII-56 Kenya, Information Office - The Housing of Africans in the Urban Areas of Kenya. Information Office, Nairobi. 1946.
- XXIII-57 Koenigsberger, Otto - "Low-Cost Housing in South and Southeast Asia," Planning Outlook, Vol. 2 (No. 3), pp. 17-23 (1952).
- XXIII-58 Koth, Marcia N.; Silva, Julio; & Dietz, Albert G.H. - Housing In Latin America. MIT Press, Cambridge, Mass. 1965. 259 pp.

Overview of housing conditions in Latin America.

XXIII-59 Mainer, W. F. - Hong Kong Urban Rent and Housing.  
Hong Kong University Press, Hong Kong. 1969.  
192 pp. \*

XXIII-60 Mamoria, C. B. - "Housing in India," Modern  
Review, Vol. 100 (No. 5), pp. 369-377 (November  
1956).

XXIII-61 Newcombe, Vernon Z. - Housing in the Federation  
of Malaya. Liverpool University Press. 20 pp.  
Reprint from Town Planning Review, Vol. 27 (No.1),  
(April 1956).

Background, housing problem, work of the  
housing trust, progress and future plans  
(1955), with pictures and diagrams.

XXIII-62 Pan American Union - Housing Institutions in  
Bogota. Colombia. 1961. \*

XXIII-63 Pan American Union, Inter-American Economic and  
Social Council - Problems of Housing of Social  
Interest. Report of the Ad Hoc Committee for the  
Study of Low-Cost Housing Problem, Washington,  
D.C. 1954. 232 pp.

Analyzes the origin and character of housing  
problems for low-income groups in Latin America.  
Historically, most of Latin American buildings  
were privately owned and tenants had very  
limited rights. Since then low-income houses  
have been undertaken by public agencies, coop-  
erative and mutual benefit unions, industrial  
and agricultural cooperatives and private  
enterprises. There has been an upward trend,  
both in quality and quantity, in the production  
of low-income housing. The report outlines  
specific actions for combatting the gap between  
construction and unit costs in design standards,  
and in general, for making more effective appli-  
cation of technical and human resources in the  
production of low-income houses.

- XXIII-64 Perry, Wes - "Mexicans attack Housing & Water Problems," Engineering News-Record, Vol. 171 (No. 15), pp. 82-4 (October 10, 1963).

Building of apartment buildings on a large scale in Mexico City to solve the housing problem in the city. Apartments to have rents between \$6.40 and \$51.00 per month. Government discards prefabricated components in favor of conventional methods because of low labor cost. Several ways through which economy is achieved in these buildings. Article is continued referring to water system and supply of the city. With photos.

- XXIII-65 Pozo, Gonzales A. - Basis of Mexican Economy and the Remedy for the Housing Problems. # \*

- XXIII-66 Prussin, Labelle - Architecture in Northern Ghana: A Study of Forms and Functions. University of California Press, Berkeley. 1969. 120 pp.

Culture, history, agricultural patterns, geography, settlement morphology related to building techniques and compound organization in 6 villages in 6 different regions of Northern Ghana.

- XXIII-67 Qureshi, Shujaat-Ullah - The Problem of Low-Cost Housing in Pakistan. Thesis, Cornell University, Ithaca, New York. 1960. 181 pp.

- XXIII-68 Rich, Stanley - "Building for too many people," Engineering News-Record, Vol. 165 (No. 25), pp. 102-4 (December 22, 1960).

Hong Kong Housing Authority operates to make housing available for the 4 million population of Hong Kong. Difficulties are encountered: scarce land, unsuitable topography, fast population increase, minimum space standards. Lack of land makes verticle building only practicable solution.

- XXIII-69 Rodriguez, H. - Housing for low-income families in Puerto Rico. Thesis. 1968. #

- XXIII-70 Saksena, Mohan Lal - Some Thoughts in the Housing Problem of India. Metropolitan Book Co., Ltd., Delhi. 1955. 56 pp.

Collection of articles includes a proposal for a Gandhi Memorial Housing Trust and an All India Housing Organization, a Central Housing Finance Corporation -- also comments on low-income group housing scheme of union government and other policies and programs.

- XXIII-71 Shah, K.T. (Editor) - National Housing. Report of Sub-Committee, National Planning Commission of India, Vora & Co., Bombay. 1948. 141 pp.

- XXIII-72 Silkin, Lord - "Israel's Housing and New Towns," Town and Country Planning, Vol. 25 (No. 4), p. 175 (April 1957).

Between 1948 and 1957, the population of Israel has increased by almost 1 million, mostly by mass immigration. For this population Israel has begun to build new towns. The housing units are mostly one-storey with living room, kitchen and two small bedrooms, but their size can be increased inexpensively by building or adding a storey. All the towns are formed with a neighborhood plan and numerous community services. In some cases, the towns were developed from small existing settlements.

- XXIII-73 Singh, S. - "Housing in India: A Report," AICC Economic Review, Vol. 7 (No.'s 19-20), pp. 99-102 (February 1956). (New Delhi). \*

- XXIII-74 Solow, Anatole A. - Housing in Guatemala: A Study of the Problem with Recommendations for the Program and Organization of Housing Department. Pan American Union, Washington, D.C. 1950. 110 pp.

This is an analysis of the housing situation in Guatemala, both urban and rural areas. Eighty-five percent of the population lives in rural areas, but still the urban centers are overcrowded. There is a large gap between the cost of a decent house and the amount of money a low-income family can pay. Housing need also has a great

effect on the economic and technological resources of Guatemala. A policy needs to be established, incorporating the aforementioned problems. Solow feels that there is a need for a 25 year low-cost housing program. Also discussed are the underlying reasons for the housing problem, such as population increases and little building technology. The final section is a detailed analysis of available and potential resources, both physical and economic.

XXIII-75 Strassmann, W.P. - "Innovations and Employment in Building: The Experience of Peru," Oxford Economic Papers, Vol. 22 (No. 2), pp. 243-260 (July 1970).

XXIII-76 Subrahmanyam, K. - "Some Aspects of Housing in India," Royal Sanitation Institute Journal, Vol. 70 (No. 4), pp. 467-69 (1950).

The vast and complex housing problem in India is reviewed, and some special difficulties are indicated which hinder the adoption of methods that have been successful elsewhere. Among those difficulties are the high density of population, the fact that 85% of the people live in villages, the extreme poverty of these people, and the severe and variable climatic conditions in certain areas. Owner-built houses made of mud with thatched roof are being constructed in the villages, but they cannot be used to solve the problems arising from the growth of old and creation of new towns. The minimum standard of accommodations in a family dwelling unit is now fixed as at least two living rooms, a kitchen, and a sanitary privy or closet. This acceptance of two-roomed accommodation is justifiable in view of the very hot and prolonged summer weather when most people sleep outdoors. The merits of brick or stone houses, particularly in relation to heat transmission, are summarized whilst the possibilities of stabilized earth, foam, concrete or hollow concrete blocks and panels for low-cost house construction are indicated. Walls of bamboo plastered with mud or cement or of bamboo matting finished with gunite cement have been successfully used, whilst certain prefabricated houses are constructed with aluminum door and window frames, and foam concrete wall panels. Some data on construction costs are given.

- XXIII-77 Taiwan Provincial Government - Housing Project in Taiwan. Taiwan. 1961.

Since the end of World War II, the Taiwan Province has had a very serious housing problem. It is felt that a mix of public and private programs is needed to alleviate the housing shortage. Four major sources may be used for housing program funding: 1) rise of land values; 2) & 3) lease and sale of new buildings; 4) U.S. A.I.D. loan. Sites should be on government land or improved land (i.e., excavated mountains) and building materials should be standardized. Housing construction should be widespread in proportion to population density. Included in this pamphlet are exact housing statistics as well as photographs of the new housing.

- XXIII-78 Tangri, Shanti S. - "Urban Growth, Housing & Economic Development: The Case of India," Asian Survey, Vol. 8 (No. 7), pp. 519-38 (July 1968).

This paper examines some interrelations of urban growth, housing and economic development in India. It presents some estimates of the existing stock of housing, per capita living space, housing costs, likely growth of urban population, housing needs and investment requirements to meet these needs to the year 1981 in India under alternative sets of assumptions and it evaluates current thinking on the subject, suggesting alternative theoretic perspectives and planning policies.

- XXIII-79 Thijssse, J. P. - "Housing Problems in the South Pacific," Colonial Review, p. 180 (June 1952). \*

Problem of efficient housing in the Islands-- must consider climate, social, economic and hygienic factors, and all of these are quite varied among the different islands. What is suitable on one island or for one group would not be suitable for all. Necessary compromise between social wants and what is economically possible. Low-cost housing is essential and should thus try to utilize building materials which are available in the islands.

- XXIII-80 Umezawa, Tadashi; & Honjo, Masahiko - "Company Housing in Japan," International Labor Review, Vol. 99 (No. 6), pp. 579-87 (June 1969).

Before the Second World War the provision of company housing in Japan was virtually confined to the mining and textiles industries. During and after the war, and especially since 1955, the practice has become much more common and has extended to other sectors. This has been due to the general housing shortage, the growth of the shift system (making it necessary for people to live near their work), the creation of large industrial complexes outside existing urban areas and the need to attract labor in an increasingly tight employment market. Today, however, with workers anxious to preserve their independence and employers reluctant to tie up large amounts of capital, companies are placing growing emphasis on the encouragement of home ownership, hoping thereby to make possible a quicker turnover of their scarce housing facilities to the benefit, in particular, of their younger employees.

- XXIII-81 U.N. Economic Commission for Africa, Housing, Building and Planning Section - Housing in Africa. Addis Ababa ? 1965. 221 pp. [E/CN.I4/HOU/7/REV].
- XXIII-82 U.N. Technical Assistance Housing Mission to Ghana - Housing in Ghana. New York. 1957. 220 pp. [ST/TAA/K/Ghana/I].
- XXIII-83 U.N. Economic Commission for Europe - Housing in the Less Industrialized Countries of Europe. Geneva. 1956. \*
- XXIII-84 U.N. Department of Social Affairs, Tropical Housing Mission, Mission of Experts - Low-Cost Housing in South and South-East Asia. N.Y. 1951. 188 pp. [ST/SOA/3]. \*

This report examines the living conditions of lower-income families in South and South-East Asia. Special reference was made to low-cost rural housing; resettlement problems and

promotion of the self-help principle. The report gathers experience which might be useful to other countries, formulates recommendations to further international cooperation and advises the governments of the countries examined. The countries discussed in this report are India, Pakistan, Malaya, Thailand, Indonesia and the Philippines. The prevailing conditions in Asia create major housing problems and in 1950 100,000,000 Asian families lived in crowded, substandard units. Recommendations are that housing policies and programs must achieve minimum standards.

- XXIII-85 U.N. - Report for the Government of Singapore. by Abrams, Charles; Kobe, Susumu; & Koenigsberger, Otto; prepared by an Expert Mission appointed under the U.N. Technical Assistance Programme, Singapore. 1963. mimeo. \*
- XXIII-86 U.N. Economic and Social Council - Report of the Regional Working Group on Improvement in Rural Housing and Community Facilities. Addis Ababa. October 1970. [E/CN.14/HOU/80].

The purpose of this meeting was to discuss the methods employed by the working group to improve rural housing. The group examined administration, design techniques, construction, sanitation, materials, resources and financing aspects of housing improvement in Africa. Part I of the report deals with organization and attendance, Part II with the proceedings and Part III a summary of the recommendations. The topics discussed were rural housing in economic development and social development planning, financial aspects, indigenous materials, resettlement housing, and health and community facilities. Some of the recommendations were: integrated approach to problem, use of self-reliance schemes, attention to rural youth problems, government should establish loan funds, building construction should be taught in the schools, and people should be educated to aims of the plans.

- XXIII-87 U.N. - Report on Housing in the Gold Coast, by Charles Abrams; Bodiansky; & Otto Koenigsberger. New York. 1956. \*
- XXIII-88 U.N. - Report on Housing in Pakistan, by Charles Abrams; & Otto Koenigsberger. New York. 1957. \*
- XXIII-89 U.N. - Report on Housing in the Philippine Islands, by Abrams, Charles; & Koenigsberger, Otto. New York. 1959. \*
- XXIII-90 U.N. Economic Commission for Africa, Meeting of the Executive Committee - Report on the Work of the Industry and Housing Division. May, 1969. 9 pp. [E/CN.14/ECO/5]. #
- XXIII-91 U.N. Technical Assistance Administration - Seminar on Housing and Community Improvement in Asia and the Far East. New Delhi, India 21 January - 17 February, 1954. 74 pp.
- XXIII-92 U.S. Agency for International Development, Housing Survey Team - A Survey of Housing in Ethiopia, with special emphasis on the capital city of Addis Ababa. Addis Ababa. 1965. 104 pp.
- A three part analysis of housing in Ethiopia. Part I gives conclusions and recommendations, Part II information on economic and demographic data, Part III information on the current housing situation and urban development. Recommendations were made for more financing availability for middle income groups, and the need for Addis Ababa to establish a Housing Authority. Expansion of the existing Kolfe aided self-help project was also recommended. The need for a national housing Agency was established and its functions and authority were developed.
- XXIII-93 Utría, Rubén D. - "The Housing Problem in Latin America in Relation to Structural Development Factors," United Nations, Economic Bulletin for Latin America, Vol. 11 (No. 2), pp. 81-110 (1967).

XXIII-94 Vagale, L. R. - Housing in Nigeria: Problems & Prospects. Western State of Nigeria, Ministry of Lands & Housing, Town Planning Division, Ibadan. 1971. 22 pp.

XXIII-95 Van Huyck, Alfred P. - Housing for Lowest Income People, Random Ideas from India and Tanzania. Asia Society, New York. 1968. 25 pp. \*

Suggests the idea of a housing threshold-- a point along the income distribution curve below which it is not possible to provide housing...on a massive scale commensurate with the needs at any reasonable set of "minimum standards." May fluctuate between urban and rural, but the point exists. Below this point environmental improvement programs, savings institutions, cooperatives, and self-help housing are most economical. Above it, public housing as we know it is more acceptable. Goes on to discuss the problem of India and what alternatives are available for serving needs of those below the "housing threshold." For Tanzania, he discusses the urban Ujamaa Village Concept--grouping people into small villages where minimum levels of services can be provided. Fits into objective of keeping capital investment at a minimum while "building in the capacity for self-renewal as economic conditions improve."

XXIII-96 Vaughan, Jack Hood - "Housing and Urban Development in Latin America," Department of State Bulletin, Washington, D.C., Vol. 53 (No. 1359), pp. 66-70 (1965).

XXIII-97 Violich, Francis; and Solow, Anatole (eds.) - Low-Cost Housing in Latin America. Pan American Union, Department of Economic and Social Affairs, Division of Labor and Social Information, Washington, D.C. 1949. 93 pp.

A broad survey of the needs of Latin American countries in regard to housing. First analyzes housing need and then traces early efforts on the part of official and semi-public agencies to improve conditions. The administrative, legal and financial methods under which housing programs operate at present are described and an account given of accomplishments to date in each of the 20 countries covered.

- XXIII-98 Volken, H. - Extension Service, Indian Social Institute - Seminar on Low-Cost Housing. Indian Social Institute, Bombay. 1961. 125 pp.
- XXIII-99 White, L. W. T.; & Thompson, J.M. - Builder, Vol. 188 (March 11, 1955). \*
- Issue devoted to building in Africa. Articles on "The Architect in Africa" (White); "The Construction Industry in South Africa" (Thompson); "Housing for the Bantu" (gives design of house for natives--standard plan for low-cost 4 room house, and gives criteria for different levels of housing with a brief review of the housing situation in several countries).
- XXIII-100 Zorbaugh, Harvey - Gold Coast and the Slum. University of Chicago Press, Chicago. 1929. \*
- XXIII-101 Anonymous - Housing in China (A Collection). U.S. Government Translation, Research and Microfilm Publications, New York. 1962.
- Six articles from the Chinese Language Publication Chien-Chu Hsueh Pao (Acta Architecturae Sinica), No. 2, Peiping, 28 February, 1962. Articles are: A Study of Some Problems Relative to Planning and Designing Houses; Show Initiative and Strive for High Level in Housing Design; Some Opinions on the Problems of Minimum Area Housing; Housing Structure Standard and Minimum Area Housing Design; Architectural Exhibition at the 3rd Congress of the Society of Chinese Architects; Appended photos and floor plan sketches. Also includes articles from same journal:  
 No. 3 March 1962  
 No. 1 January 1962  
 No. 8 August 1962  
 No. 10 October 1962  
 No. 11 November 1962
- XXIII-102 Anonymous - Housing in Latin America. The Chase Manhattan Bank, New York. 1962. np.

The Chase Manhattan Bank sponsored a Symposium on Latin American Housing as its contribution towards identifying housing problems. This pamphlet is a summary of the Symposium proceedings. The great housing shortage in Latin America is mainly due to rapid population increases. The major housing problems are a need for better local planning, a need for more self-help housing, little local production of building materials and lack of local savings in housing investment. The role of national governments was discussed and it was felt that there should be mortgage insurance programs. It is felt that U.S. businesses could help most by establishing building material plants in Latin American countries.

XXIII-103 Anonymous - "Neighborhood Public Housing Units in Rio," Architectural Record, Vol. 124, pp. 166-70 (July 1958). \*

XXIII-104 Anonymous - Self-Help & Mutual Aid Housing. Department of Social Welfare, Office for Housing Welfare, Djakarta. 1961. 64 pp.

This book gives an idea of the awareness of housing need in the village community. Discusses how the problem is being solved through the "Village Social Committee" on the basis of self-help and mutual aid which is part of the Indonesian Identity. In the context of the "Planned National Overall Development" and its realization in the field of housing, it is necessary to stimulate and to maintain the spirit and vigour of auto-activity and mutual-aid still existing in the village community. Hence, the Department of Social Welfare, precisely, the Office for Housing Welfare, feels itself responsible to give guidance, information and materials assistance in order to provide technical know-how to the Village Social Committee as to how to build healthy houses on the basis of self-help and mutual-aid; in this way the aspirations of the Government will be materialized, i.e. that every family should have its own house which, though simple in construction, can meet the motto: "a healthy house, a healthy nation."

- XXIII-105 Anonymous - Seven Years of Housing in Japan 1945-1952. Housing Bureau, Tokyo. 1953. 32 pp. \*
- XXIII-106 Anonymous - "Urban Land Policies in Africa," Colonial Review, Vol. 8, pp. 229-30 (December 1954) (London).

A discussion of the importance of planning housing sites in relation to land use at initial stages of housing programs. The acquisition of land for social housing is often obscured because social housing may not be defined as a public good. Further, land speculation may restrict improved housing.

For further references on this topic, see items:

IIIA-2, IIIA-4, IIIA-6, IIIA-19, IIIA-20, IIIB-2, IIIB-3  
 IV-1, IV-2, IV-4, IV-9, IV-13, IV-21, IV-31  
 VA-5, VB-3, VB-10, VC-10, VE-19, VE-21  
 VIB2-1, VIB3-6, VIB3-9  
 VII-1, VII-2, VII-3, VII-6, VII-9, VII-12, VII-14  
 VIII-2, VIII-6  
 IX-1, IX-4, IX-7, IX-10, IX-11, IX-13  
 X-1, X-6, X-10, X-11, X-12, X-14, X-17, X-18, X-19, X-21  
 XI-2, XI-4, XI-6, XI-8, XI-11, XI-19, XI-22  
 XII-4  
 XIII A-9, XIII B-1, XIII B-5, XIII B-6, XIII B-9, XIII B-10, XIII B-12,  
 XIII B-16, XIII B-18, XIII B-20, XIII B-25, XIII B-27, XIII B-29,  
 XIII C-5, XIII C-14  
 XIV-9, XIV-28  
 XV A-3, XV A-6, XV A-8, XV B-2, XV B-9, XV C-1, XV D-1, XV D-5,  
 XV D-9, XV D-15, XV D-16, XV D-17, XV D-18, XV D-19  
 XVII-1, XVII-5, XVII-6  
 XVIII-3, XVIII-5, XVIII-10  
 XIX A-15  
 XX-5, XX-7, XX-13, XX-14, XX-18, XX-22  
 XXI-5  
 XXII-1, XXII-2  
 XXV-1, XXV-3, XXV-7, XXV-9, XXV-21, XXV-26, XXV-27, XXV-28,  
 XXV-29.

## XXIV. CASE STUDIES

- XXIV-1 Banco Obrero de Caracas - Programa Experimental de Vivienda, San Blas, Valencia. Caracas. 1964. (in Spanish).

- XXIV-2 Baroda Citizens Council - Housing: A Report of Housing in Baroda. Baroda, India. 1966. 29 pp.

This report was prepared to answer the many questions asked of community workers of the Baroda Community Development Service by people who wanted information on housing: how to get land; the cost of building a house; what loans are available for different housing schemes; who is eligible to apply for slum clearance quarters; how to apply, etc....

- XXIV-3 Cvak, L.; Volbeda, A.; & Sterner, G. - "Low-Cost Housing in Three Countries," Build International, Vol. 3 (No.'s 1-2), pp. 5-12 (1970).

The first article comments on the report, "A Decent Home," which is an examination of the entire complicated process of building American houses in order to find the many special ways in which costs can be reduced, production increased and decent housing built for citizens with low incomes. The second article comments on a brochure about the Kolfe low-cost housing project which has been recently issued by the municipality of Addis Ababa. The third article considers a thesis which provides an account of native housing in South Africa in 1953 and draws conclusions which are still valid today.

- XXIV-4 Fawzi, Saad Ed Din - The Khartoum Deims: Some Housing Problems. Government Printer, Khartoum. 1953.

- XXIV-5 Fromm, Erich; & Maccoby, Michael - Social Character in a Mexican Village. Prentice-Hall, Englewood Cliffs, New Jersey. 1970.

A complete analysis of a Mexican village (un-identified) from its demographic to physical characteristics relating them to the social structure.

XXIV-6 Gonzalez de Leon, A. - "La Habitacion," Rural Economics, Vol. 24 (No. 4), pp. 116-122 (April 1961). (in Spanish).

XXIV-7 Hart, Donn Vorhis - The Cebuan Filipino Dwelling in Catiguan: Its Construction and Cultural Aspects. Yale University Southeast Asia Studies, Cultural Report Series No. 7, New Haven. 1959. 148 pp.

XXIV-8 HUD (USA) - Report on the Transitional Housing Experiment: Rosebud Indian Reservation Low-Income Housing Demonstration Program. Washington, D.C. 1969.

Rosebud Transitional Housing Program was begun in 1966. Designed to provide housing for very poor families, the houses cost \$4,304 and include two bedrooms, kitchen, dining area, and bathroom. The families pay a \$10 downpayment and \$5 per month for five years. The local residents (South Dakota Indians) helped in building the houses, and it has been found that the project has stimulated community activities, has improved the health standards of the families and the education of the children. 375 homes were built in 21 communities over a 20 month period. Analysis of the program indicates that it merits repetition elsewhere, where a solution to the problem of low-cost housing for low-income Indian families is needed.

XXIV-9 Hughes, A.V. - "Low-Cost Housing and Home Ownership in Honiara," South Pacific Bulletin, Vol. 19, pp. 19-26 (First Quarter 1969).

This article discusses housing on Honiara (the capital of the British Solomon Islands) that can be financed by the people of the island. In 1967 there was a great housing shortage with overcrowding, squatters, and family breaks. It was determined that building costs needed to be cut, the government must build housing, private low-cost buildings should be encouraged and that a loan financing scheme should be established. In 1969, Honiara still had a housing shortage, but major strides had been taken to alleviate it.

- XXIV-10 Kalitsi, E.A.K. - Volta Resettlement Symposium Papers. 1965. \* #
- XXIV-11 Maunier, René - La Construction de la Maison Collective en Kabylie: Etude sur la Coopération Economique chez les Berberes du Djurjura. Institute d'Ethnologie, Paris. 1926. (in French).
- Discussion of "cooperation" and its meaning to the people involved. Also has detailed description of housing, illustrated with diagrams. Description of step-by-step construction. Photos.
- XXIV-12 Pan American Union - Proyecto Sogamoso -- Paz de Rio: Ensayo de Una Methodologia. Inter-American Housing and Planning Center, Serie: Trabajos de Clase No. 1, Bogota. 1956. 241 pp.
- Maps, charts and photos. In Spanish.
- XXIV-13 Peattie, Lisa - "Squatter Housing in Caracas," in B.J. Frieden and W. Nasa, eds. - Shaping an Urban Future: Essays in Memory of Catherine Bauer Wurster. MIT Press, Cambridge, Mass. 1969.
- XXIV-14 Rosser, Colin - "Housing for the Lowest Income Groups: The Calcutta Experience," Ekistics, Vol. 31 (No. 183), pp. 126-131 (1971).
- XXIV-15 Safa, Helen Icken - "From Shanty Town to Public Housing: A Comparison of Family Structure in Two Urban Neighborhoods in Puerto Rico," Caribbean Studies, Vol. 4 (No. 1), pp. 3-12 (1964).
- XXIV-16 Spence, Betty - "Housing: Experiment in Johannesburg by Mining Companies," Architectural Review, pp. 329-331 (November 1956). #
- XXIV-17 Stirling, John - "Hong Kong Housing Estate Cited Most Spectacular of Asian-Aided Programs," Journal of Housing, Vol. 15, pp. 160-61 (1958). \*

- XXIV-18 Taleyarkhan, H. J. H. - "Housing in Maharashtra," Builder, Vol. 12 (No. 9), pp. 81-7 (September 1964).
- XXIV-19 U.N. - Metropolitan Lagos. Report submitted to the Ministry of Lagos Affairs. by Otto Koenigsberger; Charles Abrams; Susumu Kobe; Moshe Shapiro; & Michael Wheeler. New York. 1962. \*
- XXIV-20 U.N. - Report on the Development of Ciudad Guayana in Venezuela. by Charles Abrams. N.Y. 1963. mimeo. \*
- XXIV-21 Wells, Alfred - "Low-Cost Housing in Casablanca," Ekistics, Vol. 29 (No. 171), pp. 144-48 (1970).
- XXIV-22 Woods, Shadrach - Candilis-Josic-Woods: Building for People. Praeger, New York. 1968. 226 pp.  
Description of projects in North Africa.
- XXIV-23 Anonymous - "Carlton Low-cost Housing," The Architect and Building News, Vol. 214, pp. 225-61 (August 1958).  
Carlton Contractors built low-cost housing units in Epsom, England. The units were one, two, and three bedroom, and were planned with a staff of architects. The physical building is discussed. Included are floor plans and photographs.
- XXIV-24 Anonymous - "House for Africans in Southern Rhodesia," Economist, Vol. 176, pp. 554-55 (August 1955).  
At present African workers in Southern Rhodesia are housed by their employers for a set price be they married or single. Since single men's lodgings are less expensive, single workers are encouraged. A new plan is being initiated to better house the worker and teach him how to handle money. The way the program works is a married man is given a two room apartment

and one room he rents to two lodgers until he can afford the whole unit. He may then add on to the unit in any way he can afford and in 20 years the unit will be his.

- XXIV-25 Anonymous - "Khashm el Girba New Town," The Engineer, Vol. 214 (No. 5567), p. 598 (October 5, 1962).

Short report on a town to be built instead of one that will be under the water from the Assuan High Dam reservoir. Brief description of houses to be built.

- XXIV-26 Anonymous - "Low-Cost Housing at Chessington," The Builder, Vol. 195 (No. 6019), p. 225 (August 8, 1958).

Pictures, diagrams and costs for England.

- XXIV-27 Anonymous - "Low-Cost Residential Complex is Built in Porto Alegre," IFBWW Housing Bulletin, (No. 4), pp. 116-17 (April 1968).

About a residential complex in Porto Alegre, Brazil of which 4/5ths is finished. Finished dwellings are of single unit type. Multi-family dwellings considered in future stages. Main objectives of the residential complex were: "eradication of sub-normal dwellings...established in the site, making possible the engineering works for construction of a bridge over the Guaiba river"; "furnishing the settled population in the area with the minimum housing conditions" and; "location of families next to their working sites."

For further references on this topic, see items:

IIIA-11, IIIB-4, IIIB-9, IV-32, VA-8, VIII-7, VIII-10, XIV-4, XIV-25, XVIA-10, XVIC-2, XX-2, XX-24, XXV-34.

## XXV. POLICIES &amp; PROGRAMS

- XXV-1 Araneta, Salvador - Bold Low and Medium Cost Housing Policy and Program. Report No. 2 of the Institute of Economic Studies and Social Action, Araneta University, Manila. March 1961. 63 pp.

The conclusions derived from a seminar held at the Philippine-Columbian Association on the subject of a low and medium cost housing program for the Philippines were the basis of this report. Delegates from three universities, realty companies, cement, lumber and other industrial firms, were present. It was determined that the main housing problems are lack of financing and liberal credit facilities, increasing costs of land and money, high housing costs for low and middle income families, more housing demand the higher the cost, and the great economic liability of a housing shortage. Twenty recommendations for dealing with the problem were put forth. Among them were an improved financing program, inflation controls, changes in the tax structure, and creation of a housing fund.

- XXV-2 Atkinson, G. A. - "Housing and Building in the Commonwealth," Journal of Royal Society of Arts, Vol. 105 (No. 5004), pp. 535-54 (24 May, 1957).

This article examines the early years of building, particularly in Australia and India, the influence of Britain on overseas building and the present needs of overseas building. During the early 1950's much happened in the field of overseas housing; the governments began establishing housing policies. A discussion of various territories and their housing policies is presented. Atkinson feels that these territories in the future will place more emphasis on town planning, low income housing, building and engineering.

- XXV-3 Banco Obrero - Housing Policy in Venezuela.  
Caracas. 1967.

Venezuela recognizes its housing problem and through studies and a housing plan, will attempt to alleviate it. Venezuela has a few problems that hinder its progress in housing, such as a very high population growth rate, very poor income distribution, and major growth in the cities. Venezuela feels housing is not just shelter but also a variety of community and public services, and they are incorporating this concept into their program. Besides the government building housing, programs to encourage private building have been created. Also a national loan system has been established.

- XXV-4 Banco Obrero de Caracas - Plan Nacional de Vivienda, 1965-1968. Caracas. 1967. 98 pp. plus 26 pp. of plans of dwelling units. (in Spanish).

- XXV-5 Benninger, Christopher C. - "Design Criteria for Developing Contexts: Housing for Baroda, India," Ekistics, Vol. 33 (No. 196), pp. 162-165 (March 1972).

Guidelines for a successful project.

- XXV-6 Boyd, Osborn T. - "Review of International Co-operation Administration's World-Wide Housing Programs," Land Economics, Vol. 35 (No. 1), pp. 77-80 (February 1959).

The two major reasons for the world-wide housing problem are population growth and urban immigration. This article discusses the International Cooperation Administration's housing activities. The primary functions of the ICA are research and demonstration projects, aided self-help housing, city and regional planning, building industry training, legislation and organization aid, and stimulation of savings and credits. Numerous examples of the ICA's aid in these areas are elaborated upon.

- XXV-7 Coan, Carl A. S. - "Report to the Agency for International Development of Review of U.S. Housing Programs in Chile and Peru," May 28, 1962. Mimeo. \*

- XXV-8 Donnison, David Vernon - The Government of Housing. Penguin Books, Harmondsworth. 1967. 397 pp.

Deals with England.

- XXV-9 Evans, Francis - "Home Truths, Critique of Hong Kong Policies on Squatter Control, Resettlement and Low-cost Housing Programmes," Far Eastern Economic Review, Vol. 46, pp. 151-4 (October 1964).

Evans reports that the Hong Kong government failed to achieve its 1959-1963 projected target in housing construction. He questions the basis for the government's optimism in achieving the 1964-74 plan of building some 2,190,000 units of resettlement and low-cost housing, estimated at \$2,044 million. The failure or author's pessimism lies in the government's half-hearted commitment to solving the housing problems in Hong Kong, ill-defined squatter policies. Instead of tackling the problem of inadequate housing as a whole, the government offers palliatives - it legalizes squatting without improving the situation. It is essential that the government attempt to control squatters instead of encouraging an increase in squatters. The individual squatter might benefit, but the social cost and financial cost created by squatters bears on the community as a whole.

- XXV-10 Frankenhoff, Charles (ed.) - Housing Policy for a Developing Latin Economy. Papers and Commentaries of Housing Policy Seminar Sponsored by the Social Science Research Center and the Graduate Planning Program of the University of Puerto Rico. April 1-3, 1966.

Discusses housing policy as part of urbanization policy and total development policies. Emphasizes low-cost housing. Articles (papers) included are: The Economic Role of Housing in a Developing Economy; A New View of the Housing Deficit; Financing Housing and Urban Development in Developing Countries; the Housing Development Program for Ciudad Guayana. Each paper has several commentaries following the text.

- XXV-11 Frieden, Bernard - "The Search for Housing Policy in Mexico City," Town Planning Review, Vol. 36 (No. 2), pp. 75-94 (1965).
- XXV-12 Grebler, Leo - "Criteria for Appraising Government Housing Programs," American Economic Review, Vol. 50 (No. 2), (May 1960). # \*
- XXV-13 Hong Kong (Government) - Report of the 1963 Working Party on Government Policies and Practices with Regard to Squatters, Resettlement and Government Low-cost Housing. Hong Kong. 1964.

This report examines present policies concerning government housing and squatters and makes recommendations concerning policy changes. The report makes very specific recommendations to alleviate the housing problems. Some recommendations: There should be permitted a specific area that squatters can lawfully occupy; new squatting should be discouraged; relocated tenants should have the option of government housing; government building at the rate of 130,000 units a year; and transit centers should be established for persons with a high priority for resettlement.

- XXV-14 Hong Kong (Government) - Review of Policies for Squatter Control: Resettlement and Government Low-Cost Housing, 1964. Hong Kong. 1964.

Includes introduction, definitions and recommendations from the Working Party Report.

- XXV-15 Hong Kong Information Service Department - Building Homes for Hong Kong Millions: The Story of Resettlement. No Date. (about 1964).

Problem with large population and over-crowding: squatting resulted with dangers of weather and fire. Large fire in 1953 prompted government to undertake resettlement. Basically a short narrative description of the why and how of Hong Kong low-cost housing.

- XXV-16 HUD (Housing and Home Finance Agency, U.S.A.) - Catalog of Projects of International Cooperation in Housing and Town and Country Planning. Office of International Housing, Washington, D.C. 1957. 54 pp.
- Gives information (brief description and participants and directors) on programs of technical cooperation relating to housing and planning for countries throughout the world.
- XXV-17 India (Republic), Ministry of Works, Housing, and Supply - Subsidized Housing Scheme for Industrial Workers. Grant of Loans and Subsidies toward Housing Schemes Undertaken by State Government Employees and Workers' Cooperatives, New Delhi. 1955. 59pp.
- Legal standards and specifications set for the above by Indian Ministry of Works, Housing, and Supply.
- XXV-18 International Federation for Housing and Planning - Housing Policy in Regions of Rapid Population Growth. International Federation for Housing and Planning, 27th Congress, Jerusalem. The Hague, 1964.
- XXV-19 International Labor Organization - National Housing Programmes and Full Employment. Report No. 3, Fifth Session, International Labor Office, Building, Civil Engineering and Public Works Committee, Geneva. 1956. 124 pp.
- XXV-20 International Labor Organization - Practical Measures for the Regularization of Employment in the Construction Industry. Report No. III, Seventh Session of the Building, Civil Engineering and Public Works Committee, Geneva. 1967.
- XXV-21 Isaacs, Esther - "Israel has to build homes quickly and cheaply," Municipal Journal, pp. 3694-99 (18 November 1960).

- XXV-22 Johnson, Byron L. - "Discussion," Proceedings of the Social Statistics Section, American Statistical Association, Washington, D.C. 1966. pp. 170-71.

Discussion of the preceding papers on preparation of housing programs in developing countries.

- XXV-23 Merrill, Robert North - An Evaluation of Chile's Housing Program: Problems and Prospects. Thesis, Cornell University, Ithaca, New York. 1968.

Part I examines Chile's ten year housing program, while Part II provides new methods for coping with housing problems. The major housing problem in Chile is upgrading the quality of the housing. Housing costs, programming, funding and national economy problems are analyzed. It seems that construction costs are the primary barrier to Chile obtaining its housing goals. Specific methods to alleviate this problem are suggested.

- XXV-24 Merrill, Robert North - Toward A Structural Housing Policy: An Analysis of Chile's Low Income Housing Program. Thesis, Latin American Studies Program, Cornell University, Ithaca, N.Y. 1971.

Purpose of study to explore major causes for failure to meet housing goal.

1. high rate of mortgage arrears and defaults in public sector leading to decapitalization of public housing institutions and less capacity to construct new units
2. rising trend of relative construction costs associated with increased volume
3. overestimation of ability to pay of large part of population with result that lowest income groups benefited least from official programs
4. lack of attention to future metropolitan development.

Author recommends following to obtain more housing with less investment resources, capable of meeting changing needs of low income groups:

1. redefine housing in settlement rather than building terms -- include underutilized resources
2. to capture investment resources of low-income groups, stress land improvement schemes and urban infrastructure so groups can begin to resolve their own housing problems
3. as administrative vehicles for the above, use MINVU (Ministry of Housing and Urbanism). Need a major change in attitudes to implement the above policy changes: from a sectoral view to a structural view.

- XXV-25 Metcalf, Richard - "Discussion," Proceedings of the Social Statistics Section, American Statistical Association, Washington, D.C. 1966. pp. 172-74.

Discussion of the preceding papers on the preparation of housing programs in developing countries. Contends that the relatively limited investment in housing in the developing countries is attributed to two misconceptions, namely that housing investment has a social function with no or little economic purpose and that housing finance is the task of the government because the people cannot accumulate savings. A.I.D. experience in assisting savings and loan associations shows the contrary. Not only is housing an integral part of economic development, but also that the people have the capacity to save. Housing is also a requirement for the continuance of economic development in developed as well as in developing countries.

- XXV-26 Puerto Rico Planning Board - A Proposal for a Low-Cost Housing Program. Puerto Rico. 1958. \*

- XXV-27 Robinson, Harold - "Israel's Expansible Houses Assure Basic Shelter Now, Amenities Later," Journal of Housing, Vol. 13 (No. 5), pp. 172-4 (May 1956).

Describes how the Israeli government is attempting to stretch its homebuilding materials, time and money to overcome severe housing shortages. An "expansible house" design is a device being currently used. Six house types have been developed and are described, including costs, sites, diagrams.

- XXV-28 Singapore Housing & Development Board - First Decade in Public Housing 1960-1969. Times Printers, Singapore. 1970. 139 pp.

This report outlines the accomplishments of Singapore's Housing and Development Board from 1960-1970. During these ten years, 100,000 housing units for 30% of Singapore's population were built. Besides this accomplishment the Board has developed a home ownership program, urban renewal projects and new towns. This report, through graphics, photographs and descriptions, portrays Singapore's excellent housing record. The article is not technical but does discuss project costs, labor and planning. At present, with help from the U.N., Singapore is drawing up a comprehensive plan for the 1970's.

- XXV-29 Speer, George A. - The Moroccan Urban Housing Program. Operations Mission to Morocco. 1960. \*
- XXV-30 Thorrington-Smith, E. - "An approach to native housing in South Africa: An example of an African new town at Umcazi, Durban," Royal Town Planning Institute Journal, Vol. 37 (No. 9), pp. 205-213 (July-August 1951).
- XXV-31 U.N. Social Commission - Long-Range Programme of Concerted International Act in the Field of Low-Cost Housing and Related Community Facilities. N.Y. 1959. 4 pp. [E/CN.5/339]. \*
- XXV-32 U.N. Economic Commission for Europe - Major Long Term Problems of Government Housing and Related Policies. N.Y. 1966. [ST/ECE/HOU/20]. \*
- XXV-33 U.N. Department of Economic and Social Affairs - Urban Land Policies and Land-Use Control Measures. N.Y. 1973. [ST/ECA/167;ST/ECA/167/ADD.4].

- XXV-34 U.N. Economic and Social Council, Economic Commission for Africa - Working Group of Experts on House-Building Costs, Tangier 1-12 September, 1969. [E/CN.14/HOU/REV.1]. #

A comparative review of low-cost housing projects in Libya, Morocco, Sudan, UAR, and Tunisia. An outline of each project, the plan, house type, building estimates and labor costs, and building materials. The report recommends that the head of the family as the builder in traditional housing could be substituted for technical supervision, and rural immigrants could be introduced to urban society through local housing and building industry as devices of reducing building costs further. An analysis of each cost element is given including a summary and illustration of project.

- XXV-35 U.S. Congress, Senate, Committee on Banking and Currency, Subcommittee on Housing, 87th Congress, 2nd Session - Report on International Housing Programs. U.S. Government Printing Office, Washington, D.C. 1962.

- XXV-36 U.S. Congress, Senate, Committee on Banking & Currency - Study of International Housing. Hearings before a Subcommittee of the Committee of Banking & Currency, U.S. Senate, 88th congress. U.S. Government Printing Office, Washington, D.C. 1963. 232 pp.

The purpose of the study was "to review existing programs and to explore new proposals on ways that the U.S. can be of assistance to underdeveloped nations for decent housing and urban planning." The format of the study was to have papers prepared by specialists and published, analysis of the present program by AID, questionnaires to be filled out by a selected number of Foreign Mission Officers, special studies by Senate committee staff members, and then hearings in 1963. The cited volume includes the topics for subcommittee hearing papers and the record of the hearings. Topics include a) the problem--what is it?, b) forms of assistance--what is available, technical assistance, the role of private enterprise, c) types of assistance programs, urban planning, community

facilities, the building materials industry, homebuilding techniques and materials, aided self-help housing, cooperative housing, home financing, thrift institutions, slum clearance and public housing, educational and training programs, and local government organization.

- XXV-37 Wendt, P. F. - "La Determinazione delle Politiche Edilizie in una economia in via di Sviluppo," (The Determination of Housing Policies in a Developing Economy), Review of International Science Economic Commission, Vol. 14 (No. 11), pp. 1085-1109 (November 1967).

For further references on this topic, see items:

I-38, IIIA-17, IV-13, VII-4, VIII-6, IX-6, XI-4, XIIIB-12, XIIIB-17, XIIIB-20, XIIIB-32, XIV-14, XIV-16, XVIA-7, XVIA-8, XVIA-11, XVIB-6, XVIB-11, XVID-2, XVID-5, XVID-12, XVID-17, XVID-19, XVIII-10, XX-7, XX-12, XX-13, XX-14, XX-15, XX-16, XX-18, XXI-8, XXI-9, XXII-2, XXIII-31, XXIII-42, XXIII-65, XXIII-70, XXIII-74, XXIII-84, XXIII-102, XXIII-106.

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- XXVI-28 Smith, Wallace F. - Filtering and Neighborhood Change. University of California Center for Real Estate and Urban Economics, Research Reports no. 24, Berkeley, California. 1964.

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For further references on this topic, see items:

IIIA-15, IIIA-17, IIIB-1, IIIB-4, IV-11, IV-12, IV-27, VE-17, VIC-4, VIC-5, VII-10, XIIIB-22, XIIIB-28, XIIIC-1, XIIIC-11, XIIIC-22, XIIIC-23, XIIIC-26, XIIIC-27, XIV-3, XX-8, XX-9, XX-10, XX-17, XX-19, XX-20, XXI-12, XXI-13, XXIII-52, XXIII-75, XXIII-90, XXIII-93, XXIII-95, XXIII-98, XXV-20, XXV-33.

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Smith, A.B.; Brown, C.D.; and Jones, E.F. - Reference  
Brown, C.D. (Smith, A.B. and Jones, E.F.) - Reference  
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The main entries in this index are large geographical regions (sometimes continents). Sub-divisions are individual countries or political entities. Whenever a given publication can be identified as being related primarily to a given country, it is listed under that country. If it is related primarily to a larger area or region, it is listed under the appropriate main entry for a continent or region. Since many publications involve both a given country and a larger region, it may be wise to check both (some publications are listed under both entries).

Many publications, although aimed at the more highly industrialized countries, contain material of interest to developing countries--such as industrialized urban housing. Such papers are not listed in this index unless they refer to specific developing countries or regions.

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