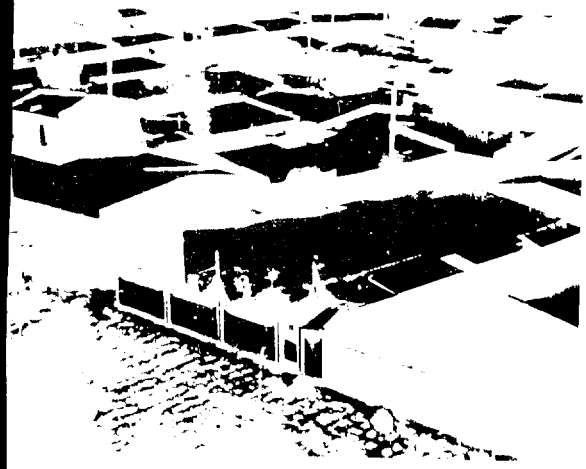
HouseS

A SOURCE BOOK
ON LOW-INCOME HOUSING
PROGRAMS, STRATEGIES, TECHNOLOGIES
AND DESIGNS



BUILDING HOUSES FOR THE POOR

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PROGRAMS, STRATEGIES, TECHNOLOGIES
AND DESIGNS

(Papers and Proceedings from a Consultation-Workshop Series held in Manila, Cebu and Davao in October-December 1991)

Published by the Small Enterprises Research and Development Foundation

SERDEF

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Building Houses for the Poor: A Source Book on Low-Income Housing Programs, Strategies, Technologies and Designs (Papers and Proceedings from a Consultation-Workshop Series held in Manila, Cebu and Davao in October-December 1991, organized by the United States Agency for International Development and the Small Enterprises Research and Development Foundation.)

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PREFACE

The shortage of decent, affordable housing among the poor sectors of society is a crucial need many government leaders and policy planners seek to answer. Recent disasters have further underscored the urgency of finding appropriate solutions to this problem in a massive and systematic manner.

Lately, government has turned more and more to the private sector as a conduit for delivering housing assistance and services. Indeed, private voluntary organizations, with their vaunted empathy with the needs and aspirations of the poor, have demonstrated that they can efficiently develop home sites, build housing units as well as provide complementary services for the poor. These accomplishments have encouraged other NGOs to come up with their own housing initiatives.

Late last year (1991), a series of consulation-workshops on low-income housing was organized in order to provide a forum whereby government and non-government organizations can exchange experiences, insights and knowhow in terms of housing programs, strategies and technologies.

The first workshop was held in Manila on October 12-15; the second, in Cebu on November 18-20; and the third, in Davao on December 18-20. Altogether, the workshop series brought together a total of 148 participants, observers and resource persons representing Luzon, Visayas and Mindanao. The participants have been carefully selected from among NGOs, government agencies and people's organizations for their ability to articulate needs and problems of the housing sector and contribute to formulating responses to them.

The workshop sought to give useful information about the National Shelter Program as well as component financial and service schemes, particularly those offering opportunities for NGO participation. The workshop also culled case stories of NGOs trying to implement housing delivery services, with or without government assistance, focusing on success factors and learning experiences. Technical papers on disaster-resistant construction and appropriate housing technologies, designs and trends were also presented.

From such cross-section of housing and development experiences, the Workshop looked for directions in terms of action programs that would help overcome or reduce barriers to housing among the poor.

This volume records the proceedings of the workshop series. It catalogues the technical and empirical papers, the discussions and exchange of experiences that followed and the recommendations for action that came out of the deliberations.

The organizers of the workshop — the United States Agency for International Development (USAID) and the Small Enterprises Research and Development Foundation (SERDEF) — hope that this volume can help NGOs, people's organizations, community associations and other groups make more informed choices in formulating housing strategies for the communities they work with.

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

SMALL ENTERPRISES RESEARCH AND
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February 1992

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GLOSSARY

HOUSING

Batas Pambansa 220	The set of regulatory standards aimed at providing alternative norms for low-cost land development and housing intended to serve the low-income population. Generally, this provides more relaxed standards than those originally mandated by the National Building Code and other related codes.
Community Association	(See Homeowners Association)
Community Space	Land allocated within a site or housing project for shared community facilities such as parks, playgrounds, church sites, community centers, etc.
Core House (also Core Shelter or Starter House)	The central or basic part of a dwelling to to which further improvements can be added by the owner. This may sometimes include a toilet and kitchen.
Core House Program	A low-cost strategy particularly suited to provide housing solutions for low-income families. This is oriented around the provision of core houses in lieu of complete dwellings in order to maximize the number of potential beneficiaries.
Core Shelter	(See Core House)
Core Shelter Program	(See Core House Program)
Economic Housing	Housing provided for low-income and sometimes middle-income groups generally through government intervention. Sometimes, there is higher level of private sector involvement, with little or no subsidy and thus, more financially viable in terms of return on investment.

Homeowners Association	A non-profit, legally-constituted organization of dwellers within a particular project whose function it is to provide security, maintenance and similar services to the community especially when these are not provided by a public agency.
Homesite	A parcel of land suitable for a dwelling unit usually within a developed or developable subdivision.
Housing Cooperative	A legally incorporated group of person organized for mutual assistance among its members, with the primary objective of satisfying their need for affordable housing. The two known types of housing cooperatives are: (1) the home financing type which grants long-term housing loans to members and leaves the members alone to secure their houses; and (2) the group development type which undertakes the purchase and development of land and houses and sells or leases the units to the members. The second type takes three general forms: sub-type A wherein houses and lots are sold to members (one house-one owner scheme); sub-type B wherein apartments or flats are sold to members but the land is titled in the name of the cooperative (condominium scheme); and sub-type C wherein houses and/or lots are leased to members while ownership remains with the cooperative.
Housing Density	The ratio of number of dwellings to a given unit area. This is commonly expressed in dwelling units per hectare or per acre.
Housing Project	A planned residential development consisting of a building, group of buildings, or group of individual or multiple dwellings including land, utilities and other facilities that provides shelter and related services for a fairly large number of families.
Land Conversion	A legal process reclassifying land from agricultural to residential use. Generally, this is within the responsibility and authority of the Department of Agrarian Reform and an offshoot of the Land Reform Program.

Medium-Rise Housing	A program for the construction of three to four-storey walk-up buildings in high-density urban areas.
Occupancy Rate	The number of persons or households per room or per dwelling.
Off-Site Housing	Housing provided for a community or group of families on sites other than those originally occupied by them. Relocation projects for squatter families are examples of off-site housing.
On-Site Housing	Housing provided for a community or group of families on the site originally occupied by them. This generally implies the undertaking of improvements on the original site such as realignment of roads and paths, upgrading of utilities, etc.
Open Space	Land allocated within a site or housing project for roads and other circulation networks, parks and playgrounds and shared community facilities. This is generally held in trust and not available for vertical development or construction.
Plot	A parcel of land or an assemblage of contiguous parcels into a single unit; also a relatively small area of land.
Prefabrication	Commonly applied to the precasting and assemblage of parts for houses and other structures.
Salable Land	Land allocated within a site for subdivision into individually titled lots for sale to existing and potential members of a community.
Self-Help Housing	Housing built by the owner. Self-help may be total or partial, with the owner doing what he can and hiring skilled workers to do the more difficult tasks. Partial self-help housing also takes place when a core house is provided and the owner undertakes the partitioning and other finishing work.

Single House	A complete structure intended for a single family or household.
Social Housing	Housing provided for low-income groups generally through government intervention and characterized by substantial subsidies and direct assistance.
Starter House	(See Core House)

FINANCING

Amortization	A provision made in advance for the gradual liquidation of a future obligation by periodic charges against the capital account or by the creation of money fund sufficient to meet the obligation when due.
Bridge Financing (also Interim Financing)	Financial assistance extended to private developers of housing projects for the site development and construction of dwelling units in the form of short-term loans, with interest generally lower than prime commercial rates.
Collateral	Property, or evidence thereof, deposited with a creditor to guarantee the payment of a loan.
Interim Financing	(See Bridge Financing)
Originator	Refers to such entities as developers, civic organizations, non-government organizations (NGOs), financial institutions, community-based organizations (CBOs), local government units (LGUs), government organizations (GOs) that can assist low-income groups in community organizing and coordination, initiation and management of livelihood and housing efforts, technical planning assistance, project development and management, legal assistance, mortgage processing, coordination and liaison with related government agencies.
Sweat Equity	In lieu of cash equity, participation of recipients of housing assistance in the form of labor either in the construction of their own houses and/or

	houses of other members of the community and/or common facilities.
Take-out	The release of a housing loan by a financial institution or intermediary to the borrower usually in the form of a check.

I. SYNOPSIS AND SUMMARY OF RECOMMENDATIONS

SYNOPSIS AND SUMMARY OF RECOMMENDATIONS

The Housing Situation

The housing problem in the country has reached alarming proportions as reflected in the following statistics:

* As of 1988, the housing shortage nationwide is estimated at 3.4 million units. Housing backlog in Metro Manila alone is about 0.6 million units.

* The annual demand for houses is from 200,000 to 250,000 units.

* 70 to 80 per cent of families are unable to finance the construction of their own homes.

* Slum and squatter dwellers are estimated to be 2.5 million. The lowest 30 per cent of the society resorts to the only feasible recourse left, that is, to engage in informal self-help housing by squatting in government or privately-owned lands.

Barriers to Low-Income Housing

The barriers to home ownership for the low-income population are as follows:

* Lack of access to land as a result of increasing cost brought about by uncontrolled land speculation and hoarding and limited land ownership by only a small percentage of the population.

* High cost of development and construction.

* Difficulty in accessing financing brought about by bureaucratic delays and complexities.

* High cost of financing.

Government and Private Sector Responses to the Housing Problem

Efforts by both the government and private sectors to respond to the housing needs of the urban poor have yet to make a significant dent on the massive problem of homelessness.

On December 17, 1986, the government launched the National Shelter Program or NSP through Executive Order 90 for the purpose of making shelter affordable and accessible to everyone. After its earlier attempts to be a direct producer of housing units failed, the government assumed the secondary role of facilitator and enabler in housing. Today, the government initiates and supports programs using NGOs, the private sector and people's organizations as the main actors and implementors.

The major program of government designed to respond to the homelessness of the urban poor is the Community Mortgage Program (CMP) which provides concessional loans to organized community groups for land acquisition. It recognizes the organized community as the key actor and institutionalizes the involvement of the NGOs in order to tap their vast resources. It attempts to link the urban poor or informal sector to the formal financing sector.

The widespread delivery of CMP as well as other government housing services is slowed down by a number of factors. These include lack of manpower, inadequate promotional activities, overcentralization of services in Metro Manila and other urban centers, lack of coordination among government agencies, poor collection and bureaucratic procedures.

Case stories of attempts by NGOs in low-income housing illustrate their important role in addressing this basic need. Operating under varying degrees of resource limitations and employing various approaches, NGOs have put up low-cost housing units using locally abundant and cheap materials. Their housing programs are characterized by such features as self-help, strong ties with the Community Mortgage Program and integration of the Mutual Fund Component for socialized housing and income-generating activities.

NGOs implementing shelter projects have to contend with problems like inadequate financing, difficulties in dealing with government bureaucracies and accessing housing programs, escalating costs of land, development and construction, low affordability levels of clientele and poor collection.

Several NGOs were able to demonstrate that going into low-income housing can be both a self-sustaining and rewarding venture. They have adopted key success factors in the implementation of their programs, running them like business concerns without losing track of their development orientation. These identified success factors include the following:

* Having the right linkages with the various sectors of the community

* Operating with a streamlined, experienced and committed staff who are paid competitive and just salaries

* Engaging in consultancy services to augment the income of the organization's professionals

* Proper screening and selection of beneficiaries

* Pricing close to the market

* Efficient management of cash flows

* Computerizing business systems to enhance efficiency in management operations

The collective experiences of these NGOs provide a rich source of information on innovative and adaptive approaches useful for those who are planning to go into sustainable low-income housing projects.

Others expressed a felt need for enhancing capabilities in program and fund management and infusion of some degree of business orientation to sustain their operations.

Appropriate Technologies for Low-Income Housing

The increasing cost of putting up housing units and the growing number of the urban and rural poor are putting a strain on the capabilities of both government and private sectors to address this problem adequately. Aggravating the problem is the extensive damage usually wrought by typhoons, earthquakes and other natural disasters that frequently visit the country.

Substantial losses from disasters in terms of life and property can be reduced by building disaster-resistant low-income dwellings. This means integrating the basic philosophy of disaster-responsive construction into the low-income housing program. Important aspects of this philosophy are proper choice of site, building plan, design, utilization of appropriate construction materials and technologies.

A case study on the mass construction of core shelter units designed to withstand typhoon winds up to 180 kph was presented to demonstrate the application of this philosophy. Implemented by the Department of Social Welfare and Community Development in three typhoon-prone regions of the country, the project features several components: social preparation and community organizing; food for work; use of housing plan; technical assistance in house construction; and self-help. Among the drawbacks the project had to face were price escalation of construction materials; difficulty in acquiring safe, low-risk resettlement sites; and the uphill task of inculcating sound values and attitudes among the beneficiary groups.

Various design, material and construction technologies have been developed and tested and are, in fact, being promoted by contractors, technologists, architects, developers or builders for low-cost housing application. These range from con-

struction materials like interlocking hollow blocks, compressed earth blocks and wood wool cement to a design and construction technology for medium-rise housing for areas with high population density.

Lack of awareness of these technologies, perception of additional costs involved and inaccessibility to sources of appropriate technical assistance have constrained a more widespread appreciation and application of these technologies.

Livelihood and Low-Income Housing

The low affordability levels of the target clientele require the integration of livelihood or income-generating activities into housing programs to help them augment their income and raise their affordability levels. The relevant issues to livelihood include provision of the appropriate technical and financial assistance as well as space for commercial activities.

Issues and Recommendations

The workshops have identified the following critical issues:

* Limited financing - The resources of NGOs to finance low-cost housing programs are inadequate. The budget allocation for low-cost housing by the government is grossly inadequate for the amount required. It is estimated that the government allocates only 1/10 of 1% of the total national budget to the whole national shelter program.

* Slow processing of loan applications - Access to financing and other housing programs of the government is hampered by bureaucratic red tape, unresponsive policies and tedious procedural requirements.

* Access to land - NGOs find it difficult to acquire land for low-cost housing due to high cost, land speculation, problems in land conversion, imposition of taxes on land donated for low-income housing purposes, etc.

* Limited private sector participation - Private sector developers generally shy away from low-cost housing due to its being a low-profit venture. Their outputs are directed almost exclusively to the upper 15 per cent of the society.

* Barriers to adoption of low-cost housing technologies - Adoption of low-cost housing technologies is hampered by lack of information on appropriate technical assistance, inadequate promotion, problems of adaptation, costs and cultural biases.

* Inadequate promotion of programs - The urban poor lack awareness of government programs on housing. People generally do not know what agencies to approach for housing assistance.

* Government working at cross-purposes - The efforts of government in housing are perceived to be negated or slowed down by the policies and practices of other branches and instrumentalities of the government. These are in the areas of land conversion, processing of land titles, budget allocation and release and taxation.

To address the above problems and issues, the following blueprint for action was formulated:

* The government must put more focus on the lowest 30 per cent of income earners of the society. It should redirect regulatory functions to serve low-income clientele, allocate higher budget for social housing, relax standards and streamline procedures to make these more responsive to the needs of the beneficiaries.

  To improve efficiency of service, the government must set up fast express lane processing and facilitate decentralization of government services.

* Both government and private sectors must cooperate in a continuing program of development, adaptation, promotion and dissemination of low-cost housing design, material and construction technologies for maximum utilization.

* A genuine urban land reform program must be enacted and implemented.

* Government must formulate supportive policies, provide incentives and relax its regulations to stimulate private sector involvement in low income housing.

* A mechanism must be developed to foster institutionalized sharing of resources and expertise; dialogues on relevant issues; and review of existing policies and procedures on low-income housing by government, non-government and people's organizations and the target clientele.

This mechanism should also institutionalize NGO-PO participation in monitoring the low-income housing programs of the government.

* With the problem of high cost of land and its availability for residential use, government land banking should be initiated and undertaken, passage of urban land reform bill supported and existing zoning ordinances amended by the local government units.

Accomplishment of the Consultation-Workshop Series

The consultation-workshops achieved the following:

* Put more focus on the problem of low-income housing.

* Provided a venue where the practitioners were able to share their experiences with the beginners so that they will be able to avoid the mistakes and problems earlier encountered by those in the same situation.

* Forced the actors of the housing programs to analyze their development objectives vis-a-vis their resources and limitations and identify and delineate their specific roles with regards to these objectives.

The workshops have identified the following roles for each sector:

Non-government organizations as advocate, facilitator, coordinator, trainor and implementor of housing for the poor will be the major provider of support systems, including technology transfer, capability building through value formation, community organization and advocacy.

Government as facilitator and enabler by cutting red tape, simplifying documentation requirements and formulating responsive policies and programs.

Planners/developers/contractors/builders as provider of technology and technical assistance, skilled labor and competent management

Target beneficiaries must share in the responsibility for their own development and participate in the planning process.

* Opened opportunities for transfer or sharing of appropriate technologies on low-cost housing among the groups. For example, the core shelter design of DSWD for disaster resistance may be replicated or adapted in low-cost housing programs of the NHA and other development institutions.

* Drove home the point that a sustainable low-income housing program can be successfully implemented by an NGO operating efficiently in a business-like manner without losing its development orientation.

II. RESOURCE PAPERS

A. HOUSING FOR LOW-INCOME PEOPLE: POLICIES AND PROGRAMS

THE NATIONAL SHELTER PROGRAM

Elpidio Damaso
Secretary-General
Housing Urban and Development Coordinating Council

Previously the national housing program was administered by the Ministry of Human Settlements. By virtue of Executive Order No. 83, the Ministry was dissolved and subsequently the Housing Urban and Development Coordinating Council (HUDCC) was created by Executive Order No. 90. This is basically a council composed of several government agencies and private sector groups.

The HUDCC structure is shown in Fig. 1. On the first line you have the funding agencies which fund the programs we have in housing. These include: the Social Security System, the Government Service Insurance System (GSIS) and the Pag-IBIG. HUDCC is a policy body with four implementing agencies, namely: the National Home Mortgage Finance Corporation (NHMFC), the National Housing Authority (NHA), the Housing and Land Use Regulatory Board (HLURB) and the Home Insurance Guaranty Corporation (HIGC). In addition, to provide support from other government agencies, we have the Department of Budget and Management (DBM), the National Economic and Development Authority (NEDA), the Development Bank of the Philippines (DBP), the Department of Finance (DOF), the Presidential Management Staff (PMS) and the Department of Public Works and Highways (DPWH) as members of the council.

Aside from these, we have four representatives from the private sector. We have a representative from the professionals or the architects and the engineers. We have a representative from the bankers, a representative from the urban poor groups and a representative from the brokers/developers/contractors group.

HUDCC is a large council. There are 21 members working on a consensus basis to be able to arrive at housing policy. Sometimes the policy issues can be so drawn out. There were meetings in the early part of HUDCC's existence which did not resolve any of the policy issues. But as we went along, several of these policy issues were put to rest.

How are the programs of HUDCC structured? Fig. 2 shows a schematic diagram of HUDCC's program. Under the Executive Order, we have the National Shelter Program administered by HUDCC with the funding agencies and key housing agencies and support agencies and the private sector representatives as part of the Council. The fourth level shows the four major programs that we have. You may not be completely aware of this but the only agency that does any kind of production in government is the National Housing Authority. Only the NHA can

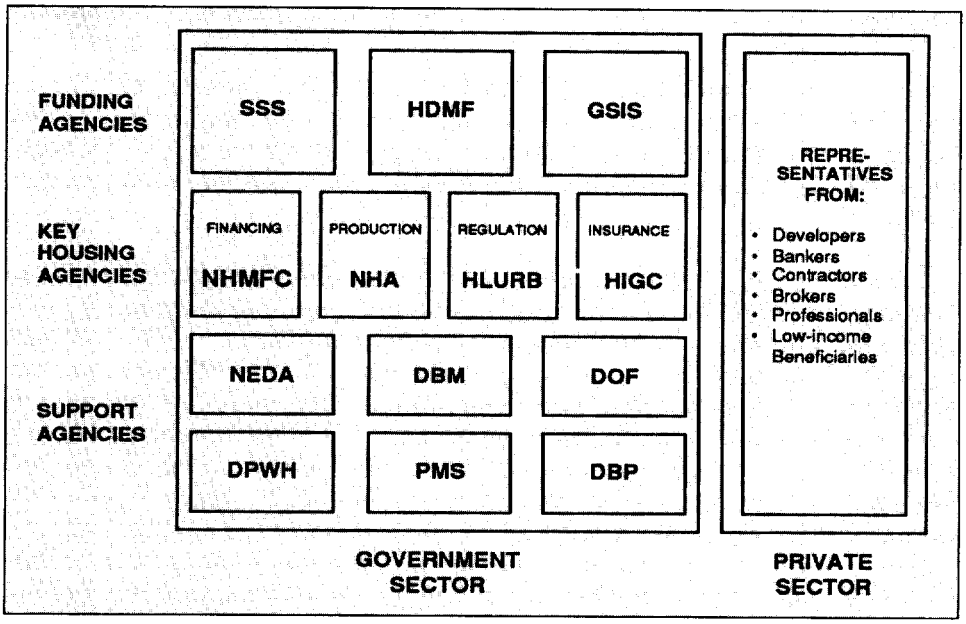

Fig. 1 Housing and UrbanDevelopment Coordinating Council

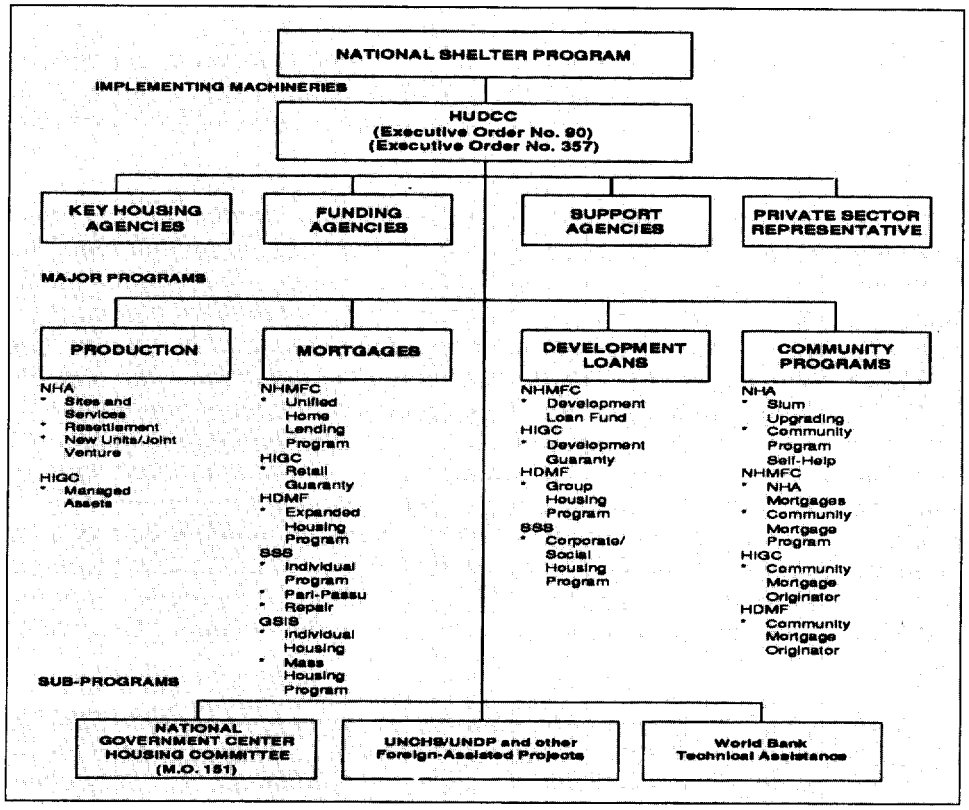

Fig. 2. The National Shelter Program

do direct construction of houses through their contractors. The other agencies are not allowed by administrative order to undertake this. So that the HIGC at the bottom only undertakes projects that were carryovers from the Marcos years like the BLISS projects which still have to be completed. This is a wind-down operation for HIGC.

Under mortgages, the primary institution for generating mortgages is the NHMFC. In effect, the NHMFC is the bank of the housing industry. It is the government bank in housing. The other activities of the NHMFC, HIGC, HDMF, SSS and the GSIS are adjunct activities to this main banking function. In other words, they are support. A lot of you are not aware that there are development loans available. If you are, some of you are shying away from them. Right now there is P1.0 billion in development loans available under NHMFC. Only a few have availed of this program maybe because of lack of information regarding it. Aside from this, the *Abot Kaya* law passed by Congress two years ago appropriates P500 million, of which P100 million again goes to the development loan program. When we say development loan program, this is money made available to developers and intermediaries to develop the property and construct the houses before the long-term mortgages are made available. The mortgage program assumes you have a completed house before you can get a mortgage.

What are the steps to get a completed house? Well, you need money to build a house. You need money to finish the development. And this money is being administered primarily by the NHMFC and secondarily by the HDMF or the Pag-IBIG.

I think most of you are familiar with the last program. Most of you have been practitioners of it. When we say community programs, we do not only mean the Community Mortgage Program. The CMP is one of the community programs under the major program. You will notice that NHA Sites and Services and Slum Upgrading are still part of the community programs aside from the Community Mortgage Program. But the mainstay program under this is the CMP. So that HUDCC is the responsible agency for making sure that these four programs are in place. Together with this, we have three sub-projects. We have in Manila the National Government Center or the Batasan which is the largest concentration of squatters in our country. When we started, we estimated that there were about 19,000 families. Now the estimate is about 34,000 families around the Batasan area. This is being undertaken by a project group which was created by an administrative order as well and supervised by HUDCC. There are two other projects — one is a World Bank grant project and the other is the UN Center for Human Settlements project.

In effect, if you take a look at the relationships of all the programs, HUDCC is a policy body and not an implementing body. It determines the programs. In fact, it dictates on NHMFC on such things as loan limits, interest rates, sources of funds while NHMFC administers the actual disbursements of the funds into the housing program. The inter-relationships between all the actors vis-a-vis the four programs

are shown in Fig. 3. Each of these four programs identifies the main actor for a particular program. In the case of the Unified Home Lending program which is the mainstay of the mortgage program, it is NHMFC. The CMP again is an NHMFC activity. The Social Housing Development Loan Fund is now shared between the Pag-IBIG and NHMFC. The Joint Venture Program is an NHA main activity. The Regulatory Board Council is the regulatory arm of HUDCC within the whole housing program. These are all inter-related. Nobody is competing for projects unlike in the past, where NHA was competing for projects with the HIGC and HDMF. There was confusion then. Second, the rates were different. You had 14 per cent on one side and 9 per cent on the other. Again, these differences confused beneficiaries. What we have now is a unified program. SSS is allowed to originate. The interest structure of the SSS follows the Unified Home Lending Program structure. And everyone else who originates within the system follows the same structure.

Basically, the HUDCC program is a low-income focused program. Government assistance in the past five years has been focused on primarily the bottom 50 per cent. Almost 70 per cent of our program addresses the need of the bottom 50 per cent. One of the reasons why we were doing a lot of advocacy is because we have great difficulty in trying to address this area with private sector developers. We have to rely on the non-government organizations, the private voluntary organizations and the church groups to work out assistance in this level. The profit margin in low-income housing, especially for the bottom 30 per cent, is very, very small. A small change in prices of materials can wipe out all profits.

Now, how well are we doing? HUDCC is one of the less-heralded activities in this country. We have good media exposure. But very few people understand what we have tried to do in the last five years. So here we are presenting to you on Table 1 what we have been able to do in the past five years and compared it with the previous administration. We are saying that if we are able to meet our targets by June 1992, the total assistance in housing would have surpassed those of all the past administrations since independence. In other words, in the five years of this administration, we can show almost half a million families assisted. And if you put together the output of all the past administrations from the time of President Roxas to the time of President Marcos, the accomplishments of the present government would have surpassed that number. For 1991, we are slightly below target. These are targets imposed upon us in 1986. We expect to do about 90 to 92 per cent of target for 1991. A lot of factors have affected us. There has been a general slowdown in the economy; a lot of disasters have hit us. Despite that, I think a 90 per cent rating for any government program is very commendable. The thing that disturbs me is that the community mortgage program is the one that really slowed down. If you notice it is 40 per cent off target. So that when Francisco Fernandez comes in later (See page 17), we can get a better overview of the community programs and its effect and understand the reason for the slowdown.

What is the difference between the old program and the new program? In the old program, you are aware that government was into direct housing (i.e., it was

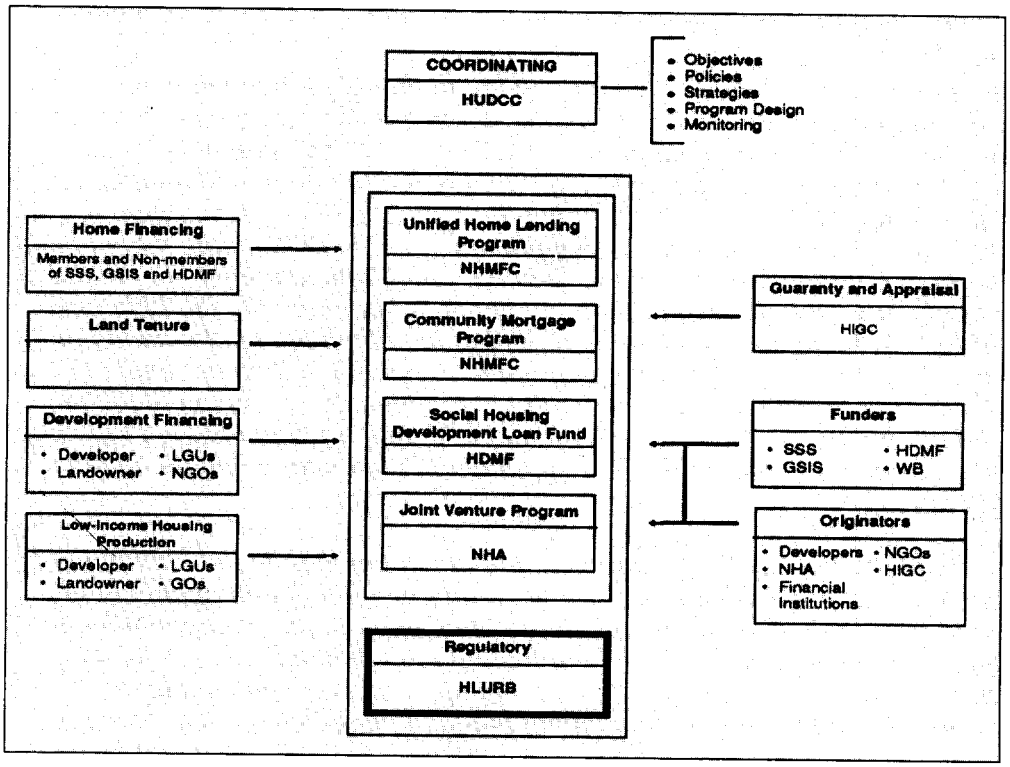

Fig. 3. Housing Sector Program Relationships

COMPONENTS	COST URBAN LAND	RAW BASIC SERVICES	PLUS SANITARY CORE	PLUS CORE HOUSE	PLUS SHELL HOUSE	PLUS COMPLETE HOUSE
LAND						
Gross Area	65	65	65	65	65	65
Per square meter	313	313	313	313	313	313
Total Cost	20,313	20,313	20,313	20,313	20,313	20,313
LAND DEVELOPMENT						
Per square meter		150	150	150	150	150
Total Cost	9,750	9,750	9,750	9,750	9,750	
STRUCTURE						
Area			2	20	20	20
Per square meter			7,125	1,750	2,375	2,750
Total Cost	0	0	14,250	35,000	47,500	55,000
TOTAL DIRECT COSTS	20,313	30,063	44,313	65,063	77,563	85,063
SOFT COSTS						
% of Direct cost	0%	10%	15%	20%	25%	30%
Total Cost	0	3,006	6,647	13,013	19,391	25,519
TOTAL PRICE	20,313	33,069	50,959	78,075	96,953	110,581
Less Down Payment	0	0	0	7,808	9,695	11,058
MORTGAGE LOAN	20,313	33,069	50,959	70,268	87,258	99,523
REQUIRED MO. INCOME	677	1,102	1,699	2,342	2,909	3,317
PHIL. PERCENTILE	4.7	8.5	15.4	24.8	34.4	41.0
NCR PERCENTILE	2.1	4.6	8.2	13.7	20.0	30.1

Fig. 4. Housing Sector Program Relationships

	Previous Administration			Aquino Administration		
	1948-1975	1976-1985	GRAND TOTAL	1987-1S 1991	2S 1991-1S 1992 (Target)	GRAND TOTAL
Financing	**78,046**	**152,297**	**230,343**	**199,186**	**73,473**	**272,659**
SSS	39,131	64,492	103,623	19,249	1,233	20,482
GSIS	14,500	26,718	41,218	11,960	2,890	14,850
DBP	24,415	13,806	38,221	0	0	0
NHMFC	—	47,281	47,281	86,661	44,482	131,143
HDMF	—	0	0	31,689	10,903	42,592
HIGC/HFC	—	0	0	49,627	13,965	63,592
Production	**57,068**	**137,243**	**194,311**	**106,976**	**49,033**	**156,009**
NHA/PHHC	13,000	124,837	137,837	106,976	49,033	156,009
DPWH	44,068	0	44,068	0	0	0
BDC	—	12,406	12,406	0	0	0
TOTAL	**135,114**	**289,540**	**424,654**	**306,162**	**122,506**	**428,668**
Years	28	10	38	4.5	1.0	5.5
Annual Average	**4,826**	**28,954**	**11,175**	**68,036**	**122,506**	**77,940**

Table 1. Government Housing Assistance
Previous Administration – Aquino Administration

building the houses). As a result, much of the resources were being wasted. Fig. 4 shows what we do in housing right now. At the far extreme, we allow the financing of raw land. At the other extreme is a completed house. And in-between, the gradients of housing assistance are available for financing with government. This I think is a very substantial difference between the old system and the current system. In the old system, only completed houses were being undertaken.

My big problem is that if you take a look at the numbers, 80 per cent of all total housing assistance in the past has gone to Metro Manila, Region 3 and Region 4. Region 11 is a little bit luckier because in 1990, it accounted for almost 11 per cent of the total figure. This means the remaining 9 per cent was divided among all the other regions in the country. If you take a look at the program, 80 per cent went to Metro Manila and immediate environs, 11 per cent to Region 11 and 9 per cent for the nine other regions in the country. The present distribution has led us to undertake consultation forums and workshops in the regions. Aside from these, we are doing a lot of activities with the UN, to do a lot of advocacy from the regions. We do not do the programs ourselves, since housing is no longer done by government primarily, but through the private sector. Unless you can move, nothing moves for us in government. So in regions where they complain — "no housing here," we say "that's because you do not have private sector groups working in housing." When government has to do it, we end up with a situation of the past: 35,000 units of assistance. That's about it. We are now able to do three times more because we are going through the private sector. We recognize this as a mainstream. We recognize that there are attendant problems. I am here to listen to problems relating to undertaking housing with government support. I am not saying that it is easy. Dealing with government can be a very complicated thing. But if you know how, it can be quite a good experience. But if you do not know how, it can be a very complicated, very frustrating and demanding on your time. We are here to try to get you to understand the "how to" and get you interested as well.

THE COMMUNITY MORTGAGE PROGRAM OF NHMFC

Francisco Fernandez
Vice-President for Community Mortgage Program
National Home Mortgage Finance Corporation

The housing situation in the Philippines is of disaster proportion. For the year 1988, there was an estimated 10 million households, 40 per cent and 60 per cent of which are found in the urban and rural areas. Housing shortage for the same period was estimated to reach 3,376,000 units nationwide, of which 576,000 are needed in Metro Manila alone. The number of houses needed per year is from 200,000 to 250,000 units. It is estimated that 70 per cent of the Filipinos are unable to finance their own dwelling units. Households in slums or squatters total 2.5 million.

The major program of government designed to respond to the homelessness of the urban poor in the Philippines is the Community Mortgage Program (CMP) which enables existing communities to buy the land they are presently occupying. Another program is the Socialized Housing Development Fund (See page 48 for more information on this Fund.) which is basically like the CMP except that it is focused on the developers – whether commercial or NGO developers. This fund will assume responsibility for what used to be CMP off-site projects. In other words, if housing is intended not for an existing community, CMP no longer handles it but is passed on to this other program.

I will discuss the Community Mortgage Program, particularly the problems it now faces and the opportunities it offers PVO and ECD groups. I will then briefly focus on Cebu City and how the various groups and entities have availed of the opportunities offered by low-income housing. (See Annex A for details about the program.)

Talking about CMP is both a pleasure and an embarrassment. A pleasure because CMP is such a simple do-able program but with mind-boggling impacts. An embarrassment because its performance in the past several months has been dismal.

CMP is a simple program. It requires the urban poor, especially those occupying lots which do not belong to them, to organize and freely negotiate with the landowner. Should the community association and the landowner come to a voluntary agreement, the community association applies at National Home Mortgage Finance Corporation (NHMFC) for a loan with which they can pay the landowner in cash. The organized community will in turn pay NHMFC within 25 years with an interest of only six per cent per year. (See Annex B - "Step-by-Step Guidelines for Communities Applying for CMP Assistance;" Annex C - "Accredi-

tation Criteria for Community - Based Organizations" and Annex D - "Procedures for Processing Community Mortgages.")

This program has mind-boggling impacts. It is a concrete response to the urban poor's expressed priority concern – security of land tenure. It also provides the urban poor the incentive to develop their neighborhood and improve their homes on an incremental basis, either on their own or through additional loans also from NHMFC.

CMP is gaining international attention. There are four reasons. First, the primary actor of the program is the organized community itself. In most other land reform programs, whether agrarian or urban, the key actor is usually government, which often results either in corruption and/or a much bloated bureaucracy. In CMP, it is the community which negotiates with the landowner and decides the level and method of site development, etc. NHMFC merely extends long-term loans through originators chosen by the community itself. CMP is people power, hopefully in the genuine sense.

The second reason is CMP taps in an institutional manner the vast and awesome resource of the NGOs. Fortunately for all of us, NHMFC, as a secondary finance institution, requires the services of originators. NHMFC by merely allowing NGOs to originate CMP, was able to obtain for itself, with minimum efforts and at very little additional cost to the government, a vast machinery to organize and deal with urban poor communities. The bottleneck of the program is in the processing of documents, something which we will discuss a little later.

That NHMFC extends to NGOs an originating fee of P500 per family-beneficiary is also another innovative feature of the program. This fee affords the originators an opportunity for self-reliance, at the same time making it unnecessary for government to further increase the already huge bureaucracy had it not been possible to tap the services of NGOs.

The third outstanding feature of the program is the attempt to implement it at a large scale. It is such a simple and inexpensive program that it is possible to target for a year 33,000 families, possibly even 50,000. CMP is not contented to show models or symbols. It aims at a significant reduction of our squatter population.

The final feature, and this in the opinion of many experts is the most significant aspect of the program, is that CMP is an effective method of accessing the urban poor, an informal sector, to the formal finance system. It would have been much easier to implement the program had it used budgetary and/or subsidized sources of funding, but it would be difficult to sustain and implement it on a large and significant scale.

That CMP taps funds from the formal sector with its vast amount of self-sustaining resources, allowing it to dream of a scale heretofore not even thought of.

This also brings problems about documents and other formalities required by banking institutions. In my opinion, this is an irritating but worthy trade-off.

Yes, CMP is a pleasure. Let me now go to the other side of the coin, that CMP is an embarrassment.

I do not have the exact dates and figures available, But allow me to recollect. CMP was launched in August of 1988. It was off to a good start. As of 1989, it was able to assist 3,199 families, way below the need, but way beyond expectations. In 1990, CMP assisted around 12,440 families within reasonable levels, although below targets and fund availability (See Annex E).

1991 was another disaster year. From January 1 to July 31 of this year, the program has completed only 18 projects with a total beneficiary of 2,050 families, way below the 1991 target of 33,000 families.

NHMFC is well aware of this situation. It intends to make up for lost time. It has taken the following measures:

1. Transfer of loan processing from MTOD to EVP;
2. Creation of the Policy and Executive Committee;
3. Strengthening of regional offices; and
4. Converting CMP from an office to a Group, with a 100 per cent increase in personnel and headed by a Vice President.

We are confident that we will succeed. We intend to complete, before the end of the year, all the 120 or so projects pending with us. In fact, we intend to complete an additional 50 or more projects not yet delivered to us. We will consider ourselves successful if the bottleneck will be on organizing where it should be and not on processing where it should not be.

Let me focus on Cebu. Most are aware of its economic boom. Very few are aware of the strides made by the Advisory and Coordinating Committee for Social Housing, a mixed group of government and non-government organizations. Three hundred ninety-nine families from nine communities have benefitted from CMP loan take-outs from NHMFC. Another 1,023 families from 16 communities have benefitted from the CMP Interim Financing of Pagtambayayong, the Presidential Management Staff and the Cebu City local government. Some 896 families have benefitted from 11 self-help housing projects. One thousand families will benefit from a joint venture project between the Province of Cebu and the National Housing Authority. We have awards ready for around 3,198 families from 27 communities occupying province-owned properties. Another 2000 families from similar province-owned properties will also be awarded as soon as certain organizational and documentary issues are resolved.

All of the above-mentioned projects would total 9,446 families, and the list is not complete as we have not recorded efforts of other non-profit groups. But 9,446

families in a City with a squatter population of 25,000 families, that is almost 38 per cent, is by any standard a feat.

It was not easy. It entailed many sleepless nights. But it was fun and affordable. I do not think more than P50 million has been actually spent for all the above projects, all of which are loans which the urban poor religiously pay.

Of course, low-income housing, as a concern extremely close to the urban poor, will have its share of controversies, as you may have noticed in the headlines of our local papers recently. Let me however assure you that low-income housing has become possible to a large degree in Cebu. It is a not too well-known factor of our vibrant economy.

Thank you.

FAST FACTS: COMMUNITY MORTGAGE PROGRAM

To ensure the effective delivery of housing financing under the National Shelter Program and increase accessibility of home ownership of the lowest sector of the society, the Community Mortgage Program was launched by the NHMFC in August 1988.

In essence, the Community Mortgage Program is a financing scheme that will enable residents of blighted or depressed areas to own the lot they now occupy. Under this scheme, undivided title of lands may be subject of housing loans through NHMFC. The program is also designed to lower development costs and thus result in increased affordability for lower-income borrowers.

1. **Objective**

   To allow tenants of blighted areas or areas for priority development to own the lots they occupy prior to February 25, 1986 and to improve or construct their houses. Relocatees of depressed or blighted areas are also eligible to avail of this program.

2. **Site Requirements**

   a. Must be covered by torrens certificate of title either as a whole or individual by lot.

   b. There must be a schematic plan or sketch showing lot allotment concurred to by borrowers.

   c. Intent to sell on the part of the owner and intent to buy on the part of community association.

   d. Declared as residential with tax declaration.

   e. Must be free from lien/encumbrances at the time of purchase by NHMFC;

   f. Shall follow/adhere to existing laws.

3. **Loan Limits**

P30,000.00/undeveloped lot
P45,000.00/developed lot
P80,000.00/household unit for lot acquisition development and house construction/improvement

4. **Loan Entitlement**

GSIS, SSS or HDMF members - 30 times the regularly received monthly income

Non-members with formal income as per income tax return – 30 times the declared monthly taxable income.

Non-members with informal income as per affidavit – 20 times declared monthly income

5. **Tacked-in Borrowers**

Member borrowers – up to three members who are related up to second degree of consanguinity or affinity.

Non-members – as many as may be necessary provided they are living together within the same household and the creditable monthly income shall not exceed Px,000/borrower.

Members and non-members may also jointly borrow for a single loan.

6. **Household Share**

Excess loan entitlement/affordability may be lent to and borrowed by member-household with less entitlement to meet the total community.

7. **Borrower**

Tenants/beneficiaries should form and register a community association, cooperative or condominium corporation which entity shall borrow and initially own and mortgage the land. Individual's right over the land and eventual ownership of the same is achieved through lease purchase agreement with the community association which should be accredited with the PCUP.

8. **Collateral**

The very same property which is subject of purchase serves as the collateral.

9. **Appraisal**

The land, subject of a proposed on-site community mortgage will no longer require appraisal provided that:

a. majority of the members have been residents prior to February 25, 1986

b. contract price does not exceed P10,000,000

c. allocation shall not exceed P30,000.00 per household

Total community loan exceeding P10,000,000 appraisal shall be conducted by HIGC but corresponding appraisal fee shall be borne by NHMFC.

10. **Insurance**

The loan shall be covered by MRI and FIRE.

11. **Loan Amount and Terms**

The loan can be paid up to 25 years in equal monthly amortization at 6 per cent interest per annum. Until the individual titles of the lots are issued in the names of the members and the individual mortgages annotated thereon, the association is the only borrower and shall collect from the members of the monthly amortization on their loan allocations.

12. **Originator**

The loan shall be originated by an accredited CMP originator which may be a local government unit, developer, originating financial institution or community-based NGO. For each service CMP shall be paying P500 per household borrower and the cost of appraisal fee by the Home Insurance Guaranty Corporation (HIGC).

ANNEX B

STEP-BY-STEP GUIDELINES FOR COMMUNITIES APPLYING FOR CMP ASSISTANCE

1. The members of the community organize themselves into a community organization either through the Home Insurance Guaranty Corporation or the Cooperative Development Authority.

2. The community negotiates with the landowner and both signs a memorandum of agreement to buy and sell. This can also be in the form of a letter of intent to the landowner provided that the community association accepts the letter.

3. The community association chooses an originator. The originator may be an NGO, a local government unit, the NHA (which originates a lot of projects) or the HIGC. It is the community which chooses their originator. After that, a letter is required from the association to the originator after which the originator signs an involvement warranty. This warranty is a promise by the originator to work in the community for at least three years.

4. The originator applies to NHMFC for a project commitment line. This is a promise by NHMFC to provide the loan applied for by the community. To get this commitment line, three sets are required. The first set is intended for the originators to prove their competence. Proof can be shown in three forms: registration; authorization by the board of editors; and capability or track record through financial statements. The most important thing here is to prove that the originators have the integrity and the organizing ability. The second set of documents are meant to prove that the community association is a responsible group. The community must show that they are registered, aware of the program and that the negotiation between the landowner and the community association was transparent. In other words, it is not just the leaders negotiating but the community association that are involved. The NHMFC then does a background check to see if the community association is capable and responsible. This consists of visits with the community and dialogues/interviews with the people. (In the process, NHMFC sometimes finds recalcitrants in the community — people who are on-site but refuses to join the association.) The third set of documents must show that the site must be suitable. This is often the most problematic of the requirements. Conventional appraisals require that the area must not be prone to floods, must be 20 m away from the foreshore, etc. And yet, most of the sites have precisely become squatter areas because there is something wrong with the land. It must also be shown that the titles are clean. And so if you have all these and you are within the financial limits, you are given the project commitment line.

5. As soon as a project commitment line is awarded, the originator together with the community association, will come up with a loan document. There are two sets of loan documents: the mother document between the association and the originator; and the individual loan documents particularly the lease purchase agreement between the members of the community and the community and the proof of income. The proof of income may be in two forms: an affidavit by the community verified by the originator; or a certificate of employment and compensation. If your income is informal, this is multiplied by 20, provided it does not exceed P40,000. If your income is formal, it is multiplied by 26 or 30. There is no limit as long as the amount for raw land does not exceed P30,000. This is a very liberal way of determining the loan repayment capability of the beneficiaries.

6. The NHMFC conducts a loan evaluation and a mortgage evaluation of the documents is submitted. It looks at these documents to find out if the property can be foreclosed when necessary.

7. If NHMFC is convinced that it can be foreclosed, then it issues a letter of guarantee. This letter simply states that if the landowner will transfer the land to the community association within 30 days, NHMFC will remit the money.

8. If the landowner does not trust the letter of guarantee from NHMFC, then it comes up with an escrow agreement wherein NHA promises to deposit the money to a bank acceptable to the landowner and then the bank will be directed to give the money as soon as the title is transferred to the community association

9. Within 30 days after, money is released. This is known as the loan take-out.

10. The NHMFC conducts a collection orientation to the members of the community and signs a collection agreement with the community association.

11. The individual members pay to the community association which in turn remits the money to NHMFC. The originator is not involved in the collection.

12. Finally, NHMFC regularly conducts monitoring of the collection. It intervenes and, whenever necessary, arbitrates in collection and related problems in the community. Here, the originator is also actively involved. It is understood that unless the originator is able to maintain the collection level of the community to 70 per cent, no additional loan may be availed of. This is because the life of the program lies in the ability of the community to repay the loan.

ANNEX C

ACCREDITATION CRITERIA FOR COMMUNITY-BASED ORGANIZATION

The NHMFC is accrediting community-based organizations as originators of loans to be financed under the Community Mortgage Program. Said accreditation shall be limited to the origination of mortgages under this program. However, origination of community mortgages shall not be limited to community-based organizations, as the present accredited originating financial institutions and developers may also participate in the Community Mortgage Program. This is provided that said originators shall comply with all the requirement and qualifications thereof.

I. **Basic Qualifications**

A. The applicant community-based organization must be one of the following:

1. Local government unit
2. National government agency, bureau or corporation
3. Non-stock, non-profit private organization (NGO)

B. Must be able to perform the following functions:

1. Organization and Coordination

a. Initiate the formation of a community association among its intended beneficiaries.

b. Assist in the organization of credit groups for efficiency collection

c. Inform the community of beneficiaries on the mechanics of housing finance, construction of dwelling units, receiving government assistance, and complying with government housing regulation and other related matters.

2. Project Development and Management

a. Develop, manage and market project/s whether directly or through consultants.

b. Assist in actual work plans, engineering and architectural design and socio-economic diagnostic survey.

c. Monitor and record stages of development of project, both horizontal and vertical

3. Mortgage Processing

   a. Complete mortgage documents

   b. Process loan applications

4. Support Services

   a. Act as initiator of livelihood projects to augment the income of beneficiaries.

   b. Assist in the over-all direction and plans of the housing community in coordination with responsible government agencies, e.g. DPWH, LWUA, MWSS, NEA, MERALCO, DOH, PCUP, etc.

II. **Project Requirements**

A. For each project to be covered by the purchase commitment line, a project proposal must be prepared and submitted for evaluation according to the format prescribed by the NHMFC, or its equivalent.

B. Project proposal must be presented to HIGC for review as to cost and feasibility to determine:

   1. Cost of facilities/utilities/services
   2. Cost of land and land development
   3. Cost per type of housing unit.

III. **Financial Requirements**

If the community-based organization has the financial capability to finance on its own or to source the financing of the project, it shall show evidence of this capability and submit cash flow projections for the project. For government participants, evidence of funding commitment and authority to disburse the fund for this purpose shall be required.

If, on the other hand, the community-based organization does not possess the financial capability to undertake the project on its own, it should submit the financial requirement/sourcing of the project for funding purposes.

ANNEX D

PROCEDURES FOR PROCESSING COMMUNITY MORTGAGES

1. Check completeness of documents submitted as per the checklist of requirements which should be in two sets – one set on the left side of the folder, another set on the right side.

2. All photo-copies (xerox copies) are to be certified as true copies by either the president of the association (or the person so authorized in behalf of the association as per its board resolution) or by the authorized signatory of the originator.

3. The PCUP accreditation of the community association must be compared with the original certificate of accreditation.

4. The technical description on the title should indicate at least the name of the selling landowner, the area and location covered must tally with the area and location as per the letter of intent/agreement and the HIGC appraisal report and tax declaration.

5. The real estate tax declaration should bear the OCT/TCT no. of the property, name of the owner, area, classification of the land/site as residential; boundaries and location should tally with that of the title.

6. The real estate tax receipt should be for the payment of the current year's real estate tax and indicate the name of the owner and tax declaration no.; the assessed values and tax due must tally with that of the tax declaration.

7. If the land is classified in the tax declaration as other than residential, a conversion certificate from either the HLURB, DAR or city/municipal government should submitted.

8. The landowner's letter of intent to sell or the agreement with association to sell and for the association to buy should be notarized and include the following:

   a. Title number, place of registration, technical description, boundaries, area, tax declaration number of the land to be sold/purchased.

   b. The mode of payment for the land, either in cash upon completion of documentary requirements, letter of guarantee by NHMFC or escrow agreement pending completion of documentary requirements.

c. The sharing of expenses involved, like the execution of the sale contract, transfer taxes, registration of sale, etc. between the landowner and association.

d. Signature on all pages by the parties.

9. The master list of beneficiaries and loan apportionment shall indicate among others, the following:

   a. Name of beneficiaries, grouped as a household unit

   b. Block no. and lot no. and area assigned to each household unit

   c. Monthly income received – per certificate of employment and compensation if with employment, per income tax return if self employed, or per affidavit if with informal income.

   d. Loan entitlement of each beneficiary and with sub-total per household unit. The manner of computation shall be for beneficiaries with CEC or ITR, x 30; for those with affidavit only, x 20

      In case of beneficiaries with formal income, up to three beneficiaries related up to the second degree of relationship may tack-in per household unit. In case of those with informal income, any number can tack-in provided they are living together within the same household, but the creditable income per beneficiary shall not exceed P2,000 per month nor P4,000 per household.

   e. Apportionment of the total loan by household unit.

10. The totals of the household shares and the total loan amount should equal each other. The total loan entitlement should be at least equal to the total loan amount.

11. The monthly incomes appearing in the master list should be verified with either the CEC, ITR or affidavit of income.

12. The appraisal report of the HIGC should indicate at least the total appraisal value of the land, description, area covered, title no. and location. The loan amount value stated by the HIGC.

13. It is preferable to have a formal subdivision plan of the land. However, a schematic sketch of the property specifying the location and estimated lot area for each household will do. In both cases, there should be conformity in writing by the beneficiaries as to the lots allocated to them. Such conformity may be indicated in the plan itself if the number of beneficiaries

so warrant or in a separate document with proper description of the lots being assigned to them and attested by the president of the association.

14. The involvement warranty as per the prescribed form shall be in original and duplicate copies duly signed on all pages.

15. The Secretary's certificate as to the board resolution authorizing the purchase of the property, the application for a loan under the CMP and co-mortgaging the property shall be in original and carbon copies. The certificate should also specify the persons who are authorized to sign for the association as well as their positions. The certificate of residence of the beneficiaries of the land prior to February 25, 2986 shall be duly notarized.

16. The loan documents between the association and the originator, as per the prescribed forms, shall be signed by the parties on all pages. The loan agreement and the real estate mortgage shall contain the old title number of the land under the name of the owner and the new title number under the name of the association.

17. The deed of assignment by the originator in favor of NHMFC shall conform to the prescribed form and signed by the authorized signatory of the originator.

18. In all the documents above the amount of the community loan and assigned loan amount shall always be the same.

19. The computation of the life insurance premium on the life of the beneficiary to be designated as the principal borrower shall be P0.35 per thousand or a fraction thereof per month and shall be based on the loan allocated to the household of such beneficiary and the official receipt evidencing payment of at least 12 months coverage from the time of payment or issuance of the letter of guarantee by NHMFC. The master policy of the life insurance coverage shall be duly endorsed by the insurance company in favor of the NHMFC.

20. As a proof of the willingness of the beneficiaries to buy the land and to pay for the loans allocated to them, there should be proof of receipt by the association and deposit thereof, the equivalent of at least two monthly payments of the loan allocated to them. The said amount may be in the form of bank deposit and/or receipt by the landowner in case there will be a down payment to be made by the association.

21. The individual lease purchase agreement and the certificate of loan eligibility (for beneficiaries who are members of the SSS, GSIS or HDMF) may be submitted within 90 days from the issuance of NHMFC letter of guarantee

if there is a joint undertaking to that effect by the originator and the association.

22. The final/full payment for the land shall be effected by NHMFC if all the documentary requirements enumerated in Sec. 13.1 of CMP-001 are submitted and the title to the land transferred in the name of the association and the corresponding mortgage thereon annotated in favor of the originator are presented to NHMFC.

23. The code of by-laws shall contain among other things the provisions enumerated in Sec. 23 of NHMFC Corporate Circular No. CMP-001 dated April 17, 1989.

24. The processor shall certify that the documents reviewed are complete and reviewed as to authenticity and typographical accuracy (specifically as to the names, amounts, title numbers and technical descriptions of the property). This certification (in two copies) shall be attached to documents and returned to the originator.

25. The originator shall transmit to NHMFC, the documents either personally or by mail or delivery service for final processing.

MAJOR PROGRAMS OF THE NATIONAL HOUSING AUTHORITY

Rosauro Paderon
Officer-in-Charge
Project Technical Services Group
National Housing Authority

Pursuant to its new mandate under Executive Order No. 90, the National Housing Authority (NHA) was tasked to be the production arm of the National Shelter Program. The NHA was directed to focus its effort in providing housing assistance to the lowest 30 per cent of the urban income earners through its various programs.

By itself or in joint venture with other sectors, the NHA undertakes the following programs:

Sites and Services Program

This refers to the acquisition and development of raw land for low-income housing. The objective is the provision of service lots for low-income families as catchment areas for in-migration and population growth. Home lots are allocated to the beneficiaries where housing units can be constructed on self-help basis or through affordable housing finance.

The viability of this program rests on keeping development cost within the affordable range of low-income earners and the accessibility of the sites to economic opportunities.

Slum Improvement Program

The Slum Improvement Program entails the acquisition of depressed areas and on-site improvement of the land through the introduction of basic urban services. The land tenure is resolved through the sale of home lots to bonafide slum dwellers.

The concept is to provide an alternative to slum clearance and resettlement and to resolve the issue of squatting and slum dwelling. The slum condition is eliminated through the introduction of basic utilities such as roads and water system, drainage and other facilities. The squatter status is resolved through the award of home lots. The basic strategy is reblocking and improvement of dwelling units through self-help.

This program depends on effective community participation, provision of affordable basic services, availability of funds for land acquisition or a workable tenurial arrangement between the landowners and the occupants.

This program may be undertaken directly by the NHA or by local governments or through joint venture arrangement among parties.

Community Mortgage Program

What is CMP? The CMP is an innovative scheme in mortgage financing, wherein a tract of land may be acquired by a group of beneficiaries through the concept of community ownership of the land. The resolution of the land tenure through a loan from the National Home Mortgage Financing Corporation (NHMFC) enables urban poor communities/squatters to purchase the land they occupy.

The basic conditions under this program are: the community must be organized to avail of communal financing; and the landowners must be willing to sell their (unproductive) property at a negotiated price.

Once the land tenure issue has been resolved, the community can also avail of a developmental loan for the improvement of their area, such the provision of roads, and other basic utilities and services.

Home improvement loans can also be availed of by beneficiaries who are members of the SSS or GSIS or Pag-IBIG Fund. Individual families can qualify for housing loans on the collective family income provided the family satisfies the loan requirement of the lending institution.

(The CMP is discussed more thoroughly in a paper on page 17.)

Joint Venture Program

The Joint Venture Program is a strategy designed to maximize NHA's capacity to deliver housing units based on resource/expertise-sharing scheme with the local government, NGOs, landowners, developers and government agencies.

The general concept is to draw other sectors into the mainstream of low-income housing production through viable housing venture partnership.

The program is a joint venture undertaking and not a lending program. Resources, expertise, risk and profit are shared by the joint venture (JV) partners. Liabilities and exposure are limited to the extent of the partners' contribution.

The target market are families within the 50th percentile distribution of the income structure and those income earners residing in growth centers whose housing needs are not met by private developers.

The products are house-and-lot packages with selling prices within the affordability levels of the target market.

The primary role of NHA in the program shall be as provider of funds and/or land. Depending on the capability of the partner and the assistance being sought, NHA may act as the project manager, work engineer, arranger of developmental and buyer's financing, technical consultant and project facilitator.

The concept of profitability is based on high volume and fast turn-over to allow for lower margins and accommodate affordability levels of the target market. Fair profit is defined as direct cost multiplied by UHLP factor of 1.6, to make the project acceptable to the JV partner.

In JV projects, the house-and-lot package is tailored to the affordability of the target beneficiary. Lot sizes range from 60-150 sq m and the housing units, a shell structure, would have a floor area of 20 to 36 sq m. Unit cost ranges from P3,466 to 4,438 per sq m.

SSS-NHA Dormitory and Apartment Program

The NHA recognizes the need to alleviate the acute lack of dormitories, apartments and other residential buildings for rent to students and other temporary residents of Metro Manila and environs as well as in other urban centers in the country, in view of the rapid urbanization and unabated migration of families from the provinces.

The NHA, in line with its mandate of providing shelter to the greatest number, has in fact started a viable lending program for the construction of dormitories and apartment buildings sometime ago. This, however, had to be temporarily stopped due to lack of long-term funds for the purpose.

The SSS, a major contributor to the Unified Home Lending Program, in consonance with its thrust of assisting socially desirable projects, saw the need of providing funds to finance the development and construction of these dormitories and apartment buildings in order to cater to that segment of our society who can not afford to buy a house of their own.

To serve this particular group of students and other temporary residents in Metro Manila and other urban centers, NHA and SSS have agreed to join hands in starting and implementing a viable lending program for dormitories and apartment buildings. The SSS provided the long-term fund portfolio. The NHA administers the lending program, processes the papers and monitors the construction of the building.

This has encouraged private landowners, developers and entrepreneurs to put up buildings for rent. To-date the response and need for such a program is such that

the long-term fund has to be increased. Very soon, the GSIS may also join this very viable and very timely program to reach out and satisfy the needs of the people it seeks to serve.

Relocation and Resettlement

The provision of resettlement sites is undertaken to accommodate families displaced from danger areas and land needed by the government for its program.

The NHA has five resettlement areas, generally located within 35 km from Metro Manila. These are:

Name/Location	Area (Ha.)	Population	Density	
			Persons Per Hectare	Families Per Hectare
DBB, Cavite	463.19	42,717	92.22	15.37
GMA, Cavite	340.9	53,727	157.60	26.27
Bagong Silang Caloocan City	598	120,768	201.95	33.66
Sapang Palay SJDM, Bulacan	752.5	86,000	114.29	19.05
Bagong Nayon Antipolo, Rizal	179.05	24,078	134.48	22.41

In 1990 NHA introduced medium-rise housing as an inter-city relocation approach to address the squatting problem. Urban land is scarce and cost is very prohibitive. Medium-rise housing maximizes the use of the land by increasing density.

The Vitas Housing Project is one such example. The design was introduced by Architect Cesar Canchela. The project will produce 1,664 housing units of about 18 sq m at a direct cost of P3,888 per sq m. This project utilizes the box-stacking method of producing an additional 832 units almost for free.

Another medium-rise housing (four-storey) completed by NHA is the Domus Mariae Project on Estrada St., Sta. Ana, Manila. There are 176 housing units of about 18 sq m at a direct cost of P3,490.00 per sq m including the hall and stairways. This project used a building technology called "Andrews Panels," a type of prefabricated light-weight reinforced concrete panels.

In both medium-rise housing projects, special foundations were used because of the nature of the site.

THE DECENTRALIZED SHELTER AND URBAN DEVELOPMENT PROGRAM: NGO ENHANCEMENT SCHEME

Elpidio Damaso
Secretary-General
Housing and Urban Development Coordinating Council

Last week, I was in Nairobi to attend a meeting of six countries working on a program called "Shelter Strategies Formulation." The main theme of this program is the concept of government as an enabler and facilitator. From this meeting, it was apparent that most countries of the developing world have started to recognize the fact that most governments do not have the kind of resources needed to build houses for the people and that, in most cases, housing is really a secondary priority of most governments. This means that a new tack or strategy for delivering shelter to the people must by undertaken by most developing countries in the world. In that Nairobi meeting, the focus on government as enabler is the main theme. And I am happy to see this echoed in this workshop that you are now having. I seem to be one of the very few government people in this room and most of you are private practitioners. And this is the latest trend of thought — that government provides the milieu for the people — the beneficiaries and the NGOs — to be able to help themselves.

Along this line, I would like to report to you that there are two programs that are being undertaken. One is under the auspices of the USAID as part of the Decentralized Shelter and Urban Development (DSUD) grant that is being extended to the Philippines. Under this grant is a technical assistance portion. Last Friday, there was a signing of agreement between the United States government represented by the Ambassador and the Philippine government represented by Mr. Teodoro Katigbak and three lead NGOs who will undertake NGO training and enhancement and community organizing and development programs leading to completed Community Mortgage Program (CMP) projects in the country. This program has broken up the Philippines into three major geographic areas so that there is one NGO which you can relate to in your own geographic setting. We have the Philippine Business for Social Progress handling the whole of Luzon; the Ramon Aboitiz Foundation for the Visayas region; and for Mindanao, the Kauswagan sa Timogang Mindanao. (See Annex A for a brief description of the Ramon Aboitiz Foundation as a lead NGO for the DSUD Project in the Visayas.)

What are the responsibilities of the three lead NGOs? Well, basically, they are expected to prepare, enhance and strengthen at least 50 other NGOs involved in the CMP. In turn, the 50 NGOs are expected, within 18-24 months, to deliver CMP

programs in various stages of completion. In other words, they will not be all in the land tenure stage, but many may have moved on to the site-development stage or even the third stage which is house construction or enhancement. So that we hope to be able to put in place on a continuing basis at least 50 qualified, trained, strong NGO practitioners in the field. I think that the concept of CMP is a very good concept. We are now exporting the concept to other countries; we have one project with USAID in Nairobi which will use the same model for South Africa. Other countries are also looking at the CMP. It is a program that is better hailed outside the country than it is understood and accepted here. I think that in terms of enhancing the CMP program, the NGO enhancement program under DSUD will be a good start.

Aside from the training manuals and modules to be developed by the lead NGOs, there will be institution building and systems build-up of the NGOs. We envision some activity in terms of setting up accounting, financial and reporting systems within the NGOs to try to enhance the activities of the NGOs and at the same time focus on the real responsibility of community organizing. We hope that program should be in place by December.

This USAID program is basically a private sector activity. Government has not been made a repository of funds. The funds are made available directly through the three lead organizations.

On the other hand, it is also important that the government sector practitioners in housing delivery should have some understanding as well as to what they are supposed to do. And in this respect, we have a program as well under the United Nations Center for Human Settlements that we are piggy-backing. This is known as PHI 98-007, a project with the United Nations Development Program. It focuses most of the training programs on the government sector. As you can see, here we have two programs running parallel routes. On one side is the USAID program undertaking training, enhancement and strengthening of the NGOs and delivery of 200 communities as completed, successful programs. On the other are a corps of capable, committed government practitioners, including the CMP processors of NHMFC. This is where the other program comes in tandem. We hope that by the end of the exercise we will have two very strong sectors: one, the government sector cognizant of its role as enabler, facilitator, deregulator, decentralization expert. And on the other side, the beneficiaries, the NGOs looking at solutions for themselves. Because, let's face it, in the past five years that I have been in government, I have not noticed that any large budget has been directed at our sector. At best, less than 1/10 of 1 per cent of the National Budget goes to housing support. So, when you look at this particular situation of very little government support, but at the same time houses are being built, shelter is being provided, you get a picture that people are helping themselves. It is not government doing it for them but people helping themselves. This is the process that we want to enhance. Your consultation-workshop I think has its best results in terms of directions along this line — looking at what we can do for ourselves despite government.

By the middle of next month, we hope to be able to draw up the guidelines for the DSUD implementation. But again, I feel that the consultative process should really be enhanced here. There should be a consultation and participatory activity in terms of drawing this up. These guidelines should be brought to you, the NGOs, for you to tell us what is practicable and implementable and what is not; in terms of what problems that we can expect to encounter. You are the best people to say this. I hope that by mid-December, we would not only be ready with the guidelines but would have started to accredit the NGOs that will participate and that we would have complementary training programs both for the private sector, the beneficiaries, the NGOs and the government sector.

Thank you.

THE RAMON ABOITIZ FOUNDATION, INC. AS A LEAD NGO OF THE USAID'S DSUD PROJECT

by
Chito Mesa
President
Ramon Aboitiz Foundation, Inc.

We are honored to have been chosen by USAID to work in a field where we have no expertise. We have been designated as the lead NGO in the Visayas region for the implementation of the Decentralized Shelter and Urban Development (DSUD) project of the USAID.

However, we have been given the task of activating training and helping originators and NGOs. We have that expertise as we have been in community development for several years now. We are gaining expertise in crisis management and disasters. Currently, we are the lead group in Ormoc.

Our involvement in housing started in Pagtambayayong which has since ceased to be an originator. It was a very short association but we learned a lot from the experience. Now, we have been given by USAID with a grant of P4.5 million to activate 15 NGOs in the Visayas region. The selection of these 15 NGOs will depend on the needs survey which we will conduct in the Visayan region. We are tasked to do training for these NGOs, to fund their community workers, to provide a pool of experts to give them technical assistance, to come up with a training curriculum and to train the community in different aspects of handling credit.

Basically, the package of services we have to deliver has to do with training. We have to implement training programs on how to handle credit for the originators and the community on how to handle credit systems. We are expected to do these in 19 months, after which there should be take-outs.

RAFI's specific objectives are as follows: (a) to develop the capability of at least 15 NGOs and other originators in the Visayan islands in the CMP implementation which will involve community organizing and site selection, loan packaging and documentation, financial systems installations and other related activities; (b) to provide expertise and other forms of assistance in the other CMP phases such as site development, the provision of basic services, construction of houses and enterprise development; (c) to ensure the strong organization of the communities by the 15 NGO-originators which will result into 60 community groups with a good collection system, monitoring of payments and other post take-out requirements already in place; and (d) to establish a feedback mechanism incorporating recommenda-

tions from the NGOs and the LGUs not only for the redesign and refocus of the training modules and technology packages but also for instituting reforms or changes in CMP structures as well as guidelines and procedures for improved implementation.

We have been asked to describe briefly our work in this forum primarily because many of you may be interested in becoming originators in the DSUD project. USAID is trying to push from the other side now, that is, the NGO side. It has given money to the government but the money has not been flowing. USAID has, therefore, shifted focus and is now supporting the NGOs so that they may in turn help the community to gain access to development funds.

I hope to see you in the different cities when we start selecting the originators.

THE UNIFIED HOME LENDING PROGRAM OF NHMFC*

Just as we cater to members of the Social Security System (SSS), the Government Service Insurance System (GSIS) and the Pag-IBIG Fund under the Unified Home Lending Program, we have also set up a separate program for non-members. And this is what I would like to discuss with you this afternoon.

Who are eligible for assistance in this program? First of all, a beneficiary should not be a member of the SSS, GSIS nor the Pag-IBIG Fund. This means that an ordinary Filipino citizen can borrow from this program for as long as he has not availed of any housing loan from any of these funding institutions. Last, he should not be an owner of any residential unit either as a sole or a co-owner.

However, the program has a limited loan package. It offers financing of up to P180,000 unlike member-programs which offer up to P375,000. Inasmuch as the interest rate is still 9 per cent and we can extend up to the 100 per cent loan-to-value ratio provided it is accompanied by a warranty or upon payment by the originator of a one-time credit insurance fee of 2 per cent of the loan. With regards to income, we distinguish between formal and informal income earners. This is because we believe that there are non-members who earn a formal income but still qualify for the program. For formal income earners, the income multiplier is 30 times, as certified by their employers. We also require them to submit income tax returns. For self-employed borrowers, they can borrow as much as P40,000 per borrower. However, they can get as many co-borrowers as there are income earners within the household to avail of the maximum P150,000. All they have to do is to execute an affidavit; we don't require an income tax return nor any certification (See Annex A).

That, in brief, are the major features of our program for non-members of the SSS, GSIS and Pag-IBIG.

Aside from our regular programs, the NHMFC has the Community Mortgage Program (CMP) and more recently the Socialized Housing Developmental Loan Program (SHDLP) which is geared towards low-cost housing. Under this program, any developer catering to low-income households is eligible to borrow funds at subsidized interest rates — 12 per cent for those packages not exceeding P120,000 and 14 per cent for those loans not exceeding P150,000.

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* Transcription from an oral presentation by Joselito Salita, Senior Marketing Specialist, NHMFC, in the Manila Consultation workshop. The UHLP Program was also discussed in the Davao forum by Ms. Vilma Salazar, Regional Coordinator of NHMFC for Southern Mindanao.

ANNEX A

UNIFIED HOME LENDING PROGRAM FOR NON-MEMBER OF SSS, GSIS OR PAG-IBIG: FAST FACTS

1. **Borrower Eligibility** - A borrower shall satisfy the following requirements.

   1.1 Must not be a member of any of the following institutions: SSS, GSIS or HDMF.

      a. A certificate to this effect shall be issued by the borrower.

   1.2 Has not availed of any housing loan from any of the three funding institutions either as a principal or a co-obligor.

   1.3 Does not own a residential unit in the capacity as sole owner or co-owner.

      a. If, in the course of investigation, it shall be discovered that the borrower owns a residential unit, the loan shall be declared due and demandable.

2. **Loan Purpose** - The loan may be used to finance any of the following:

   2.1 Purchase of residential lot only

   2.2 Purchase of a lot and construction of a new house or dwelling unit

   2.3 Purchase of a newly constructed residential unit or over one year old, on a first occupancy basis

   2.4 Purchase of an existing residential unit previously foreclosed by the SSS, GSIS, DBP, NHA and other government financial institutions

   2.5 Construction of a new house or dwelling unit

   2.6 Construction of a new house on a lot previously acquired and finance by a loan from SSS, GSIS, HDMF or NHMFC

   2.7 Construction and/or purchase of a house located within reservations area

3. **Loan Package** - The program offers one type of loan package:

LOAN AMOUNT	INTEREST RATE	LOAN TO VALUE RATIO W/OUT	LOAN TO VALUE RATIO WARRANTY WITH	PAYMENT OF 2% CI
Up to P150,000.00	9%	90%	100%	100%

Affordability ratio - the resulting monthly amortization shall not exceed 33.33 per cent (1/3) of the income base.

4. **Maximum Loanable Amount** - The amount of loan base on income shall be determined in any of the following manners:

   a. For employed beneficiaries (formal income), the loan amount shall not exceed 30 times the allowed income base consisting of the borrower's monthly basic salary plus all allowances forming part of the compensation received regularly every month by the loan applicant as based on the latest income tax return.

   b. For self-employed beneficiaries (informal income), the loan amount shall not exceed 20 times the borrower's monthly informal income (herein defined as income derived not from salaries or wages), which shall be determined on the basis of the borrower's declaration through affidavit of income duly checked and verified by way of interview and collateral investigation conducted by the originating institution; provided that the maximum amount of the monthly informal income shall not exceed P2,000 per household member and P6,000 per household family.

      In case the total income of the non-member borrower(s) is not sufficient to meet the requirements of the loan applied for, any member of the SSS, GSIS or HDMF who has not availed of a housing loan from any of the said institutions and who does not own or co-own a residential unit may be included as a co-borrower of the non-member borrower, in which case the joint loan becomes a non-member loan.

   c. The number of borrowers for a tacked-in-loan may be increased to as many as there are borrowers, provided that they are related up to second civil degree of consanguinity or affinity and are living in the same household.

   d. The maximum amount of tacked-in loans shall be P150,000 for a house and lot package, and P45,000 for a home lot.

5. **Loan Period** - The loan period shall not be more than 25 years and shall in no case exceed the difference between present age and 70th year of the principal borrower. No loan shall be granted to a borrower who is more than 65 years old at the time of delivery of his documents to NHMFC.

6. **Loan to Value Ratio** - The amount of loan which may be granted to the borrowers shall not exceed 90 per cent of the appraised value of the collateral; however, the amount of loan that may be granted to borrowers can be as much as 100 per cent of the appraised value of the collateral if it is accompanied by a warranty or upon payment by the originator of a one time credit insurance fee of 2 per cent of the loan.

7. **Collateral** - The loan shall be secured by collateral consisting of the very same residential properties in which the proceeds are applied or used.

   7.1 The security shall consist of a first real estate mortgage on the aforesaid property fully covering the payment of the obligation as stipulated in the corresponding loan agreement and promissory note of the borrower.

   7.2 The borrower must have the absolute right to validly constitute the first mortgage and/or full authority to do so.

8. **Loan Charges**

   8.1 All member housing loans shall be charged the normal fee and expenses in accordance with the schedule provided for by law, but not limited to registration expenses and notarial and documentation expenses.

   8.2 Insurance - Premiums for mortgage redemption insurance and fire insurance shall be prepaid annually by the borrower.

9. **Collection Servicing** - Borrower's amortization payments shall be undertaken by any accredited collection bank or financial institution or representatives authorized or designated by NHMFC.

10. **Loan Payment** - The loan shall be amortized in equal payments in such amounts as may fully cover the principal and interest over the term or period of the loan.

11. **Default** - The borrower shall be considered in default, among other instances as stipulated in the loan agreement, when there is failure to pay any three monthly amortization and other loan obligations as stated therein. In the event of default, the outstanding loan balance and all accrued interest, fees, charges and penalties shall become due and demandable.

12. **Origination** - A borrower may apply for the loan through any accredited institution or developer.

13. **Insurance** - The borrower shall be compulsorily covered by the mortgage redemption insurance (MRI) and fire insurance.

13.1 Mortgage Redemption Insurance (MRI) - The borrower shall be covered by the MRI under the automatic coverage system of an insurance pool. The insurance amount and premium shall be in accordance with the schedule in the master policy.

13.2 Fire Insurance - The borrower shall obtain through NHMFC fire and allied insurance on the property mortgage for an amount equivalent to at least the loan value of the dwelling unit and/or improvements.

13.3 Premium Payments - the premiums on the aforesaid coverage shall be prepaid annually by the borrower.

THE PAG-IBIG PROGRAM OF HDMF*

The Pag-IBIG Fund is actually the Home Development Mutual Fund. It is otherwise known as "Pag-IBIG" for immediate recall. It stands for "Pagtutulungan sa Kinabukasan - Ikaw, Bangko, Industriya, Gobyerno."

The Pag-IBIG Fund is a government corporation administering private workers' funds. Initially, GSIS and SSS members were automatically members of the Fund, too. But as of 1987, Pag-IBIG became a voluntary fund. So, from the original 2.1 million members, Pag-IBIG is now down to about 900,000 members. Today, the membership is picking up because we are formulating housing benefit packages for its remaining members.

The Unified Home Lending Program (UHLP)

The linchpin of our home lending programs is the Unified Home Lending Program or the UHLP which is implemented by the National Home Mortgage Finance Corporation (NHMFC). Pag-IBIG is one of the funders of the UHLP, the others being the Social Security System (SSS) and the Government Service Insurance System (GSIS). This means that any member of SSS, GSIS and Pag-IBIG can avail of a housing loan from UHLP, purchase a lot and construct a house or purchase a house-and-lot package. He should have an income from some verifiable source — whether formal or informal. It is also understood that the member does not own a housing unit nor have availed himself previously of any housing loan from any of the UHLP funding agencies. Three grades of interest rates prevail: 9 per cent for loans up to P150 thousand; 12 per cent for loans from P150 to P225 thousand; and 16 per cent for loans from P225 to 375 thousand. The maximum amount for lot purchase is P45 thousand. Loans are long-term up to a maximum of 25 years. (More discussions on UHLP may be found on page 41.)

The Expanded Housing Loan Program (EHLP)

Although Pag-IBIG founded the UHLP, we found out that very few Pag-IBIG members were benefitting from the program. Thus, in 1988, Pag-IBIG launched its own housing program called the Expanded Housing Loan Program or EHLP. EHLP is a derivative of the UHLP, except that it has added features to respond more adequately to the needs of the Pag-IBIG members. Because of the present voluntary nature of the Fund membership, we felt that we had to give maximum benefits to our members.

*The Pag-IBIG Program was presented by Ms. Ma. Cristina Reyes in the Consultation-Workshop held in Manila; by Manuel Crisostomo in Cebu; and by Noli Armada in Davao. This paper integrates the three presentations.

There are about seven purposes for which a Pag-IBIG member may avail of a housing loan: acquisition of a lot; acquisition of a house-and-lot package; construction of a house on a lot owned by the member; combination of lot purchase and house construction; home improvement loans; re-financing and redemption of housing mortgages for members with financial difficulties; and combination of re-financing and home improvement loans.

How can a member avail of a housing loan? First of all, he must be a member of Pag-IBIG for at least six months; he must have given a total of 12 months contributions; he must have legal capacity to contract a loan; and he must not have availed of Pag-IBIG housing loan either as principal or co-borrower.

How much can a member borrow? We do not look at the income tax anymore but rather at the amount of contribution of the members. And then we compute the loanable fund by multiplying a member's Fund salary which is made up of the basic pay plus the cost-of-living allowance by 46 for members with employer counterpart contributions or 36 for those without employer counterpart. The maximum loan amount is P230 thousand for a single borrower and up to P375 thousand for one with a co-borrower. Interest rates follow those of UHLP. The rates for home improvement, refinancing and redemption are slightly higher.

This is basically the traditional role that Pag-IBIG is doing — providing long-term mortgage financing.

In our implementation of EHLP, we network with banks. A lot of people are asking why we have to network with banks which charge higher interest rates and impose stringent requirements. We network with banks in order to reach as many members as we can. If Pag-IBIG will do all processing on its own, we are likely to be slow in delivering the housing units to our members. Another reason is for check and balance whereby banks provide the warranties while we process the documents and check whether these are in order. In an effort to bring down the cost of home acquisition, we are paying the banks a two per cent origination fee which will take care of the processing fees. However, we have not been able to reduce costs for notarization and registration expenses which form the bulk of expenses in acquiring a house and lot. Nevertheless, we have been telling the banks that if they have to charge filing fees, they should refund it to the member once they receive the origination fees from Pag-IBIG. We have also asked our banks to limit the charging of appraisal fees to P500 per unit.

On the other hand, Pag-IBIG has also opened its direct lending window in areas where there are limited originating banks. This means that we are now lending directly to our members rather than coursing the loans through originating institutions. For many areas in the Visayas and Mindanao, we are now accepting loan applications for housing and processing these through our regional offices.

(For details on how to avail of the housing loan programs, see Annexes A and B.)

The Socialized Housing Developmental Loan Program (SHDLP)

Pag-IBIG would not want to limit itself to just waiting for members to go to our banks. So we decided to make available to developers cheaper funds in order to encourage them to develop low-cost housing projects. We have, therefore, set up the Social Housing and Development Loan Program (SHDLP) which Pag-IBIG directly administers. In other words, we directly process the loans of the developers rather than course these through originating banks.

The main objective of this program is to encourage private developers, NGOs and local government units to combine their resources in providing affordable housing units. And so the financing mechanism is actually a direct loan to the developers.

As mentioned earlier, under the program, we consider housing packages of P150 thousand and below as low-cost. We can fund land development and house construction on a fully-developed project site. We have eliminated acquisition because we want to be able to service more developers. The amount of loan that we can get is P10 million. Some say that this is just a minimal amount but since our thrust is to provide funding to as many developers as possible, we peg it initially at P10 million. We are talking of a five to eight-ha project site generating about 200 units on the average. The interest rate is largely based on the selling price of the packages which will be generated. If developers will come up with housing units of P80 thousand and below, we charge an interest rate of 12 per cent; for units costing over P80 thousand up to 120 thousand, 14 per cent; over P120 thousand to 150 thousand, 16 per cent. For those units costing over P150 thousand, we charge 19 per cent. If developers like to develop packages combining all these selling prices, we charge them a weighted interest rate (usually 15-16 per cent). The loan is paid over a period of 24 months, with a one-year grace period.

We are allowing developers to construct houses over P150 thousand provided these will not exceed 40 per cent of the total number of units to be generated. This is because we want to retain the low-cost feature of the program.

In the same manner, we are requiring that 60 per cent of the project beneficiaries be Pag-IBIG members. In our implementation of most of our projects, we are geared towards a benefit package exclusively for members. But in this particular case, we go for a 60:40 ratio.

We treat the program on a project-to-project basis. We have made the guidelines as flexible as possible so that individual developers or NGOs can come up with their own schemes. We then study the proposals and in many cases, we have allowed certain deviations from the fixed guidelines. We really want to accommodate new ideas and new combinations which the developers and NGOs may be proposing.

We have about 15-18 projects under this program in the pipeline generating about 3000 units. In the meantime, our head office is processing loans, including those from the regions. However, we expect to farm out processing to the regional offices starting 1992.

We are also lending to different employee groups as well as employers not just for housing loans but also for rental housing. For example, we are putting up buildings in military reservations which are government property and, therefore, cannot be sold and these will be rented out to military personnel. Similarly, we have also granted a loan to the University of the Philippines for the construction of faculty housing which will be rented out on a long-term basis to UP faculty and employees.

(More details about SHDLP are given on Annex C.)

These are basically the low-cost housing projects of Pag-IBIG Fund. There are other projects which we are implementing.

The Group Land Acquisition and Development Program (GLAD)

One of these is the Group Land Acquisition and Development Program or GLAD. GLAD is similar to the Community Mortgage Program (CMP), except that GLAD is directed mainly to members of Pag-IBIG who are gainfully employed and not really squatting on private property. Through this program, we are shifting the initiative from developers to employees or members of groups. This is very relevant for areas which developers are reluctant or do not find economically viable to serve.

Under GLAD, 30 per cent of the loan may be used for land acquisition; 20 per cent for site development; and the remaining 50 per cent for construction of houses. We have one such program in La Union and hopefully another one for the University of the Philippines Housing Cooperative. For UP, we are still in the stage of identifying the site for the project and so it is taking a while. This is usually the hardest part — identifying a project area acceptable to all members.

Pag-IBIG is now increasingly focusing on group accounts. This means that we are not limiting ourselves to extending loans on a retail basis. Rather, we are now targeting corporate employers, organized groups, associations and cooperatives. We feel that we can accelerate delivery of service through servicing of group accounts. Corporate employers can provide subsidies, e.g. provide project sites. We've done this with Marsman Estate Plantation in Davao. We hope other companies will be encouraged to come up with similar housing programs for their employees.

(See Annex D for other features of the GLAD program.)

Pag-IBIG Membership for the Informal Sector

How do GLAD and other Pag-IBIG programs address the needs of low-income groups who may not members of Pag-IBIG right now? We have begun to be flexible in terms of membership guidelines. We are now opening Pag-IBIG to farmers, fishermen, market vendors, jeepney drivers and others with informal incomes. This will be done through cooperatives, trade associations, etc.

Contributions will be collected and remitted through these groups. Loan programs shall be designed according to the needs of each group or association. We are exercising maximum flexibility in meeting the needs of the groups not regularly employed. We expect that they can eventually fit into the GLAD program. The guidelines for membership have just been released and it will take at least six months before they can avail of housing benefits. And of course, there is the provident feature of the Fund wherein, if you are a member, the government provides a counterpart share. So, there is a "double-your-money" benefit. And of course, we are paying dividends — 7.5 fixed dividend and 2.5 variable dividend.

So these are our main considerations when we implement programs. Upon maturity of the membership, we would like to give back to our members what they contributed plus dividends.

ANNEX A

STEPS IN AVAILING OF A PAG-IBIG HOUSING LOAN

1. Secure information and checklist of basic loan requirements from the Pag-IBIG head office in Makati or from any of its regional or extension offices nationwide.

2. Secure a certificate of loan eligibility (CLE) from any of the Pag-IBIG offices nationwide.

   *Note: To secure a CLE, the borrower must submit a certificate of remittance reflecting at least his latest 12 monthly contributions, and duly signed by the authorized signatory.

3. Secure loan application forms any of the Pag-IBIG accredited banks.

4. Go to the originating bank for counselling, particularly those pertaining to terms and conditions, final requirements as well as the procedures in accomplishing the same. Checklist of requirements may vary according to loan purposes.

5. File loan application with any of the Pag-IBIG accredited banks for processing.

   * Upon completion of the requirements, the originating bank approves the loan on a turn-key basis or extends interim or bridge financing.

   * Under the turn-key arrangement, the originating bank does not advance the release of the loan proceeds/portion of loan proceeds to the borrower.

   * Under the interim financing arrangement the originating bank approves an interim loan and releases its own funds to the borrower either as payment for the lot and/or house construction, or home improvement. This arrangement is covered by a separate agreement between the originating bank and the borrower.

   * Upon completion of the house/home improvement and completion of the pertinent loan/mortgage documents, the originating bank sells/turns over the mortgage documents to the Pag-IBIG Fund.

   * After purchase of the mortgage by Pag-IBIG, the originating bank releases the proceeds of the housing loan in favor of any of the following:

     a. the originating bank which provided interim financing

     b. the unpaid vendor of the lot or house and lot

c. the borrower who used his personal funds for house construction or payment of the house and lot.

6. Pay your loan amortization through the originating bank which processed your loan application or directly to the Pag-IBIG Fund.

CHECKLIST OF REQUIREMENTS FOR PAG-IBIG EHLP

Basic Requirements

1. Pag-IBIG housing loan application forms (from participating bank)
2. Two 2"x2" ID photos of each borrower
3. Residence certificate and tax account no. of each borrower
4. Birth certificate of borrower
5. Certificate of loan eligibility (from Pag-IBIG head office)
6. Photocopy of the land title (TCT/OCT/CCT) presented as collateral
7. Tax declaration and tax receipts or tax clearance
8. Certified location plan of lot
9. Medical questionnaire for loans over P150,000; medical examination for borrowers over 60 years old
10. Special power of attorney (if applicable)

Additional Requirements

1. For purchase of house-and-lot package loans
   * Occupancy permit with certificate of completion from municipality/ city government (for new units)
   * House pictures (rear, front and side duly signed at the back by the appraiser and borrowers)
   * Building permit
   * Certificate of house acceptance
2. For house construction/home improvement loans
   * House pictures (rear, front and side duly signed at the back by the appraiser and borrower/s. For home improvement loans only.)

* Bill of materials
* Building permit
* Building plans and specifications
* Certificate of house and lot acceptance (only for house construction that is not self-administered)

3. For lot purchase loans

   * Proof of obligation (payment of lot balance, if applicable)

   * Certificate of lot acceptance

4. For redemption of foreclosed property/refinancing

   * House pictures (rear, front and side, duly signed at the back by the appraiser and the borrower)

   * Updated statement of account (from the financial institution where the original loan was acquired)

ANNEX C

SALIENT FEATURES OF THE SOCIAL HOUSING DEVELOPMENTAL LOAN PROGRAM (SHDLP)

Objective

The objective of the Pag-IBIG SHDLP is to encourage private developers, non-governmental organizations, landowners and local government units to combine their resources in providing affordable housing units.

Financing Mechanism

Direct loan by Pag-IBIG Fund to developers/project proponents.

Loan Purposes

Financing of housing projects generating house and lot packages not exceeding P150,000. Loan shall be used exclusively for:

1. Land development and house construction
2. House construction on a fully developed project site.

No part of the loan shall be used to acquire land or pay off any lien thereon.

Amount of Loan

Maximum P10 million per project phase shall be available per developer/ proponent. Future availment may be made only upon full liquidation of any outstanding balance from prior availment.

Rate of Interest

Based on the selling price of house and lot packages as follows:

Selling Price	Interest Rate
P80,000 and below	12% p.a.
over P80,000 - P120,000	14% p.a.
over P120,000 - P150,000	16% p.a.
over P150,000	Prevailing interest rate for the Pag-IBIG Developmental Loan Program coursed through banks.

Terms of Availment

1. *Loan to Collateral Ratio*

Loan shall be adequately secured by a first real estate mortgage (REM) on the project site and all improvements thereon.

Initial release shall be equivalent to 50 per cent of appraised value of the land and improvements thereon, if any.

Subsequent release shall not exceed 80 per cent of appraised value of the collateral.

Partial release of collateral shall be allowed subject to 80 per cent loan to collateral ratio.

2. *Minimum Equity*

20 per cent of the total project cost, which should be in place on or before the sixth month from date of initial loan release or before take-out of eligible mortgages whichever comes first.

3. *Maturity*

Payable over a maximum period of 24 months from date of initial release.

4. *Loan Release*

In accordance with the approved cash flow projection of the project.

5. *Selling Price of House-and-Lot Packages*

House-and-lot packages with selling price over P150,000 shall not exceed 40 per cent of the total number of units for the project.

6. *Minimum Physical Development Required*

Land development and house construction must conform with the minimum requirements of Batas Pambansa 220.

7. *Loan Payment*

Interest

Shall commence at the end of the first quarter from the date of initial release, quarterly interest payments thereafter.

Principal

Less than Two-Year Term – Due on or before the sixth month from date of initial loan release monthly payment thereafter.

Two-Year Term – Due on or before the 15th month from date of initial loan release; monthly principal payments thereafter.

At least 20 per cent of take-out proceeds shall be applied as payment to the principal subject to the 80 per cent loan to collateral ratio.

Applicable Housing Loan Guidelines

The housing loan guidelines under the Unified Home Lending Program as incorporated in NHMFC Corporate Circular No. UHLP 001 and corresponding amendments thereto shall be adopted in the individual members housing loan applications.

Project Beneficiaries

At least 60 per cent of the total house and lot packages should benefit Pag-IBIG members.

SALIENT FEATURES OF THE PAG-IBIG GROUP LAND ACQUISITION AND DEVELOPMENT (GLAD) PROGRAM

Objective

The GLAD Program aims to provide financial assistance to organized groups of at least 20 Fund members for the acquisition and development of raw land or partially developed land which shall serve as the site of their housing units.

Financing Mechanism

Direct loan to the member-beneficiary/employee group or community association for land acquisition and site development. Loans for house construction shall be coursed through originating banks or Pag-IBIG in accordance with the Pag-IBIG guidelines on additional loan for house construction.

Eligibility Requirements

Registration of the employee-groups or community associations with the proper agencies which will vest them with legal personality (SEC, HIGC or Bureau of Cooperative Development). All members of the group must be active Pag-IBIG members and eligible for loans under the EHLP at time of loan availment.

Loan Terms

1. *Loan Amount*

   Total loan shall be aggregate of the amounts extended to the individual member-beneficiaries per EHLP guidelines.

   An individual may draw up to 30 per cent of his loan entitlement for raw land acquisition; up to 20 per cent for land development; and the remaining 50 percent for house construction.

   For acquisition of partially developed/developed land, the individual beneficiary may draw a maximum of 50 per cent of his loan entitlement.

2. *Interest Rate*

Based on the individual beneficiaries' total loan entitlement, in accordance with prevailing rates of the Pag-IBIG EHLP guidelines at the time of loan availment.

3. *Loan to Collateral Ratio*

The loan shall be secured by a first real estate mortgage (REM) on the land itself and all improvements thereon. The loan amount shall not exceed 90 per cent of the appraised value of the collateral.

4. *Loan Releases*

a. For raw land acquisition

Released in full, subject to either the loan-to-collateral value ratio of 80 per cent, the actual need or the approved loan, whichever is lower.

b. For land development

Made on a staggered basis within two years from date of initial loan release, depending on the work progress. An initial mobilization fund equivalent to 10 per cent of the appraised value of the collateral shall be released for site development. Subsequent progress releases shall be subject to a 90 per cent loan-to-collateral value ratio, provided that there are no arrears in loan amortization payments.

c. For house construction

May be availed of individually after completion of site development and issuance of individual titles to member-beneficiaries.

5. *Loan Payments*

a. Interest

Shall commence one month from date of initial release; monthly payments thereafter until loan maturity.

b. Principal

For projects up to site development only, shall commence not later than the 25th month from date of initial loan release or one month after final release for site development, whichever is earlier; monthly payments thereafter until loan maturity.

For projects which include house construction, shall commence not later than the 25th month from date of initial loan release, or one month after final release for house construction, whichever is earlier; monthly payments thereafter until loan maturity.

6. *Mode of Payment*

   a. By the employee-group/community association through collection from individual member-beneficiaries, until the mother title is individualized and individual promissory notes are executed by the beneficiaries in favor of Pag-IBIG.

   b. By the individual member-beneficiaries once individual promissory notes are executed.

   In both cases, remittance shall be made directly to Pag-IBIG.

7. *Loan Period*

   Payable over a maximum period of 25 years but in no case to exceed the difference between the present age reckoned from the borrowers' nearest birthday and his 70th year.

8. *Penalty Condonation*

   Failure to pay the loan obligation when due shall subject the borrower to a penalty charge equivalent to 1/10 of one per cent of any unpaid amount for each day of delay.

9. *Insurance*

   a. Mortgage Redemption Insurance (MRI)
   b. Insurance for fire and other allied perils, mandatory upon availment of additional loans for house construction

10. *Default*

    Failure by the employee-group/community association to pay any three consecutive monthly amortization and other loan obligations shall constitute default. Likewise, after individual titles have been issued, failure by member-borrower or his co-borrower to pay any three consecutive monthly amortization and/or monthly membership contributions and other obligations on the loan shall be considered a default.

11. *Effect of Default*

    In the event of default, the entire loan outstanding together with the accrued interest, charges, fees and penalties shall be due and demandable.

THE COOPERATIVE RURAL BANK OF DAVAO: HOME FINANCING EXPERIENCES

Josefito Guillermo
Cooperative Rural Bank of Davao

Low-income people generally shy away from banks. They find non-formal sources like cooperatives easier to approach. This is the basic reason for the setting up of the Cooperative Rural Bank. We have been financing housing on a self-reliant basis since 1967 as a cooperative. In 1983, we joined other cooperatives in Davao to form the Cooperative Rural Bank. As a cooperative bank, we were able to go into bigger housing ventures with the help of the National Home Mortgage Finance Corporation (NHMFC) and also as a conduit of the Cooperative Housing Foundation.

In the bank, we have few rules to follow. When a group of people come to us wanting to get financing for acquisition of lots, we finance them on the interim. As a matter of fact, we gave Davao Independent Housing Foundation (DIHo) a developmental loan without collateral after it was denied loan facility from the Development Bank of the Philippines.

When we began in 1983, part of our loan portfolio was set aside for all aspects of housing. Since then we have financed about P50 million. And as an accredited bank of NHMFC, we help low-income groups with the preparation of their loan documents to be forwarded to NHMFC. We have also tried to be accredited with Pag-IBIG but were turned down for being a small bank. So we stick to NHMFC. However, if our proposal with the Cooperative Housing Foundation (See page 103 for detailed information about this Foundation's activities.) will push through for a $5 million revolving fund, then we can increasingly provide for the housing needs of low-income people. Cooperative banks are usually biased against big housing loans of P250 thousand or more. We cater to low-income housing applications from P150 thousand and below. However, we prefer to finance developers wanting to put up mass low-cost housing in joint venture with the bank.

We send loan papers to NHMFC, with which we have a line. It used to take NHMFC 60 to 90 days to process loans. Lately, processing time has become erratic. Sometimes, it takes longer; sometimes shorter. It is difficult to control processing time.

Low-cost housing is principally all about financing, money. Funds will only earn interest of about 6 per cent per annum from its source. But if banks like us can lend it to developers, it can earn a 2- to 3-per cent spread. And once the money is lent out to them, they have only 30 days to construct the units. The bank will then

rediscount it and endorse the papers to NHMFC for take-out. Once taken out, the fund is again replenished. Of course, the main problem of banks is collection. We can finance anything from small houses to big houses; but we should know how to collect and collecting on time is always a problem. This is why some banks shy away from low-cost housing financing; they are afraid they will not get their money back. This is also NHMFC's problem. More often than not, mortgage take-out is delayed because there is no money; it has to get subsidy from GSIS, SSS, etc. NHMFC has this problem because it has authorized only government banks like DBP and PNB to collect from them. If it authorizes other banks and NGOs to collect for them, then the problem of cash flow will be eased. On the developers' side, they need immediate cash assistance so that they can purchase materials in bulk on cash basis and consequently reduce cost of their housing units. As you know, cost of materials takes up most of the developers' funds. The banks have already a fund for that. Of course, with the help of NHMFC, this should not be a problem.

Whereas we used to be a rural bank, we have recently been converted into a cooperative rural bank. We are now operating in a different kind of banking system whereby the bank is owned by the cooperatives and NGOs. Our vision is to put up not only housing but a whole community. Most developers develop land and put up houses close to one another so that the houses look just like squatter dwellings. Our vision is to develop a community that is ecologically balanced and self-sustaining. We envision a common garage, a common waste disposal system as well as livelihood projects. In the event that the beneficiary fails to pay the loan, the cooperative can come in and pay the loan and in turn sell the property to others in the community. That is our vision. We have targeted two market segments for that — one among the doctors; another among the squatters. The cost will be less than what it used to be, because the units will be a condo-apartment type. There will be a lot of trees; the community will have a common sewer system that can produce bio-gas. This is how we will develop communities rather than just houses.

It has been our experience in the past that more than 50 per cent of individual borrowers do not pay their loans with NHMFC. More often than not, the housing units are being sold to others who will then pay off the loan. And so the objective of providing homes for the poor is defeated. We follow basically the same procedures of an ordinary bank, but with less paper work. Whether or not you are a member of SSS, GSIS, etc., we want to serve you, especially if you belong to a cooperative and to the low-income group. As of now, we have a P40 million line with NHMFC and we have to deliver that before the elections (in May 1992). We are trying to generate savings deposits from the public, part of which will be channeled to low-cost housing. With or without assistance from the government, we are determined to proceed with our program.

EXPERIENCE OF THE FIRST CONSOLIDATED RURAL BANK IN HOME FINANCING

Alfonso Uy
Chairman
First Consolidated Rural Bank Foundation, Inc.

We started with 14 rural banks in Cebu who agreed to consolidate. The consolidation was promoted by then Central Bank Governor Juan Laya. We organized the 14 rural banks about to be dissolved into what is now known as the First Consolidated Rural Bank of Bohol. We had a difficult time in the first two years. The former presidents of the rural banks became mere stockholders, with only a few being elected to the board. In the next two years, we were able to correct the deficiencies that we had. We started to make money on the fifth year.

When we started to make profit, since our mission for consolidation was really to help develop Bohol, we organized the FCRB Livelihood Foundation. Two years after, we organized the Bohol Health Foundation. After this seminar, we might organize a housing foundation.

In the province of Bohol, especially in Tagbilaran City, we really feel that there is a need to support the poorest of the poor. Thus, we envision putting up houses for squatters which will cost between P10-30 thousand.

As a conduit or accredited bank for Pag-IBIG/UHLP, our bank gives out bridge financing. The advantage is that when we process the loans and we find out that they are qualified, we approve and give out the loan and then sell it to Land Bank or Pag-IBIG. We charge the ordinary commercial rate of 25 per cent. Although we charge commercial rates, a little higher than the housing rate, it really comes out cheaper because the borrowers can buy construction materials in cash which is often cheaper than purchasing on credit.

We have plans to branch out to other places because we are now allowed to branch out outside of Metro Manila, Cebu and Davao City. We plan to go to Mandaue, then Dumaguete and Cagayan de Oro. We intend to promote consolidation in those provinces. As of now, we are the only bank that has been consolidated. Modesty aside, we started with a net worth of P3.6 million and we now have P46 million; and from a start of resources of P34 million, we now have P300 million. When we were still individual banks, the biggest member can only extend P200 thousand in loans. As of now, we can extend up to P7 million pesos to a single borrower. This is one of the advantages of consolidation. We are now accredited on almost all bank operations like short, medium and long-term loans. The only thing we are not allowed to do is foreign transactions.

MONITORING THE GOVERNMENT'S SHELTER PROGRAM THROUGH PEOPLE'S PARTICIPATION: FOCUS ON NGOs

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First I will give you a brief background of the research study, then go into a short description of the National Shelter Program and finally present the findings and recommendations of the study.

In 1988, the United States Agency for International Development (USAID) requested the Management Education Council of the University of the Philippines (MEC, UP) to come up with projects which will encourage and eventually institutionalize citizen's participation in the implementation of its various development programs and projects. We responded with a study entitled "The People's Participation in Assessing the National Shelter Program Focusing on the Role of NGOs."

Specifically, the study has the following objectives: (1) to assess the government's implementation of the National Shelter Program for the period 1987-88 with focus on the program for the lowest 30 per cent of the population; (2) to identify and evaluate the systems used by non-government organizations and people's organizations in monitoring the NSP implementation; and (3) to recommend ways of institutionalizing the private sector's role, especially the non-government organizations (NGOs) and people's organizations (POs) in monitoring the program.

To comprehensively analyze the problems facing the housing sector and make relevant recommendations, several methodologies were used.

First, an extensive review of research papers, journals, periodicals, legal documents, housing reports and other articles was made.

Secondary data obtained from this literature review were validated through interviews and agency/field visits of various housing entities and projects. Additional information was sought from government organizations (GOs), NGOs and POs with housing related concerns. Activities of urban poor groups and agencies were also observed.

A third source of data came from three workshops organized by the project and participated in by members representing a cross-section of sectors involved in or affected by the housing problem. These workshops addressed housing issues from the viewpoint of the three major sectors — namely the GOs, NGOs and POs.

The National Shelter Program: Brief Description

Executive Order 90, promulgated on December 17, 1986, launched the National Shelter Program or the NSP. Its objectives are three-pronged. Firstly, it aims to make shelter affordable and accessible to everyone. Secondly, it hopes to develop and sustain its institutional capability in managing and generating the needed funds for the program. Lastly, it encourages private sector participation in housing finance and production.

Based on the estimated housing need of 3.4 million units for the country in 1987-92, the construction of only 39 per cent or 626,879 units will be given government assistance. The poor or the lowest 30 per cent of income earners will be provided a 47.1 per cent service level while those belonging to the top 20 per cent of the economic ladder will receive 8.3 per cent. As income increases, assistance will decrease.

To ensure that more families from the lowest income bracket will be benefitted, the following general policies have been spelled out by NEDA: (a) that it should be lower-income focused, thereby relaxing standards, improving lending rates and designing appropriate and affordable housing packages; (b) that special attention will be given to urban needs because of the other problems suffered by the squatter areas; (c) that blighted areas will be improved within the purview of existing housing laws; (d) that suitable land policies will be pursued to reduce land prices, control hoarding and land speculation, release government land directly for low-income housing and expropriate land directly for social purposes; (e) that the concept of self-help and owner-built housing shall be cultivated and ways of institutionalizing such involvement shall be developed; (f) that there will be an emphasis on mortgage financing; and (g) that a system for ensuring coordination, integration and supervision of housing agencies shall be established.

The strategies that the program will pursue are varied. Firstly, housing packages will be matched with the affordability levels of the applicant. Secondly, the government's role in production shall be limited to the provision of shelter to the lowest-income groups. Thirdly, to address the current problems of tenure and plan for future needs, measures like land acquisition, land investment trust and urban land reform program shall be adopted. Fourthly, the NGOs and other organized groups will play a significant role in housing. They will facilitate the financing of the lowest 30 per cent for their housing needs and assist the urban poor groups to become viable organizations. Lastly, there will be a redirection of regulatory functions to service low-income clientele. The relaxing of standards for low-cost social housing and the streamlining of procedures to make these more responsive to beneficiaries shall be undertaken. To facilitate securing of clearances, a streamlined system using a one-stop-shop concept shall be established both in the NCR and the other regions.

Two major programs are being implemented for the five-year period. One is the Shelter Finance Program which has emphasized a cost-recovery scheme and an

efficient cross-subsidy mechanism, the elimination of inefficiency and the expansion to regional cities. The other is the Shelter Production Program wherein the primary concern will be the socially-disadvantaged sector. So we see that the basic concept of the program, clearly biased for the poor, is sound and valid.

Assessment of the NSP

How did the NGOs, GOs and POs perceive the operationalization of the National Shelter Program in the past two years (1987-88) that it has been implemented?

The NSP has been conceived as a program that will correct the flaws of the past regime and at the same time meet the needs of the majority of the population. However, the performance thus far falls short of expectations. Indeed, the program appears to be a sound concept, but its operation in the last two years was set back by several factors which policy makers and implementors have overlooked during conceptualization.

The problems and issues which surfaced in the research study were as follows:

1. *Lack of policy direction*

This is manifested in many ways. It may be seen, firstly, in the lack of financial support for the implementation of the different programs for the poor. According to NHMFC, there is money for the programs. However, we found that the funds earmarked are inadequate. As was pointed out, P22 billion a year is needed to meet the housing requirement. This is way above the amount of P4.1 billion actually set aside by government. Agency operating expenses are lacking and their release is often delayed, thus affecting program efficiency.

Secondly, since the money being used for social housing comes from the World Bank, the government allows this agency to influence the country's housing policies. Some of World Bank's stipulations are: a costly seven per cent spread per year; and costs of development and add-on-charges imposed on housing packages, including 10 per cent land tax, .95 per sq m, 12 per cent interest per annum, 1 per cent delinquency interest if payment is delayed and a range of from P3,900 to P17,000 for on-plot core house structure.

Because of this practice, the issue of affordability comes in. According to urban poor representatives interviewed, the extra charges will total up to 60 per cent of the amortization costs. These cause a heavy burden to them.

A corollary concern is the wrong priority of government. Debt servicing has been given greater importance, at the expense of basic social services to the needy. Urban areas, especially Metro Manila, have been extensively developed, disregarding the potential of the rural areas.

Thirdly, a genuine urban land reform program has yet to be legislated. As a result, there is unavailability of land for low-cost housing. In the previous regime, Areas for Priority Development (APD) were declared to provide the urban poor with the opportunity to own the land which they occupy. Nonetheless, there were no clear policies on the said sites.

NHA has also found difficulty in buying land because it entails cost. Its previous initiative to purchase big landed estates for redistribution to squatters who have been residing in these areas for sometime has been discontinued. It has, in fact, been restrained from acquiring new land for development and is, instead, encouraging the private sector to contribute land as part of its joint venture participation on social housing.

Fourthly, developers refuse to undertake social housing projects because of low profitability. This problem is tied up with the imposed stipulations of the WB and the issue of affordability. As long as the government insists on recovering cost — earning a margin of profit rather than serving the majority of the citizens — this concern will not be resolved.

Lastly, the Presidential Commission for the Urban Poor, which was created to be the coordinating body to facilitate action on urban poor matters, has no clout. According to those interviewed, the performance of PCUP has been a disappointment. For example, its Resolution No. 2 on *Tigil gibaan, Tigil tayuan* was not effective since the government agencies concerned did not heed the call. The local government units and police, military and other agencies continued with demolition activities.

2. *Affordability*

It was noted that different standards were used to measure an urban poor family's affordability level, thus setting unrealistic amounts for amortizing housing loan packages.

To illustrate, based on information gathered about levels of income, the NSP paper recommended P385 monthly amortization as bearable while PCUP's suggestion was P382 and HUDCC proposed a range from P210 to 352. The NEDA's Five-Year Medium-Term Plan classifies these families as upper-lower class. In fact, borrowers are required to allocate 21 per cent of their income to housing.

Contrary to the above findings, the NEDA reported that families belonging to the lowest 30 per cent of income earners spend only an estimated P175 a month for housing. A UNICEF situationer on the urban poor also revealed that the average monthly income of indigent families is P1000 or less. It is a wonder how they can allocate any amount for housing when their earnings are barely enough for food alone.

Another concern related to affordability is the non-profitability of low-cost housing as perceived by the developers.

Developers are apprehensive to go into social housing because returns on investment are not considered worthwhile. With the high cost of land and building materials, they can ill afford to tailor their packages to meet government expectations for the indigent families. Unrealistic appraisal values are used by lending institutions like SSS and GSIS.

It was also pointed out that the Housing and Urban Development Coordinating Council (HUDCC) which administers the Unified Home Lending Program charges low-income groups with high-interest rates.

A study of HUDCC's proposed guidelines does not inspire either trust or jubilation. For a P100,000 loan, home buyers must pay P7,000 in application and processing fees alone, while under the old SSS and GSIS schemes, similar fees cost only P1,000.

This alone would make a big difference to the low-income earners. In addition, they have to pay 12 per cent interest under HUDCC guidelines for loans of P54,000 to 100,000. The GSIS and SSS previously charged only 9 per cent for this bracket.

For loans from P100,000 to 180,000, a 15 per cent interest is charged compared with 12 per cent previously collected in the first two institutions.

Those interviewed maintained that the processing of application fees during the period was seven times more costly than those under the old SSS and GSIS schemes.

The Unified Home Lending Program favored SSS, GSIS and Pag-IBIG Fund lenders; but to borrowers, the terms of the loan are prohibitive. One gets the impression that the program is not serious in lending. Given this onerous condition, borrowers are compelled to build homes outside urban areas.

To developers, the program guidelines are so stringent as to give the impression that they are unwelcome partners in this undertaking.

This two-fold bias which tilts more heavily towards profitable operations than affordable lending terms is a serious factor that is found to derail the overall NSP.

Again, the imposition of the cost of development (COD) charges have placed a big burden on the families who have availed of the urban development program of government.

3. *Lack of coordination among housing agencies*

When we did the research, we found out that housing agencies' policies and activities are not coordinated. In fact, in many instances, agencies give conflicting directives and change the requirements. (I am not sure whether this is true up to now.) As a result, the beneficiaries spend a lot of time, energy and money in fulfilling requirements. They are confused as to what agency to go to. Moreover, the required services are either lacking or absent in these communities.

While HUDCC has pushed financing institutions through extraordinary evolution and adjustment, the other government agencies do not seem to appreciate their vital roles in housing development. Many agencies involved in the processing of housing loans have not simplified their procedures to expedite application for socialized housing. The housing agencies have still to agree on a common standard for development and housing.

Some local governments have their own housing programs independent of the national housing agencies. A number of mayors interviewed do not know about the programs of government. They adopt policies which are not always consistent with the general policy of the regime towards the urban poor. A concrete example is the "squatter-free city" policy of Manila which calls for demolition drives in the city's slum and squatter colonies.

4. *Graft and corruption*

The NGOs and POs complain about corruption in the government service. As was pointed out earlier, one reason why the beneficiaries do not wish to pay the COD is that the construction materials used in the projects are often of inferior quality. According to them, the materials are very costly and yet are below standards. They prefer to be provided with land and prefer to build their own structures. Also, problems of containment are existent because these are being tolerated by local officials and the military. In addition, many of the intended beneficiaries are not reached because of anomalous transactions between housing employees and unqualified beneficiaries.

Awarding of lots to relocatees and on-site beneficiaries have been marked with anomalies. Non-beneficiaries have complained of many cases of favoritism, lagay system, nepotism and other irregularities by employees of government front agencies dealing with shelter provision.

5. *Lack of management skills among housing officials*

This problem was identified by the government representatives. The agencies' inefficiency in implementing the NSP may be due to inadequate management skills as well as lack of knowledge regarding the target beneficiaries. Being technocrats, housing officials have not been exposed to realities experienced by the urban poor.

Moreover, they have not invited the participation of this sector in the planning and implementation of the program. Thus, most plans and programs are not responsive to the needs of the urban poor.

6. *Inadequate promotion of the program*

The communication gap between government and the people is attributed to the absence of information on projects of the NSP. Generally, people do not know what agencies to approach in applying for housing benefits. The interfacing of other housing agencies besides NHA has contributed to the confusion. Urban poor organizations demand a complete list of housing projects and borrowing schemes available for social housing.

These are the issues that have emerged from the study of the National Shelter Program. Policy makers and implementors must indeed realize that sheltering the poor calls for major changes that will provide security of tenure and access to land in slum and squatters abode and improve the economic condition through livelihood and employment opportunities, offer housing credit and loans under terms and conditions that match their life situation and harness the human factor towards the vision of people helping themselves.

An organized people's movement can persistently advocate for participation in the planning, implementation and evaluation of the NSP to ensure the program's relevance, efficiency and effectiveness.

Recommendations of the Study

There is a consensus among the GOs, NGOs and POs consulted by this research on the solution to the problems identified.

The long-term solution to the problem is the enactment and immediate implementation of a *genuine urban land reform law*. This requires a commitment of the government's resources on a massive scale.

In the meantime, while government action on the urban land reform law is being awaited, some short-term measures are recommended, namely:

1. Review policies and procedures vis-a-vis the avowed goals of the program. More effort must be exerted to make the NSP pro-people. In this regard, an immediate review of the Urban Land Reform Program is imperative. Its approval and immediate implementation must be made a priority. Moreover, the government's position regarding debt repayment and borrowing of foreign loans needs careful study. Lastly, the government must seriously consider and undertake an integrated development program in both urban and rural areas.

2. More direct and substantial participation of NGOS and POs must be sought to avoid unrealistic expectations on the part of the urban poor. It is commendable that the NHA has initiated a trisectoral review of its policies and procedures. Monitoring its operations can be another function in which NGOs and POs may be actively involved. This will be in line with the government's call for transparency and people's involvement. With regular feedback about its performance and the problems encountered in the implementation of projects, immediate corrective action may be taken.

3. Communities must be organized and continuous education must be pursued to empower the people and equip them with the needed knowledge, attitude and skills in management. The training inputs will help them in their tasks. Value formation must be emphasized so that the POs who will be involved in assessing projects will be able to maintain their integrity and proper attitude towards their work.

An empowered and conscienticized organization will be better able to protect itself from threats and other forms of harassment. Graft and corruption will likewise be minimized.

In addition, government must also provide protective measures so that those involved will be able to do their work without feeling threatened.

4. NGO-PO participation in monitoring the NSP must be institutionalized. In the workshop discussions, the three sectors were one in saying that the shelter program should be monitored regularly and systematically. A trisectoral network was identified as the monitoring body, with broad representation and nationwide linkage. To strengthen its role as an effective monitor, the body created must be permanent and must have formal authority to discharge its responsibilities. The three sectors represented must be co-equal in status and must complement each other, guided by the principles of subsidiarity, solidarity and critical collaboration.

In monitoring the program of NHA for the lowest 30 per cent of the income earners, the TSN will consider the following:

a. Program performance - Simple assessment forms which will reflect the overall accomplishment of the agency may be administered bi-annually or annually by member organization representatives in project sites.

b. Program effectiveness - Since the mandate of the NSP is to serve the majority of the population, the TSN must obtain information on affordability of housing packages and the accessibility and efficiency of services for the poor. The proposed data-gathering activities are records review, field visits and interviews with the project staff. The information gathered must be fed back to NHA management.

c. Program efficiency - With the limited resources of government, crucial projects must be closely monitored to ensure that resources are utilized for the benefit of the poor. Periodic visits and interviews may be conducted regarding benefits from the assistance, quality of the assistance and effectiveness of delivery systems.

The suggested schemes must be built into the program operations so as to elicit the cooperation of the people and facilitate the process.

B. HOUSING FOR LOW-INCOME PEOPLE: NGO EXPERIENCES

KEY SUCCESS FACTORS FOR LOW-INCOME PROJECTS: LESSONS FOR NGOS

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What are the key success factors in establishing a self- sustaining low-income housing NGO? There are several. However, I shall concentrate on three of the more important ones which we at the Davao Independent Housing Foundation (DIHo), through experience, regard as crucial.

Physical Production

The first principle that I would like to present in terms of a self-sustainable program is to focus initially on the physical production of low-cost housing units. What are the reasons for this? There are several, the first being the huge backlog of need in that market. It is a legitimate need that is not being addressed by the commercial market. Secondly, although there is probably a good number of NGOs currently involved in community organizing, only a few are involved in the physical production of housing units. It is an area that has not been addressed fully and it is something that has not been taken full advantage of. Lastly, as an NGO we are concerned with maximizing delivery service over time. My premise is you cannot do it solely with community organizing at the moment. There is need to look for another way to get into the housing market in a self-sustainable way. Undertaking physical production is a way to get into the housing market in order to develop capacity over time and the self-sustaining capital resources that do not rely on government subsidies and external grants.

Corporate Organization

A second key success factor is corporate organization. The NGO must be organized and made to operate in the most efficient and business-like manner possible. This is a very important factor which should not only be espoused in conferences but, more importantly, should be enforced in an organization. One way to operationalize this concept would be to make it a policy that **no operations money should come from grants.** This is a difficult idea for NGOs to follow. If an NGO tries to minimize the dependence of its organization on grant money for its operations, it will find a much stronger, leaner organization capable of weathering different political and economic climates.

The tendency of most NGOs is to receive a grant from an organization like the United States Agency for International Development (USAID), and then hire ten new people just to work on a particular project. What happens at the end of the grant? Will the NGO fire those ten people? No. It tries to keep them. So it looks for another grant to support those ten people. Their business then becomes searching for grants and not building houses. So if you want to focus on the business of building houses, try to emulate business practices as much as possible in your housing operations. This would not necessarily apply to community organizing, however. But the character of housing is technical in operation such that it would lend itself to business practices. Therefore, it would be best to try to apply them as strictly as possible. The only difference between your identity as an NGO and as a business enterprise would be your objectives. As an NGO, your focus is service and thus your objective is cost minimization rather than profit maximization. That is the only difference.

Another important element of corporate organization in an NGO is the board of trustees. Inasmuch as an NGO needs good representation from the various sectors of its community — business, legal, government and technical fields (i.e. engineering, planning, architecture and social development), its board of trustees must be chosen strategically. It is not a question of gathering the nicest individuals around, or the people you know best, or the people that you are familiar with. You should think about the sectors of the community and of the commercial sectors that you need to be successful. Get people from those sectors on the board of the organization.

An NGO's board of trustees may not meet more than four or five times a year. But when it is hard up with its cash flows, or when it needs 10,000 board feet of lumber tomorrow and it can not find a supplier, it is the board that is going to get the help. Hence, it is important to have people on the board who have contacts in the construction industry, the banking industry, in the legal sector, in government, etc. The directors will get the NGO through the tough times, especially when it is first starting out on each project.

On DIHo's board of directors, we have a president of a plywood manufacturing company, a real estate developer, an urban poor leader, a lawyer, an urban planner and an international settlement specialist. These people have enough links to enough sectors that no matter what difficulty we have, there is someone to turn to for help by just making a phone call. And that is very important.

The third important element in corporate organization is the group of technical staff. Technical staff should be streamlined, experienced and committed. The NGO should seek to hire fewer people than it will need.

Always make sure that the group is a little bit overworked and whenever possible, only hired from operations income and not from grant income. If an NGO has to hire from grant income, it has to make sure it is a fixed term contract that is co-terminus with the grant. This should be made clear with the staff concerned.

Otherwise, the NGO may find itself saddled with a huge operations budget with no income to support it.

We have a lean group of technical staff at DIHo. We have two engineers (one of whom is the manager and both of whom have over ten years experience with the NHA and other housing projects); one CPA who has been chief accountant of the Regional Development City Project (a World Bank-funded project) in Davao City for ten years; one architect/draftsman; two technical aides and four administrative staff to process mortgages and keep the books. With these ten people we are able to implement projects normally requiring about 25 people in a government project. Thus, there is no need for a big staff. All it takes is to have experienced and committed people.

The NGO must offer its staff competitive salaries and monetary incentives. If the organization wants to keep its qualified people then it should set its salaries at least at par with that of the government but preferably with the commercial sector. Otherwise, it stands to lose people after they have gained a few years' experience with the organization. They will get another job. NGOs should not make the mistake of letting their professionals choose between providing for their own families and doing social development work with the organization because people will choose to provide for their families before anything else. Personally, I do not think people should suffer because they are doing good work. I believe that competitive salaries should be offered to compensate people well and for management to rightfully expect production from them.

I think there is no practical limit on what an NGO can earn. NGOs can earn profit and the salaries it pays can be as high as its income and production can support. Hence, if it can double its production, it can double its income. It is important to remember not to expect people to donate their time for long periods of time to the organization. People get tired. They burn out and will leave. And when they do leave, they take all their experience with them. Then, the NGO will have to start all over again.

At DIHo, our salaries are competitive. We are paying our manager P 10,000 a month which in Davao City is comparable to the government rate of a project manager. On the other hand, our CPA/assistant project manager receives P9,000 a month.

One way of augmenting professional salaries is to develop a consulting-service aspect to the operations of an NGO. Once an NGO has gained some experience in the housing field, that NGO can offer its services to other NGOs or to the private sector on a consultancy basis at commercial rates. The income generated can be used to augment the salaries of the organization's professionals. This will enable them to enrich their experiences which in turn will be beneficial to the organization. There will often be periods, especially in the case of project engineers and designers, when they will not be busy. Upon embarking on a new project, it is not

unusual to have two or three months of downtime for your technical people. Thus, it would be wise to offer consultancy services and put idle staff to work and earn income but within your organization.

Another point in terms of technical operations is computerization. It would be beneficial to computerize the accounting system, budget planning, cash flows, etc. to the greatest extent possible. This way, the NGO is able to cut down on its staff. The idea is not to employ as much hands as possible. If the NGO is bent on running an efficient organization that will produce housing for the low-income groups, it should minimize its staff and maximize the use of computer technology and other forms of technologies and management concepts that will help it cut down on costs.

We at DIHo have only one CPA and one bookkeeper for our administrative section. We do all our accounting on the computer and it takes about an hour to generate our financial reports. From experience,. I have seen a lot of NGOs with USAID grant money and they have five or six nice little computers with little stickers on them. But when you ask a copy of their financial report, it is typewritten. I ask them what they use their computers for. They answer that they are still learning. I tell them: "Try to learn as fast as possible. Hire someone who knows how to use it if possible. You'll reap the benefits faster."

Mobilization of Land and Finance

The third major key success factor is in the area of mobilizing land and finance. It DIHo, we employ the simple joint venture model where we identify suitable land and the landowner who is willing to enter into a joint venture. Although it is difficult to find this kind of landowner, I believe this is the best model for beginning NGOs in housing. Once we have identified both land and landowner, a memorandum of agreement is then executed with the landowner for the use and development of the land.

The second phase of this model calls for the identification and organization of a group of beneficiaries to which the project is sold. It is much easier in terms of processing papers, collecting fees, organizing people, etc., as long as there is a specific group who will essentially agree to buy the entire project.

Once we have the land and the beneficiaries identified, we secure construction financing from rural banks using the land and sales commitments as collateral. DIHo was able to get started with a collateral-free loan from the Cooperative Bank of Davao City for P1.5 million based on sales commitments on consignment of proceeds of mortgage take-outs from the sales of our units. Not every bank is going to agree to this kind of collateral pre-arrangement. But the most important thing is the control of the land. If you have land, you can always get financing.

One important thing to keep in mind, though, is that USAID will not allow the use of grant money to purchase land. So if an NGO is thinking of getting started with grant money, it has to make sure it has land first. It can get it through a joint venture arrangement or get the land donated. Otherwise, if funds from other operations are available, it can use those funds to purchase land and refund it later to the organization. If an NGO can get started without grants, I would recommend it.

When DIHo got started, we had no track record so we could not receive any grant. We had to complete a project first without grant money before we qualified for grant money. That is the irony of the international funding system, i.e., you have to prove that you don't need the money before you can be eligible to receive the money. It is difficult to prove that you don't need the money at the time you apply for the grant. But I think that if an NGO were subjected to a "baptism of fire" where it can complete its first project without grant money, it will be a stronger organization, more confident in its operations, and unafraid of losing grant money in the future. Bear in mind that grants should only serve to enhance your operations but never to ensure them.

Managing Cash Flow

The fourth and probably the most important key success factor is managing your cash flow.

We have one golden rule at DIHo which we put on the wall and repeat at every possible situation: **The Cash Flow Rules.** An NGO has to learn to live by this rule. What does that mean? Well, in a construction project or in any business venture for that matter, cash flow is the most important factor. When you have a shortage of cash, everything else in your operation is affected — you cannot pay your suppliers nor your staff, your suppliers will not deal with you, your staff starts leaving, people lose confidence, no one buys your units. In short, everything starts to deteriorate. On the other hand, if you have cash, you can purchase materials in bulk, catch up with your construction schedule, keep your staff, etc. All good things follow from a good cash flow.

What does it mean to the organization to be ruled by the cash flow? Well, it means that if you don't have cash from your budget, your available cash has to go into your budget and not into other things like salaries. It is a very strong motivational factor when the staff knows that their salaries come from their production and that they will not get paid on time if they cannot produce the income and the cash flow. In our first two years at DIHo, we only had two instances when we could not meet our payroll due to cash flow shortage. But there were several times when it looked like we would not be able to. There was a lot of pressure on the staff, but it was that pressure that motivated them to overcome all the obstacles and put up the cash. Clearly, it is very important that cash flow must rule.

DIHo was able to get started with only about 10 per cent of the total project cost in cash. By efficient cash flow management we were able to roll over that cash often enough to complete the project. Obviously with more than 10 per cent you would be in a stronger position. But it can be done with only 10 per cent.

Training NGOs

In addition to the aforementioned success factors, I wish to share some ideas, too, on training of NGOs and capacity-building which I think we will be seeing a lot of in the next few years.

In training NGOs, you have to be decentralized. This implies on-site training whenever possible. My model is to send a team of trainers to an office and live there for two weeks and see how its operations run, how its organization interacts, what its particular problems are, etc., before we begin teaching its people.

Second, I believe that training has to be hands-on. You should be able to go and work with other NGOs engaged in housing and see how they do it. That is the way to learn. It is hard to learn sitting in a room talking about a technical subject like housing.

Third, training should be at the request of the NGOs. Again, by all means, they should be able to pay for it. NGOs should pay for the training and regard it as an investment by charging all costs back to its first project.

I have the same thoughts about networks and associations of NGOs. Everyone is forming associations and federations of NGOs and the like. There is a danger here of reproducing the same government bureaucracy in the NGO world which we are trying to get away from in the first place. So I'd like to see any organization of NGOs to be supported by NGO contributions. Better yet, it should operate on commissions earned from the services rendered to NGOs. I don't think we need too many technical NGOs of the kind I have described earlier. I don't think everybody needs to get into the physical production of housing. As long as there is one or two in each region who can provide the services to the other NGOs, then you can continue in your community-organizing and development work and draw on the technically-oriented NGO when needed.

Back to the corporate organization, I think NGOs that are unwilling to set-up the efficient structure along the lines that I have laid out should not be trained as it would be a waste of time and money. I think NGOs should teach each other and the training money that will be coming in should go to NGOs to teach other NGOs and stay within the NGO community. And again the cost of that training should be recovered out of project revenues from actual projects produced from the training.

My last point is that training should be project-based. Abstract training is nice if you have four years to pursue the subject. But if you really want to learn the housing development project, you have to develop a housing project with supervision and technical assistance. Once you have gone through a first time, you would have learned more in six months than what you would have learned in seminars and school. Therefore, we should focus our attention and resources on how to train in projects.

CASE STORY:

THE DE LA COSTA LOW-INCOME HOUSING PROJECT AN EXPERIENCE IN PRIVATE SECTOR SITES AND SERVICES HOUSING STRATEGY

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I. INTRODUCTION

Contemporary constraints on the large-scale production of appropriate housing solutions for the poor are as formidable as they are many.

There are various constraints to be reckoned with: uncontrolled land speculation, land hoarding, inordinate developer profits, excessive banking charges, and bureaucratic delays and complexities. These are all pressing down on the poor and making it difficult for them to own a house.

Housing programs for the poor have traditionally been the exclusive concern of government housing entities. Output has, however, been inadequate for a variety of well-known reasons. On the other hand, the private sector, with its vaunted entrepreneurial spirit and managerial competence and efficiency, tends to exclude the masses from access to its typical product.

Is there some alternative approach available that somehow bridges the gap between the two; an approach that borrows the flexibility and commitment to purpose usually associated with the private sector entrepreneurial spirit and blends this with the social orientation that is usually presumed to be the special domain of government intervention? And, should this approach be identified, could it possibly be easily replicated to produce housing output of some quantitative significance?

Since an actual case is the best proof of what is possible, this paper presents for consideration the Horacio De la Costa Low-Income Housing Project, the accomplishment of the Freedom to Build Corporation of the Philippines. It is an attempt by a private sector corporation to respond to an incentive program of the World Bank/Philippine government to deliver low-income houses. The project's accomplishment and the difficulties it has faced may be a rich source of insights and lessons for other development institutions to learn from.

What is the potential of private sector-government collaboration? Is the project replicable or are there inherent limitations and constraints that tend to stifle the emergence of similar projects?

This paper's hypothesis is that the approach of such cooperation is not only commendable but urgently needed. Nevertheless, there are many areas of conflict that must be first resolved.

II. HISTORY OF THE F TO B CORPORATION

The Freedom to Build Corporation (F to B) is a non-stock, non-profit, socially-concerned corporation existing under Philippine law, whose single corporate aim is to relate to the housing needs of the poor.

The Dasmarinas Experience:

Since its incorporation in 1976, F to B has operated a housing assistance program in two of government's resettlement areas for former Manila squatters. These areas, administered by the National Housing Authority, are sites and services projects now housing approximately 20,000 families. The NHA provided the basic area infrastructure and a 100-sq m homesite for each family but left housing construction to the individual resettled families.

F to B saw itself as performing a follow-up strategy, completing the NHA's sites and services approach. Where government action trailed off, leaving people the responsibility of providing their own shelter as best they could, F to B came in with its home building assistance program in order to make the self-help process a little easier and more manageable. F to B, primarily, is operating a construction supply store with a unique variety of products and services, all provided at non-profit prices in order to generate an incentive to build.

Over its 15 years of existence, the project has been quite successful, having grown over time and having had a catalytic impact on the people's construction efforts.

The original F to B project is still there in the Dasmarinas resettlement areas, still operating. Nearly all of the resettled families are still there too, mostly with improved shelters, but still coping with myriad problems of poverty from which there seems to be no easy escape. It seems, though, that whatever happens in the resettlement areas has little impact on national housing policies. Once removed from the city, the resettled families are "out of sight, out of mind." Although 50,000 families are presently living in resettlement areas and although, with many qualifications, the resettlement projects could be judged reasonably successful, a "sites and services" approach has not substantially taken off as dominant national housing policy.

In Manila, where only the wealthiest 15 per cent can afford the typical product of the formal housing industry, approximately 90 per cent of all house building energies serve that narrow margin. Housing solutions for the majority who are poor, except in certain specific projects, are simply not being provided and have not been provided for decades.

While F to B helped in some way some of the resettled families, its endorsement of the sites and services strategy, together with the "housing by the people" philosophy, went generally unnoticed, having little or no impact on national policy makers.

The De La Costa Approach

The Dasmarinas experience tended to prove that self-help strategies, properly protected and supported, can be a rich source of housing solutions for the poor. But the owner-builder activity going on successfully in the outlying resettlement areas was having little impact on urban real estate practices or on government housing policy.

To help articulate its basic housing philosophy, F to B moved into the city itself and developed an approach that combined the "self-help" strategies of the resettlement areas with the rigid demands of legally-constructed urban housing. This attempted union emerged as The De la Costa project.

The De la Costa Housing Project in Metro Manila has been undertaken in two phases: the De la Costa I project in Barangka, Marikina, which was completed in 1986; and the De la Costa II project in Novaliches, Quezon City, which has been in progress since 1986.

The project was undertaken through the interaction of four distinct entities. Firstly, there was the F to B with the experience of its work in the resettlement areas, actively looking for opportunities to explore new approaches towards housing the urban poor. Secondly, there was the Ateneo de Manila University which relinquished part of its urban campus' land resources to respond to the housing needs of their poorer neighbors. Thirdly, there were those poor neighbors themselves, the Barangka Gardeners Association which was a group of loosely-organized low-income families, mostly textile workers, who spent leisure hours tending small gardens on the unused hillside at the back of the university campus. When it seemed imminent that the land would be sold for high-income development, they prevailed upon university authorities to allocate the land for their own housing needs instead. Fourthly, there was the World Bank, which through the then Ministry of Human Settlements, offered financial and other incentives for private developers to undertake sites and services projects under the third Urban Loan Package signed in June 1980.

The process of negotiating for project approval was long, complicated and enervating. Nevertheless, after more than two years of delay which took project planning through a series of national economic crises and consequent cost escalations, the project at last got underway. A formal inaugural took place in December, 1983 with earthmoving equipment serving as backdrop to the temporary, makeshift stage. Land development started immediately and initial housing construction two months later.

Implementation of the project was replete with problems. Production never proceeded on schedule. Rains, delays in the release of funds, and the uncertainty of accomplishing on time the legal requirements for water and electrical connections conspired to curtail output.

In 1986, the De la Costa I project was completed. Today, it is home to 540 low-income families.

With the completion of the first project, the De la Costa II project in Novaliches, Quezon City took off and is on-going to-date. It will eventually be home to two thousand families. As of December 1991, 1,660 units have been constructed with about 1,300 families already in residence.

III. PROJECT DESIGN

Prenote:

There are three De la Costa projects:

The past: The De la Costa I project, finished in 1986, is located on a 5.2-ha site at Barangka, Marikina. The property was formerly a part of the Ateneo de Manila campus.

The present: The De la Costa II project, presently on-going, is located on a 21-ha site at Novaliches, Caloocan City along Quirino Highway just north of Lagro subdivision.

The future: The De la Costa III project, now in final stages of planning, is located five km north of the De la Costa II project, also along Quirino Highway. It is just south of the Grotto. Land development will begin in January 1992.

The three projects are somewhat identical in concept and design (although they differ in size and location). Nevertheless the comments and descriptions below refer primarily to the De la Costa I project, so as not to confuse the reader.

Site design

The project site, somewhat irregular in shape, is long and rectangular, lending itself easily to a street layout of a single arterial road serving three-meter footpaths set perpendicularly to it. The layout is a deliberate imitation of a similar design in the "Building Together" project in Bangkok and can aptly be described as a "fish-bone" or, more accurately as a fish skeleton. The main arterial road serves as "core" of the social interaction of the project residents as well as allowing minimal vehicular traffic. It is not a through street, ending in a cul-de-sac play area.

The project has a deliberate pedestrian-oriented bias. There is little provision for car owners. Access to the footpaths is blocked and there is limited provision for parking.

Density

Approximately 90 per cent of all the home lots are 62.5 sq m, as many as the land contours and the project design would allow. On these a 20-, 40- or 65-sq m unit is built as will be explained below. Since there were so many low-income candidates for the project and since project site was virtually the last piece of idle land in an otherwise urbanized environment, it did not seem appropriate to entertain an income-mix, cross-subsidy approach.

The density of the project is 100 families per hectare. Thirty per cent of the land was set aside for roads, open space and other communal uses.

The density and small-size lots are deliberate for a variety of reasons.

* It is cost-effective. Low-income housing cannot be delivered by corporate wish or sentimental aspiration, but as the product of deliberate strategies wherein costs-per-family housed can be reduced. Smaller homesites, with their impact on raw land costs and development costs are obvious examples of cost-cutting strategies.

* It makes frugal use of limited urban land resources. Simple one-storey dwellings right on the ground are highly culturally preferable in the Philippines and probably elsewhere in Asia. All things considered, they probably are a better choice in relation to a family-per-hectare ratio than high-rise apartments which, admittedly, can be more efficient in regard to land use but carry several negative trade-offs. High-rise apartments leave little room for owner expansion and presume a higher level, less people-oriented technology. They are less culturally acceptable in an Asian context. They are also more expensive.

* Although frugal in terms of land use, the project is adequately spacious for a truly human settlement. Many professionals who personally live in much more spacious circumstances tend to criticize the project for providing space that are too small, too restraining. Nevertheless, most present occupants find it much larger and more comfortable than the cramped surroundings of their former rental housing. Owner satisfaction runs very high. Meanwhile, in a nearby medium-income subdivision with home lots of slightly larger size, owners are gradually turning their small backyards into rental housing, not only disrupting the symmetry of the original design, but also tending to double the originally planned density with a "shadow population" in the rental housing.

A strongly desired objective of the De la Costa project is to maintain as high as possible a percentage of homeowners. We do this partially by screening, by choosing families that seem "hungry for housing," and partially, too, by keeping lots small enough not to spawn a secondary population of renters.

Deliberate provision of rental housing is currently in vogue as a source of income for poor families. But the costs of ownership in the De la Costa project seem lower than prevailing rental rates in the immediate neighborhood. Project clientele, if given spatial opportunity, could easily generate more than total monthly amortization from renters. But ours is a housing rather than an income-generating project. We are interested in providing shelters to families who need and want them; not in creating a small clique of exploiting landlords.

The project does not exist in isolation though. The general unavailability of housing in the city — hardly alleviated by a 540-unit project — as well as the tempting pressures for extra income might prevail over time. It is a dimension of the project that deserves future study and assessment.

Housing Design

Housing design stresses neither architectural ingenuity nor materials innovation nor construction technique sophistication. The basic design is a 20-sq m house on a 65-sq m lot built on the most commonly-used materials in the country — concrete hollow blocks and galvanized iron roofing. The unit is equipped with water, toilet and electricity. It is only a starter house; that is, unfinished. Marketing and pricing policy allows for a variety of extras, but the basic house is as simple as possible in order to lower the hurdle of entry for low-income buyers. The unit then sold at P56,000, which at 1991 prices should sell at P75,600.

The roof slant, the location of the unit on the lot and the temporary quality of the back wall — all these presume and encourage expansion at a later date, proportionate to a family's preference and affordability. Expansion may readily be made to a 40-sq m house on one level, up to a 70-sq m dwelling on two levels.

It could be argued that a "sites and services" project should minimize professionally supplied inputs; that is, that house construction should be left to the "self-help" energies of the residents themselves. Even though F to B's bias is that, ideally, this is a better strategy, we have been professionally building 20-, 40- and 65-sq m units in response to the following constraints:

* Low-income urban housing on small lots seems to automatically imply row housing. Such a design is more cost efficient in regard to land development and provision of infrastructure. In implementing the design, we felt that the shared common walls should be professionally built.

* Low-income urban families generally have neither substantial savings to purchase building materials nor available time to build with. Moreover, they need adequate shelter at the very start in order to discontinue rental payments elsewhere. If a gradually emerging self-help structure cannot be lived in immediately, double housing costs subtly affect the families involved. These limitations interact with the following additional considerations.

* The project, partially financed at commercial interest rates, tends to inhibit experimentation with the slower, weekends-only, self-help strategies. Paradoxically, the high cost of borrowed money tends to make self-help housing an unaffordable luxury. It is true that incremental self-help building, financed directly out of a homeowner's salary or savings can be an efficient means of construction. But, in our project, funds borrowed by the developer for land development could not be recouped until we present a legally-acceptable housing unit to the government mortgage financing institution. The costs of borrowed funds, like all other project expenses, had to be passed on to the buyers. Hence, we are constrained to shorten the loan term as much as possible.

* The requirements of the government agency that was to provide the long-term, 25-year financing to home buyers presumed something that could be called a house as mortgage collateral. Project planning was pulled into conflicting directions in this regard. The National Home Mortgage Financing Corporation required a house, but the World Bank/Private Sites and Services Office (Ministry of Human Settlements) preferred sites and services only and initially would not finance the housing. The minimal 20-sq m core unit seemed to be a reasonable compromise between these two contending forces.

  It should be noted that government policy has since evolved. There is now more acceptance of a developed homesite — without a house — as an adequate basis for mortgage.

* The larger 40- and 65-sq m units were accommodations to the request of project clients. Inasmuch as the NHMFC allows a house-and-lot purchase equal to 30 times a member's monthly income, home buyers wanted to maximize access to the once-in-a-lifetime opportunity for the 25-year, nine-percent-p.a. mortgage and urged us to sell a larger house so that they could avail of the larger mortgage. It seemed a reasonable request. Moreover, for many larger families, the 20-sq m unit was just too small even for a starter house.

We were building, then, 20-, 40- and 65- sq m units, with the larger models basically a duplication of the 20-sq m core. There is really only one design, the 20-sq m house. The 40-sq m house is really two 20-sq m houses; and the 65- sq m house, three 20-sq m units with the third unit on the second floor.

Project Clientele

The perceived advantages of reaching out to a pre-existing group — in this case, the Barangka Gardeners Association — are the following:

* Pre-existing social networks (people who have lived and/or worked together) make post-occupancy social integration easier.

* The pre-existing communities also help project screening by assisting developers weed out affluent buyers, speculators or social nuisances.

* Significant economics are introduced into the screening and processing work through the ability to work through a contact person, use local facilities for meetings and deliver mail and similar services.

Once the product has been attractively priced, these aspects can be taken advantage of. In our case, soon after announcing the project, we received 1,400 applications for the 530 units available. In the De la Costa II project we were similarly oversubscribed and now, as we move towards De la Costa III, we already have 3,000 applicants for 1,000 buyers.

Working with specific groups is easier for a private sector entity than for government which must necessarily work under bureaucratic constraints. If government attempted anything but the most objective and impersonal relationship with applicants, it would be accused of favoritism and corruption.

Client Affordability and Pricing Policy

When we designed the project, the first concern was affordability. Wages are low in the Philippines; the median family income of about P3,500 monthly is

simultaneously the poverty line. We wanted to relate to precisely this market, particularly to the factory workers, school maintenance staff and low-salaried teachers.

Pricing policy represents a continuum. The basic 20-sq m core sold at that time (1985) for P56,000 and amortized at P430 monthly. If affordability allows, buyers can choose the larger 40- or 65-sq m houses for P76,000 and P112,000, respectively. (For the current De la Costa II project, the prices have gone up to P92,000, 130,000 and 180,000 for 20-, 40- and 65-sq m units, respectively. Mortgages are P800, 1,200 and 1,600 a month, respectively.)

It should be noted that the core house comes without ceiling, internal partitions, plastering or painting. The buyer is left free to add improvements on his own initiative. It is a simple idea — an attempt to be sensitive to varying levels of buyer affordability and an attempt to offer more freedom of choice, while not excluding the poorer applicants who could otherwise be excluded for an inability to afford unessential extras. Despite the simplicity of the idea, getting it accepted by government took a disproportionately prolonged negotiation with the regulatory agencies.

While these options can be supplied to the buyer, he is free, too, to provide for himself, doing the labor himself, or asking the assistance of friends or relatives. In line with our "freedom-to-build" orientation, this approach is encouraged.

Social Organization

The establishment of a new subdivision usually implies the establishment of a new and permanent residential community. Buyers are introduced to a project through marketing personnel who provide possession of a new house on a turn-key basis to a family which has never lived there before, nor probably ever met their new neighbors before. Yet, something as delicate as the creation of a new community should not be left to chance.

Government regulation, while strict on the development of physical infrastructure, does not concern itself with the importance of social infrastructure and development. In turn, this attitude of non-involvement has rubbed off on developers. Once the houses are sold, the developer feels no further responsibility for the community that his project has formed. Such a practice may be acceptable in higher-income subdivisions in which families frequently prefer social anonymity. But, in the communities of the poor, social interaction is not only culturally more acceptable but is also a necessary condition for the continuing welfare of the entire community.

In the De la Costa project, whether the project remains a pleasant residential environment for the homeowners, or whether it degenerates into an urban slum is too important a matter for the developer to ignore. For this reason, F to B looks at

the social development of the community as an integral dimension of the development process.

To-date the following non-housing interventions designed to respond to the social development needs of the community have been undertaken:

* A community homeowners association was formed as a first step towards helping the families take control over their own project. The association has resolved problems relating to security, street lights, garbage collection, distribution of the costs for temporary water and electrical resources. Social events have been organized such as house blessing ceremonies and Christmas parties.

* Trees and flowers have been planted to brighten up the project and to encourage families to do the same at their own backyards.

* Livelihood activities are encouraged so that the residences are now used for a variety of income-generating activities, like stores, beauty parlors, seamstress/tailoring shops, etc.

* Indigenous savings (paluwagan) clubs have been formed among the families.

* Technical assistance and seminars interrelating housing quality with family life have been conducted.

IV. DISCUSSION

Is the De la Costa project relevant? Is it replicable? One hesitates to answer these questions until there is some common basis of understanding as to what housing is and for what purpose. The architect looks for innovative design; the businessman for profit. Government housing is frequently caught up in a complexity of ambiguous motives related to maintaining or expanding political power. By contrast, the De la Costa project is none of these. It is simply an attempt to deliver low-income housing at affordable prices and in the context of communal interaction.

It hardly offers itself as the solution to low-income housing needs, for there is no single solution in the complexity of national housing situations of the Third World. Rather, it attempts to make a contribution.

Some of the uniquenesses of that contribution have been presented in the preceding pages which may be summarized as follows:

* government-private sector collaboration
* community involvement from the beginning
* emphasis on client affordability
* high density low-rise structures
* uniformity of lot size with consequent disinterest in cross-subsidy strategies
* adoption of specialized standards for low-income housing
* pedestrian-oriented land design
* interaction between professional and self-help construction
* preference for simplified technologies
* emphasis on titled ownership for all participants.

The sum total of the packaging of these concepts explains the project's uniqueness. In itself, the project is little more than a droplet in an ocean of need. Nevertheless, in addition to offering housing to a few, it offers a statement for the many to consider housing to be affordable. It also raises questions: Why can't we seem to "take off" in the production of low-income housing? If government activity alone is not the answer, what is the potential of private sector-government collaboration? Are there insurmountable limitations and constraints that tend to eclipse the potential of a project like this from replication? Were the circumstances of the De la Costa project so unique that they could not be accommodated to other situations?

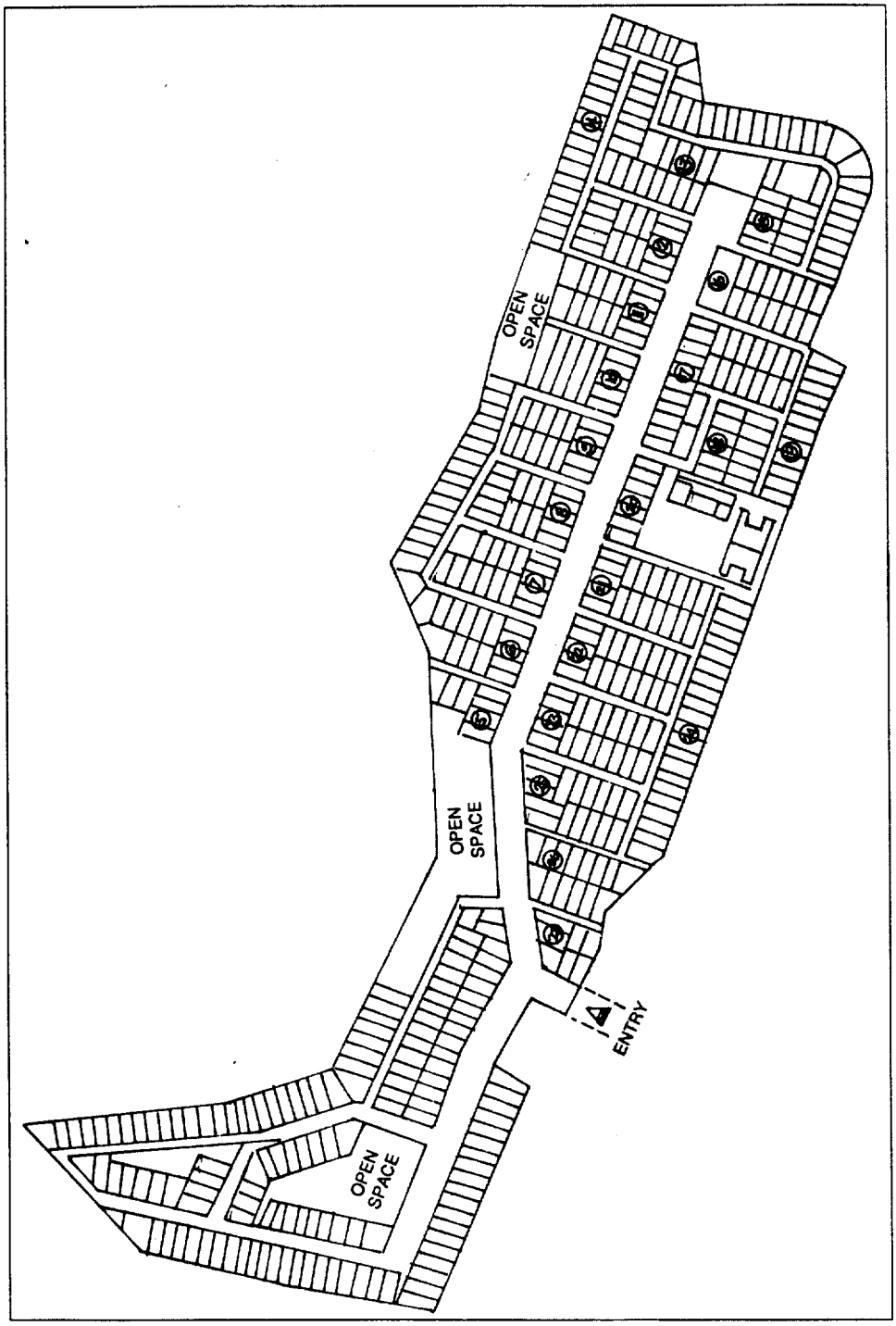


Fig. 1. De la Costa Project, Marikina Project Plan.

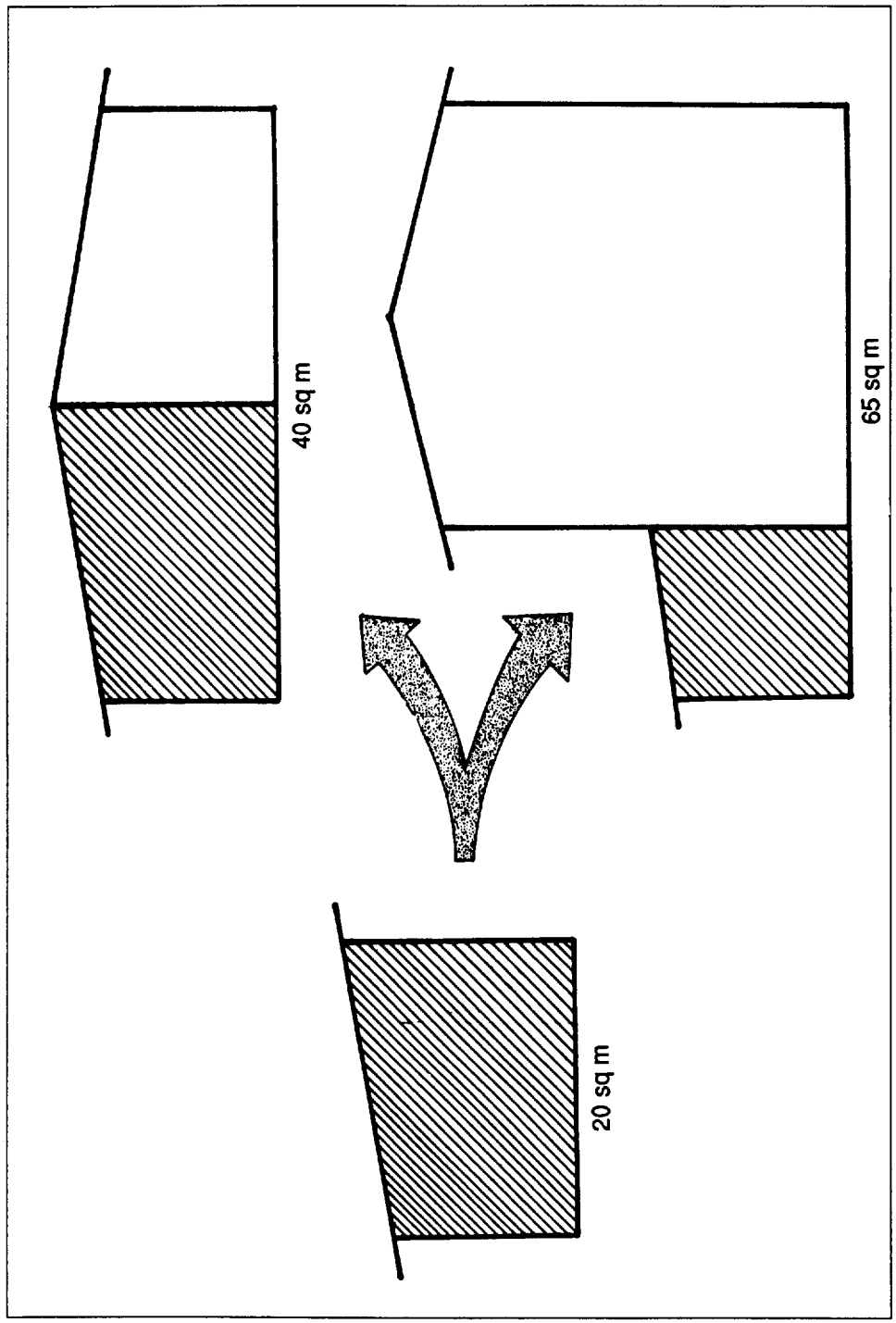
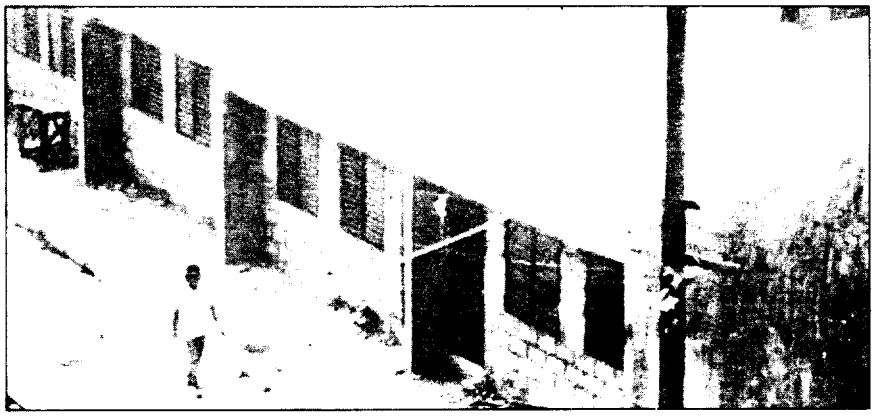
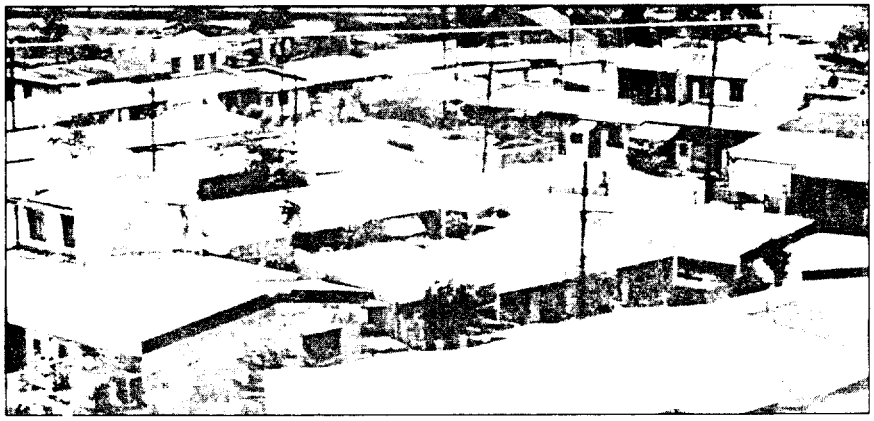


Fig. 2. De la Costa Housing Project: Expandability of House Design.

DE LA COSTA HOUSING PROJECT
MARIKINA, METRO MANILA



De La Costa Houses



CASE STORY:

THE HERMANA FAUSTA DEVELOPMENT CENTER SHELTER PROGRAM

Sister Lilia Cuachon
Director
Hermana Fausta Development Center

In response to the need for housing by squatter families in Lucena City, Hermana Fausta Development Center (HFDC) has, since 1983, engaged in shelter development programs.

Run by the Daughters of Charity, a community of religious sisters, the Center began as an elementary and high school providing free Christian education to indigent children in Lucena City. In 1975, the school was phased out to give way to a development center serving the needs of the poor people in the community. It was the religious community's way of rallying to the call for the church to get involved in pastoral work and human development.

HFDC is closely affiliated with the Christian Children's Fund (CCF), an international organization, which assists children from the poorest sectors of the society through a foster-parent program. The program finds compassionate individuals/families from all over the world to provide sponsorship to children from developing countries, including the Philippines. CCF-sponsored children are the main beneficiaries of the housing programs. The housing units are titled under the name of the children, with the parents serving as custodians.

Nevertheless, parents have played a key role in the shelter programs. Through the Hermana Fausta Parents Association (HFPA), they directly participate in the planning, execution and evaluation of the CCF programs and services. In most of the projects, the HFPA is mainly responsible for the purchase of the land, working for the land conversion and establishing policies, rules and regulations for the shelter project. The parents have engaged not only in shelter programs but also in livelihood activities, responsible parenthood programs and primary health care services. The HFPA has been registered with the Securities and Exchange Commission since 1987 as a non-stock, non-profit organization.

To-date, HFDC has implemented three housing projects, with a fourth and fifth currently in the planning stage.

The CCF Himalaya Shelter Project

In 1983, HFDC pioneered in the implementation of a shelter program in Lucena City through a project funded by the Christian Children's Fund (CCF). This was known as the CCF Himalaya Shelter Project.

The project is located in a 1.9-ha area in Barrio Mayao Parada where HMFC built houses for 148 landless and homeless families. Each unit is a 36-sq m structure on a 100-sq m lot. It is basically a semi-concrete core house, with galvanized roofing. Toilet and bath facilities have to be constructed by the beneficiaries as equity. However, there is ample space for backyard gardening and other backyard projects.

As the first housing activity implemented by HFDC, the CCF Himalaya Shelter Program is replete with learning experiences which served the project staff well when they implemented later housing projects.

First of all, the project site was selected hastily. The site used to be a rice paddy and hence was not suitable as a residential area. People had to contend with floodwater and mud during the rainy season. Social infrastructure facilities such as water, electricity and roads were not available. The project also failed to provide for adequate income and livelihood opportunities so that the heads of the households generally had to commute to the cities to earn a living.

Another problem surfaced when some parents attempted to sell the units even though it was understood that the children were the legal owners of the property. As a precautionary measure, parents and children sign a memorandum of agreement where it is understood that the parents will take custody of the property until such time that the children, the real owners, shall have attained maturity.

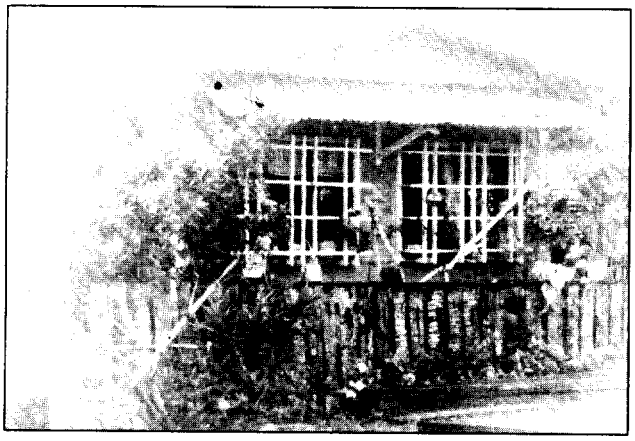
The CCF Hermana Fausta Shelter Project, Phases 1-4

The next shelter project implemented by HFDC is a four-phase project called the CCF Hermana Fausta Shelter Project.

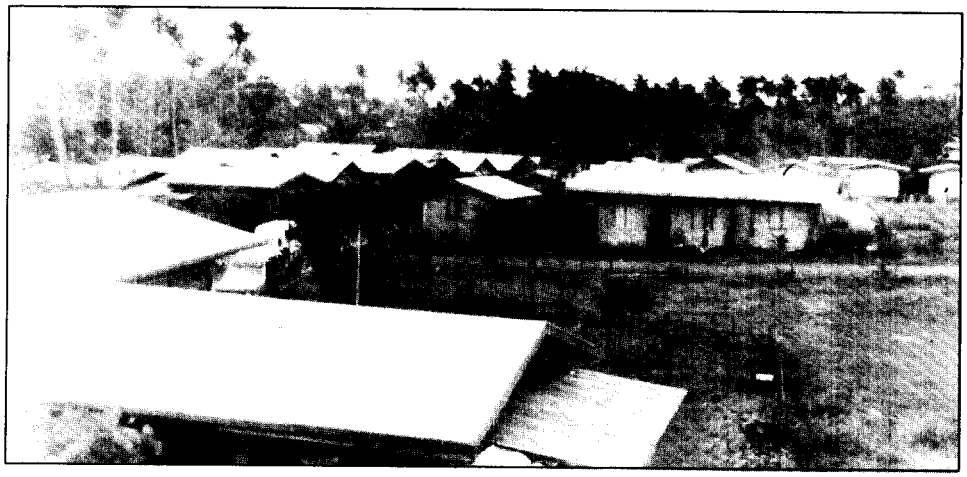
Phase 1, which began in September 1988, was located at Barrio Silangan in the municipality of Mayao. A 2.5-ha site was developed with a P476,000 grant from the CCF. The housing units were basically 24-sq m core houses, made of concrete hollow blocks and GI roofing, on 80-sq m lots. The houses were equipped with toilet and bath facilities. Each unit was priced at P23,000, payable to the Hermana Fausta Parents Association monthly over a period of ten years. A total of 29 houses have been constructed under Phase 1.

Phase 2 was implemented beginning April 1991 with a P1.1 million (US $50 thousand) grant from a USAID-PBSP program. The site of the project is a city government-identified relocation area in Lucena City.

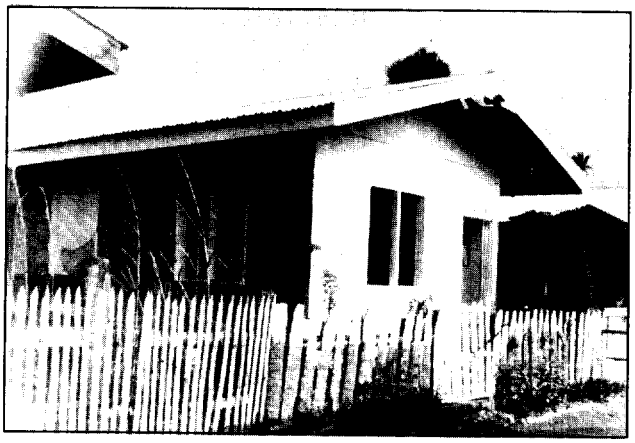
HERMANA FAUSTA DEVELOPMENT CENTER
LUCENA CITY



Exterior side of sample house in Phase I



Area view of Phase I



Exterior side of model houses in Phase II

The house-and-lot packages follow basically the same design as those constructed under Phase 1, but price has gone up to P 32,000 per unit. Beneficiaries get a housing loan at an interest rate of 18 per cent, which reverts back to the Parents Association to finance its projects. To-date, a total of 32 houses have been built.

Phase 3, still in the proposal stage, will also be carried out with another USAID-PBSP grant. **Phase 4**, on the other hand, is expected to be implemented from the funds of the Parents Association.

Mode of Operations for Phases 1-4

The CCF Hermana Fausta Shelter Project has adopted the following mode of operations for all its phases:

1. Families of CCF-sponsored children are eligible to apply for shelter assistance.

2. Those selected are required to attend orientation sessions about the project in order to develop awareness of their responsibilities as co-partners of the project.

3. Beneficiaries repay the loans according to the following repayment scheme:

   a. Loans are paid back over a period of ten years, at an interest rate of 18 per cent.

   b. A penalty fine of 2 per cent is imposed on defaults in monthly payments.

   c. Collection is undertaken by the Parents Association.

(See Annex A for a sample loan repayment scheme.)

4. Beneficiaries sign a memorandum of agreement which provides for their counterpart contributions to the project, including the following:

   a. To undertake partitioning and other construction to finish the dwellings.

   b. To take charge of the upkeep of the unit, including its surroundings.

   c. To take responsibility for the land titling and other legal procedures.

   d. To have water and electrical connections installed.

e. To actively participate in planning, organizing, implementing, monitoring and evaluating the housing project and related activities.

f. To mobilize the whole family to actively participate in all the above activities as well as in community projects.

5. Part of interest income is channeled to the Parents Association which in turn uses it for community services like drainage systems; monitoring expenses; and continuation of the construction of the housing units for other beneficiaries/members.

Problems and insights

Perceived as problems that set back the project are the following:

1. Due to the self-help feature of the project, some beneficiaries have violated construction specifications. For example, some have built their dwellings beyond the specified floor plan.

   For the next phases of the project, the self-help feature has been eliminated. Instead, units were constructed uniformly.

2. High rate of delinquency of repayment has been observed.

   To resolve this problem, payment scheme was made more binding through legal process.

3. The Parents Association which is the co-implementor of the project lacks administrative and managerial skills.

   A training program for the association has been proposed to develop the parents' capability to manage their projects.

4. Lack of water and electric connections continue to beset the beneficiaries.

5. There are also breaches of security, peace and order in the site.

   A homeowners association has been organized in order to mobilize the community to take initiatives to maintain security and order.

6. Garbage disposal was inadequate.

   An incinerator system was built in order to solve the problem of garbage disposal.

7. Some of the residents did not want to engage in backyard gardening.

   To make them more interested to cultivate the land, some incentives were given. Some beneficiaries were also encouraged to engage in communal farming.

Conclusion

Perhaps the most remarkable feature of the Hermana Fausta Shelter Program is the key role played by the beneficiaries themselves. The Parents Association serves as the main actors — in the purchase and conversion of the land, in the formulation and implementation of rules and regulations governing the community. Since only core houses are provided, the dwellings are completed through self-help inputs from the families.

Today, the projects are self-sustaining. Part of the funds generated from the amortization payments of the beneficiaries go to the Parents Association which in turn use them in implementing other community development projects.

USAID-HFDC SHELTER PROGRAM
Payment Scheme

Loan Amount P32,000.00

Terms ..... 10 years

Interest per annum ..... 18 per cent

YEAR	*LOAN BALANCE*	*MONTHLY PRINCIPAL*	*AMORTIZATION INTEREST*	*TOTAL AMOUNT DUE*
1st	P32,000.00	P266.66	P480.00 x 12	= P 8,959.92
2nd	28,800.00	266.66	432.00	8,383.92
3rd	25,600.00	266.66	384.00	7,807.92
4th	22,400.00	266.66	336.00	7,231.92
5th	19,200.00	266.66	288.00	6,655.92
6th	16,200.00	266.66	243.00	6,115.92
7th	12,800.00	266.66	192.00	5,503.92
8th	9,600.00	266.66	144.00	4,927.92
9th	6,400.00	266.66	96.00	4,351.92
10th	3,200.00	266.66	48.00	3,775.92
			TOTAL	P63,715.20

CASE STORY:

THE NEGROS ECONOMIC DEVELOPMENT FOUNDATION

Bryan Winston
Consultant
Cooperative Housing Foundation

The organization I work with is the Cooperative Housing Foundation (CHF), an international foundation based in Washington, D.C. Some three or four years ago, CHF was invited to Negros Occidental at the request of the government to put together a joint project with a long-established non-government organization called the Negros Economic Development Foundation (NEDF). The government approached USAID and a grant was arranged in which CHF would field a person here in Bacolod to assist in developing the institutional capability of NEDF in housing. NEDF's experience prior to this period was in agricultural and rural development.

When CHF came to Negros Occidental 15 years ago, the general climate in terms of shelter development was rather discouraging. It still is. But among NGOs, there were virtually none doing active shelter projects. There were some very small-scale efforts done by small NGOs but nothing that would relate to the mass-housing needs of the people in Negros. There were some government programs going on, but they were insignificant in terms of reach or focus. In fact, there are a couple of projects in Negros right now that can qualify as white elephants that were put together by the NHA. In one project in particular, there are some 130 houses sitting in Bacolod City that are empty today. Built about three years ago, they were essentially a joint project between NHA and a private contractor. They forgot to take into consideration that people need water and electricity and when they found out that they could not provide water to the site, the houses just ended up sitting there. Typhoon Ruping took care of some of the houses about a year ago. On the whole, it may be said that the climate for shelter in Negros was quite discouraging.

Other relevant issues on a macro level have been brought up earlier in the discussion today; i.e., concentration of resources in Metro Manila; the bureaucratic maze that constrain programs; limited private sector participation. It must also be mentioned that the private sector involved in housing tends to work on a higher market than the urban poor and consequently the needs of the urban poor in Negros are not really being addressed.

The partnership between CHF and NEDF resulted in a program called Community Development and Shelter Program implemented from 1987 to 1990. The grant from the USAID provided it with a seed capital of P2.5 million with which it was able to self-finance its initial project. This is significant, because among the

problems faced by NGOs involved in housing, the whole question of capitalization is very critical. Clearly, we started with a big advantage.

The first few months of this year, what I had to do was to identify local resources of land and financing. I found the UHLP to be an excellent vehicle for the poor to access permanent long-term financing. I echo what Bill Keyes said earlier that one of the major impediments to our work is the inaccessibility of development or interim construction financing. And so our first few months were spent looking at the range of programs that were out there, some of which look good on paper but turn out to be unworkable when one tries to make use of the program. The other thing that we tried to do during this period was to identify partners in the community that were interested in developing low-income housing projects. And we did find groups, individuals and institutions that shared the same goals we had. Many of them had resources. On the basis of this educational process, we recognize that the most critical factor that we can bring into the process is our technical capability. I think that is the significant part because when we look around, we see that there are very few institutions with capability to provide these types of services.

What I would like to do now is to go a little into the nuts and bolts of some of the good and bad things that happened to us in implementing the NEDF and other projects.

The NEDF subdivision was done on land donated by the Foundation to the project. When we first started constructing, we were building 36 sq m houses on 100-sq m lots. As inflation increased over the years, we had to downsize the house. Our standard house now is down to 28 sq m. But we take a similar type of approach that Freedom to Build uses. We have developed a set of incremental designs that range from 20 to 40 sq m. With four intermediate sizes, people can readily expand the units with their own resources at a later point in time. So, our units have been downsized; our units are now core houses whereas we started with structures with interior partitions. The problems that we experienced in the early work was the slow difficult processing period which we are taking steps to address.

The other issue that affected us was the fact that we had a small capital revolving loan fund. Consequently, we would build houses and then end up sitting around waiting to take the money out from UHLP. For the second phase of the project, what we are doing is to put together a proposal for 226 houses that we have sent to the NHMFC through a new initiative that they have directed towards private developers which they call "Special Off-site Non-Homogenous Community Project." Basically, NGOs and foundations as well as private developers can access this pool of developmental funds.

(Other learning experiences from the NEDF project are discussed in a supplementary paper by Mr. Primilo Solinap of NEDF see Annex A.)

Another project we started to embark on recently is called the Negros Development Workers Multi-Purpose Cooperative. This program is being pursued through

a local cooperative initiated by a federation of NGOs in Negros. The members of this cooperative represent about 20 NGOs and all of them are social development workers. The project is being financed through the Home Insurance and Guaranty Corporation (HIGC) through their cooperative housing program. I think among programs available for NGOs and low-income families, this appears to be a very promising alternative. The project has actually come together very quickly, which is both an advantage and a disadvantage. We found HIGC to be extremely flexible, professional and efficient. On the other hand, the project is moving a little faster than the cooperative could understand and come to terms with all the issues that were being put on the table and in terms of moving towards the actual physical development of the site.

Another project that we are involved in is a joint venture with the province of Negros Occidental and the local municipality. In this particular case, the province is putting up P 5 million in developmental financing; the municipality is making available the land; and our organization is handling the technical assistance and physical implementation of the project. The difficulties that we had with this project relate to the Department of Agrarian Reform (DAR) conversion; it is time-consuming and difficult. However, in our particular context, I think that when you have learned how to deal with DAR, it is possible to move the conversion process along at a reasonable rate. (That position is probably a minority voice, though.) On the technical end, the project has moved along very smoothly. We are ready to build the project but we have encountered some administrative issues that are holding the project. In our particular case, the Commission on Audit (COA) has said that provincial funds cannot be pushed directly to an NGO. The COA suggested that we put the project together on a turnkey basis. This means that we need to come up with the initial funds after which the province will reimburse us for the physical development on the site. Our position to them was that we did not have those funds and that it was not a practical alternative. What we did next was to ask COA why the school buildings project could utilize NGOs while the social housing programs couldn't. We were informed that the Presidential Social Fund is the source of the school building program and thus goes through the executive department and consequently receives in essence special privileges that other types of government projects don't have. In other words, COA regulations could be bypassed on that type of project. And so we asked whether we should have our project endorsed somehow by the Presidential Social Fund. What COA finally advised us was to get a letter from Malacanang that basically authorizes our project and organization to use government funds. And so we are taking that route. We're going through political channels to see if we can get that type of endorsement. Our other strategy is to be patient and hope that the new Local Government Code would eventually do away with that COA regulation which prohibits government funds to be channeled through NGOs.

Another project that is in the early stages of development is something that we are doing with a large sugar mill. The mill is interested in putting up a housing program for its employees, numbering about a thousand, most of whom are low-

income earners. We are still in the early stages of doing the physical development plan for the site. But it appears that the Social Security System Corporate Housing Program would be a viable vehicle for us to work on this particular project. Here again, as an NGO, what we are providing is our technical assistance capability or ability to physically implement the project. On the other hand, the milling company, which is our resource partner and sponsor of the project, is responsible for the cash equity and land requirement.

There are a few other models that we are trying to put together. But I won't go through them in depth. For one, we are trying to put up a project for sugar farm workers. We are trying to develop a model that will borrow a little bit from land reform and use a healthy component of self-help towards some sort of core-housing strategy.

In terms of mid-term strategies, one of the things that are becoming obvious to us is that the types of projects that we are putting in the ground are becoming more and more costly. In essence, they are getting farther and farther away from our original objective of reaching out to the urban poor. And our primary strategy to address that is to start moving away from projects with housing components and move much more aggressively into sites and services projects. Other avenues that we will continue to pursue are joint venture projects, particularly projects that come from cooperatives, groups of local people coalescing around their need for affordable housing. Another aspect that we want to pursue is to develop strategies for generation of more local resources in order to promote the types of housing project that we are interested in doing. I think that towards this direction, credit cooperatives in the Philippines is a very positive movement. Most credit cooperatives are spending about 20 per cent of their loan portfolio on real estate loans to their members. And I think that we are going to see in the next few years a very significant increase in resources available from this source. Finally, we are also looking for ways of increasing our resource base so that in some cases, we can be self-financed and in other cases, we can bring more resources to the table when joint ventures are set up. With more sources, we can have more voice in terms of shaping the type of program that we are involved in.

ANNEX A

SOME LEARNING EXPERIENCES IN IMPLEMENTING THE COMMUNITY DEVELOPMENT AND SHELTER PROGRAM

Primilo Solinap
Project Manager
Community Development and Shelter Program
Negros Economic Development Foundation

Let me go over some of the experiences that we had in implementing Grant 1 of the Community Development and Shelter Program which the NEDF had with the CHF.

Grant 1 began July 1987 and ended January 1990. The first thing that we did was to look for sites. Of seven prospective locations, three areas were selected: two for community upgrading and one for relocation. In the relocation project, we provided house-and-lot packages to our beneficiaries. In the upgrading project, we built the houses and developed the community.

The criteria we used in site selection were the following: (a) cohesiveness of the group or their willingness to be organized into a housing cooperative or association; (b) felt need of the community for housing; (c) ability of the beneficiaries to put up counterpart in cash, kind or labor; and (d) the willingness of the local government to support the project.

After we selected the groups, we gave various seminars on cooperatives and trained the leaders in cooperative and project management. We assisted the group in obtaining their legal identity. Then, we helped them register with the Cooperative Development Authority. Of course, we wanted to sign an agreement with them and they needed to have a legal identity. We also provided financial assistance to the cooperative. In turn, the cooperative extended the loans to the beneficiaries who were selected on the basis of the following: (a) a felt need for the construction of a new house or for the repair of an existing dwelling; (b) capacity to pay, considering that 20 per cent of income should go to repayment of the housing loan; (c) income must not be more than P3,500 a month; (d) active membership in the cooperative; and (e) willingness to put up counterpart in cash or kind.

For our upgrading project, we extend cash loans from P5 to 25 thousand per beneficiary, payable in seven years at an interest rate of 15 per cent. It was in 1988 that we first implemented the financial program. At the end of Grant 1, we have assisted 56 families and today repayment rate is only up to 46 per cent. On the relocation project, we used the long-term financing of the Unified Home Lending Program (UHLP) and we developed a house-and-lot package worth P60 thousand.

We used the Batas Pambansa 220 standard in our subdivision. The P60-thousand house-and-lot package would have cost P120 thousand today. We have built 45 such packages.

From implementing Grant 1, we learned quite a few things. We found out that we were lax in monitoring our cooperative. In order for us to collect money, we realized that we should be more strict in the monitoring process. We have poor repayment performance because our selection process and criteria tended to be lax. We also failed to provide for income-generating activities to improve the members' ability to pay.

Secondly, we need to improve the quality of our houses. Some of our beneficiaries come to us with complaints regarding the products we deliver to them.

Finally, we have a slow take-out from NHMDF because of defective loan processing. One of the things that we did to resolve this problem was to call up Bill Keyes (of Freedom to Build, Inc.) to ask him to give us an in-house training on loan processing. He was most kind to do that. And we are hopeful that our future take-outs would be a lot better.

PAGTAMBAYAYONG, A FOUNDATION FOR MUTUAL AID

Rebecca G. Badajos
Coordinator for Human Resource Development
Pagtambayayong Foundation, Inc.

Background

Pagtambayayong Foundation, Inc. (PFI), an offshoot of an informal housing cooperative experiment initiated by the Cebu staff of the Community Organization of Philippine Enterprises (COPE), was operationalized in 1982. Pagtambayayong is an accredited developer of the National Home Mortgage Finance Corporation (NHMFC) and originator for both the Unified Home Lending Program (UHLP) and the Community Mortgage Program (CMP). Pagtambayayong promotes self-reliance among its project participants or community beneficiaries, maximum group participation and collective leadership.

Pagtambayayong provides technical, financial and social services through the interrelated programs of housing, livelihood, appropriate technology, mutual fund for socialized housing and institution-building program.

The Foundation has ventured into special projects on the construction of school buildings for the Presidential Management Staff, Typhoon Rehabilitation Center, Court of First Instance Housing, Panagdait Homes for the Ayala project relocatees and the Integrated Social Forestry.

Beginnings

Let me tell you how we started.

We began with a group of social development workers together with leaders of different urban poor organizations. At that time, we were looking for a piece of land where poor families could construct their own houses. We finally found a 6,200-sq m area which we purchased for P10 per sq m. The group of 42 landless families were hard-pressed finding the resources to buy the property but in time were able to raise the required amount. That was the first self-help project of Pagtambayayong.

From that time on, we realized that if a project like that could be pulled through, then the same could be done for other poor, homeless communities in Cebu. Subsequently, we conceived the idea of a foundation that will implement low-

income housing projects. Since then, Pagtambayayong has been able to organize ten self-help housing projects. We are also helping 62 other non-government organizations in implementing CMP projects.

New Approach

Very recently, we developed another approach in housing which we call the Mutual Fund for Socialized Housing. Under this program, we organize landless families within the boundaries of Metro Cebu. Each family is asked to pay a reservation fee of P2000 and issued a priority number. The fee will be used to develop a project for the first batch of 50 families. The take-out for the houses of the first 50 families will then be used to build the next priority batch of houses.

The Hillviews Project

The Hillviews Association is the third self-help housing project organized in 1980. This is a three-hectare site housing 178 families. We were able to acquire the property in 1983 with financing from the Aboitiz program. As of 1988, the property has been fully paid. The houses were constructed with a grant from the USAID. The site development was financed by Pantambayayong and the community association.

To give you a clearer picture of how we work with the community, a representative from the community organization will talk about her personal experiences and views. (See Annex A.)

HOW I CAME TO OWN A HOME

Pat Alpez
Representative
Hillviews Association

In 1980, a responsible, energetic young couple encouraged squatters in Cebu City to organize themselves into a community organization.

I was one of those squatters. At that time, I could only dream of owning land, let alone a house. Today, I am a proud owner of a house and lot. The house, minus the lot, cost me P100,000.

At first, we were composed of only 300 members. We were from various areas of Cebu City. Today, many houses are being constructed. These are financed from a USAID grant.

The housing loan of P30,000 was not enough to finish a house. According to Mr. Francisco Fernandez (of CMP), P30,000 is enough to build only a core house. I did not even know what core house meant.

So we borrowed. Those who were interested, especially those from the squatters area, took advantage of the opportunity given by the USAID.

The first group was able to borrow P30,000 each while the second group was allotted P45,000 each.

As Ms. Badajos told you, the development project for this site will cost P1.5 million. This amount is supposed to be equally divided among us, to be paid in installment for 25 years.

I took a loan of P33,000 and am paying 24 per cent interest. It is quite a fee, but still we are very happy. Without help, I think I could not have managed to own a home of my own. We are very grateful to the organizations which helped us and granted us the loan.

CASE STORY:

THE DAVAO INDEPENDENT HOUSING ORGANIZATION

Paul Dominguez
Chairman of the Board
Davao Independent Housing Organization

Welcome to DIHo. DIHo stands for Davao Independent Housing Organization.

First of all, let me give you a very brief history of our foundation. We were organized in 1987. The person who served as a catalyst, who got us all together was Dr. Davit de Groot. Dr. de Groot is now a USAID consultant in Kenya but he spent the better part of 10 or 12 years in Davao as a project officer of a World Bank project. And he was very much involved in squatter upgrading projects here. When he left Davao to return to the United States, he got people together, mostly his own friends in Davao and suggested that a foundation be formed to implement some of the ideas that he has developed and which many of us shared. For instance, speaking for myself, my first job straight out of the university was in a housing foundation, Davao Development Foundation, which was started by a handful of businessmen in Davao in 1970. Over the years, we remained involved in housing. And when David came out with the idea, we readily supported him.

We had no money, no equity. So we started trying to put the project together. One of the first things we did was to approach the company which owned the land which also happened to be the company which I ran. We got the shareholders to agree to sell us the land and take payment 24 months after the land was delivered. That was the first key element that made the project happen.

The second thing we did was to go to a rural bank in Davao and take out a P1.5 million loan. This was our capital; we were in business. And then we came out with a design. The design we used was something that was already being implemented by the SIR project. We started in 1988 and since then we have developed in this property — on both sides of the road — 270 lots on which we have built 133 houses.

We started offering the house-and-lot packages in 1988 at P60,000 per unit. Due to rapid rise in construction and land development costs, the price went up to P75,000 in 1989. Currently, we are marketing the units at P100,000 each. The average lot size is 150-160 sq m. The floor area is 29-32 sq m. We have absolutely no difficulty marketing the project. In fact, there is always a waiting list. The design, layout and location are very acceptable.

There are four things that separate us from other housing projects. First of all, we are unique in that the people behind the project is a curious mix of businessmen, professionals, one politician and, of course, social development workers. A mix like that is easier to pull off in the provinces than in the big cities. We also happen to be mostly neighbors. We did this on our initiative and we were prepared to take risks to see the project through.

In 1970, there was an anthropologist doing research in Davao. His name was Dr. Robert Hackenberg. Even at that time, he was already predicting that the housing problem in Davao was going to be progressively more serious. His finding was that the pattern of in-migration and of squatter development mirrored the developments in other secondary cities all throughout Asia. In fact, percentages of squatter population in these Asian cities were almost exactly the same — around 25 percent. So we felt that something had to be done.

The second characteristic that makes us different is our land development design. You will notice that there are no vehicular roads in front of each house. Instead of investing in an expensive road network, what we have done is to try to provide better drainage, to make drainage as permanent and as maintenance-free as possible. Also, we have provided concrete footpaths for most of the houses. As you go around this place, you will see that we provided parking areas, although we do not anticipate that all the people who live here will own a vehicle. In fact, we expect only about 15 percent to be car owners. Anyway, the subdivision is only a 15-minute walk to a vehicular passage.

The house design is also different. As you can see, it is basically a two-storey wooden starter house with the first floor unfinished but ready for self-help expansion. We found through research that if you leave a family to build a house on its own, it will probably build a house like this. This is the type of house you see in many squatter communities where there is very limited land. And so we built the house this way. We found this design very cost effective. With only a slight increment in total expenses, one can easily wrap around the ground floor, modify and improve it according to his needs. As you can see, the architectural urgings of the various families living here have taken them to all kinds of directions — in designs, shapes, colors. We do not impose limitations; they can do anything they want. As far as I know, in Davao, we are the only ones who have a project like this. It has attracted a lot of attention and we do not have any problem marketing the houses.

Unfortunately, price inflation of wooden construction materials has been greater than that of concrete. The price of land development has not increased as much as the price of house construction. And that is the problem. And so we have started conceding to a one-storey house design. All the one-storey houses that you see on the other side of the road were built by people who opted to buy land rather than a house-and-lot package. They built these houses themselves. Unfortunately,

a lot of them built one-storey hollow-block houses. But we are still trying to keep the design. We are doing a lot of experiments, like replacing the wooden posts with concrete. But we are fighting a losing battle because lumber costs keep rising.

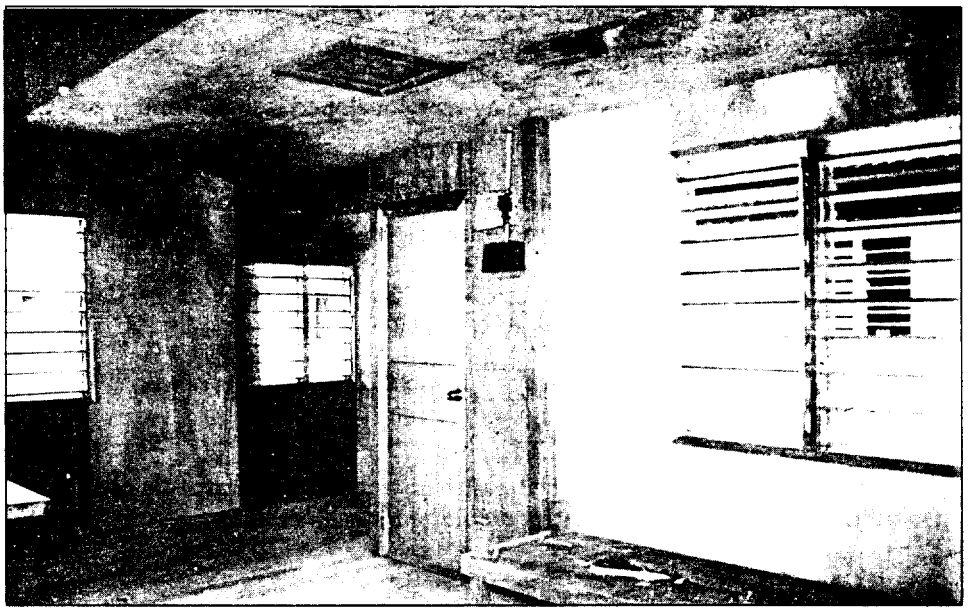
The last thing which sets us off from other projects and which we are very proud of is our organization. We have a small, very cost-effective organization which I think would be able to survive even in a commercial environment. We have been able to build a small organization; we build most of the houses ourselves; we do the land development using small contractors. Construction costs have remained very competitive.

About two years ago, we got a grant from USAID which enabled us to build at a much faster rate. We are now no longer completely reliant on small loans from rural banks. The grant helped us a lot. But we are now facing a big problem: we need land. Our terms of agreement with USAID do not allow us to use the money for land purchases. We have not found other landowners who are willing to sell us land and will not mind getting paid two years later. We found one, though, that is willing to accept 30 per cent downpayment and to be paid the balance in 12 months.

Our resources are very limited and we do not have the equity to hold on to land — which by the way is also inflating at a fairly fast pace — in order to have land inventory so that we can build on a regular basis. We are now capable of building 150-200 houses a year with our resources and with the grant from USAID. Land-purchase issue is something that we are trying to work out. You know, we are talking with PBSP and other organizations that may be able to undertake bridge financing of land purchases. This is because it takes six to nine months from the time that we acquire title to land to the time that we can actually begin selling houses. And our foundation is wary of using commercial bank money. We can still go to the bank and borrow money, but it will just inflate the cost of the houses.

That is a very general overview of what we are doing here and the problems we are facing. I and my other colleagues in the foundation will be glad to answer any question which you might have.

Exterior view of model house



Interior view of model house

HABITAT FOR HUMANITY: AN EXPERIENCE IN DUMAGUETE CITY

by Engr. Gregorio L. Uymatiao, Jr.
President
Rtn. Martin "Ting" Matiao Foundation

Introduction

Dumaguete City, the capital of Negros Oriental, has an area of 33 sq km and a population of 82 thousand. Like any growing city, it has its share of squatter and shanty problems. Because of this, the city has planned to put up housing communities in each of the 22 rural barangays that surround urban Dumaguete. The existing 2,400 families for which these communities will be built are either squatting or renting on public and private lands and cannot afford decent houses. Such housing communities will have a complete and strategically located basic services such as schools, sports and health facilities, market and public transport services, including a good network of roads. To put into actuality what has always been a dream poses a big challenge to the city administration.

To a certain degree, the city administration has succeeded in starting these housing communities with the support of certain sponsoring groups. At present, there are four rural barangays that serve as sites for some of these communities with the land provided by the city government. These are the following:

The Bliss Housing in Barangay Talay was developed last 1978 and is presently accomodating 46 households.

The Balugo Habitat, sponsored by the Habitat for Humanity, was started in the year 1988. It has a total of 88 housing units.

The Scandinavian Children's Mission Housing Project in Batangay Candau-ay was started last 1990 and has a total of 98 units.

The Batinguel Habitat by the Habitat for Humanity was built in 1991 with a total of 120 units.

With the passage of time, the city administration will pursue its objective of providing, at the very least, a decent dwelling for each of its indigent families.

The Sponsoring Agencies

Habitat for Humanity International is an ecumenical Christian housing ministry which provides capital and co-workers to enable families with inadequate shelter to own simple, decent homes. It was founded in Americus, Georgia, U.S.A., by Millard Fuller — a millionaire at age 30 who "sold all he had and gave it to the poor" — and his wife, Linda, in 1976. Fifteen years later, Habitat has projects in over 30 countries around the world, building at a rate of three houses per day. There are at present six projects in the Philippines: Balintocatoc, Metro Manila, General Santos, Midsayap, Dumaguete and Saguday.

The City Government of Dumaguete played a major role in launching the project. In August 1988, the mayor designated the 2.4-ha idle government land in Barangay Balugo as housing site. In October 1991, the City again acquired a 2.5-ha lot along the Banica River in Barangay Candau-ay and Cadawinonan. This is for Habitat's second project site, which would accommodate another 120 households. Other assistance provided by the City so far includes the subdivision survey, improvement of roads, transportation, livelihood program and facilitation of electric power installations. This partnership actualizes the city government's concern for its homeless and its commitment to improve their living conditions. "A City Without Shacks" was the ultimate goal.

The Shelter for Homeless Children Inc. (Peace Shelter) is a non-profit, charitable organization serving the street children of Dumaguete and their homeless families. Its main objective is that of developing caring communities in the city, thereby empowering the disadvantaged poor to care for their own neglected and abused children. Through its four parent-organizations in barangays Taclobo, Calindagan, Looc and Balugo, Peace Shelter serves as the initiating and facilitating agency of the housing project.

Description of the Project

Organization/Management

The governing body of the project, the Local Habitat Committee, is composed of 12 community leaders from each of the four barangay organizations and eight consultants selected by the leaders themselves. The group of consultants includes an architect, an engineer, a business professor, an accountant, a pastor, a home economics professor, a lawyer and a community worker. All of the members of the committee volunteer their time and talents and receive no financial compensation for their work.

Beneficiaries/recipients are the homeless families living in the squatter communities of the city and those with sub-standard housing living in the rural barangays.

Important Components of the Project

1. No profit/no interest - Low-cost houses are built for qualified home-owners (needy families too poor to secure a bank loan but must have an average monthly income of P2,000 to 3,000) and sold at no profit. Cost of the houses are repaid over a 20-year period, with no interest charged to the beneficiaries. Families have three models to choose from: Model A, costing P28,000; Model B, P25,000; and Model C, P23,000.

2. Fund for humanity - The family's monthly repayments (averaging between P110 to 140, depending on house model) go back into the Dumaguete Fund for Humanity and used to build more homes.

3. Partnership - Selected families are required to work a minimum of 300 hours on their own homes to reduce the cost of labor. They also help build other Habitat houses, in a spirit of give-and-take.

4. Donations - Habitat offers to the affluent a way to share their abundance with those who have less in life. It operates entirely on private donations and no-interest loans; no government funds are used. The government provides land through either a donation or a lease-purchase arrangement.

Qualifications/Screening

A non-discriminatory family selection policy is followed, where neither religion nor ethnic background determines who receives a Habitat house. Families are chosen on the basis of housing need, size of family, ability to pay, financial history, character, willingness to participate in the program and community involvement. The last criterion means that the applicant must be a member of any of the four parent-organizations sponsored by Peace Shelter. The amount of sweat equity an applicant has rendered determines the priority rank he gets when the units are finally distributed.

Benefits/Significance of the Project

For the disadvantaged poor:

1. It provides opportunities for housing at affordable cost.

2. It fosters dignity and self-worth among the poor and hastens movement away from interdependence with others through community responsibility and mutual sharing.

3. The self-help project, focused on family participation, is a crucial first step in their economic development, out of which other phases of development can grow.

For the government:

1. The project is the only readily available means to address the problem of homeless people in the province.

2. It reflects a sincere concern of the local government for the needs of the poor and opens the door for the private sector to work as a partner in the project.

3. Its non-profit nature does not expose the city's resources to risks because of assured recovery of the investment.

4. It provides the city government with a source of revenues, i.e., from the proceeds of the monthly amortization and from real property taxes generated.

5. The relocation prevents losses arising from squatting occupancy problem.

For the community:

1. The project disperses the urban poor to rural barangay, thus decongesting the crowded city.

2. Parallel livelihood project scheme can be emulated in other barangays and towns as a component of the city's socio-economic development process through mobilization of other resources and agencies.

3. As a pilot project, it provides valuable expertise needed in the sub-urban areas, including:

    a. hygiene and sanitation
    b. peace and order maintenance
    c. socio-economic upliftment, i.e, maintenance of a wholesome and caring neighborhood where NGOs, GOs and needy constituents work hand in hand to achieve a common goal

4. The project builds not only houses but also community relationships in the true *bayanihan* spirit of caring and sharing.

5. The project provides a model on how a community can work with NGOs, the private sector and government towards a common goal.

Housing Design

The Habitat Model A design (See Fig. 1) is the most popular choice of the dwellers. It has a 25-sq m plinth area and an 18-sq m sleeping quarter at the mezzanine floor. The ground floor includes a toilet and bath and a bangera.

Habitat houses are basically made of indigenous materials. The roofing is made of *saksak* shingles which is better than *nipa*. Initially, a 1/4" marine plywood painted with elastomeric paint with the joints sealed by a roof sealant was used. But this idea didn't work out well. The walls are made of hollow blocks and coco lumber sidings. The posts, walling studs, rafters and purlins are also made from coco lumber. The flooring is of 2-1/2" concrete. Doors and window frames are made from air-dried lauan to minimize warping while marine plywoods are used for the surface panels. The flooring of the mezzanine is made either of 3/8" marine plywood or 1" thick coco lumber. Homeowners take charge of partitioning and painting. A one-sq m septic tank is provided to each household.

Models B and C have the same plinth area as Model A, except that they are one-storey. Model B includes partitions, while Model C does not.

With the house occupying only a fraction of the allotted 150 sq m, families can still do a little backyard gardening.

Conclusion

Land in the rural barangays currently cost P30 per sq m. Thus, a 150-sq m lot will cost only P4,500, which, in this case, is provided by the government. Habitat for Humanity provides the cost of the house at US $1,250 per unit. With the no-interest/no-profit policy, the government and Habitat make these houses viable for the urban poor. If interests were to be considered, the present P140-monthly amortization would triple and therefore put the units out of reach of most beneficiaries. The government will do well to consider budgetting interest as part of its social overhead.

The city foresees two major problems — affordable land and funding from sponsoring groups. Because of the rapid development taking place in the province, the cost of land is accelerating. The sooner the government acquires property, the better its chances of building more housing communities. Funding from sponsoring groups may also have its limitations. At present, the government's Unified Home Lending Program (UHLP), even at its present interest rate of six per cent, is beyond reach of the clientele.

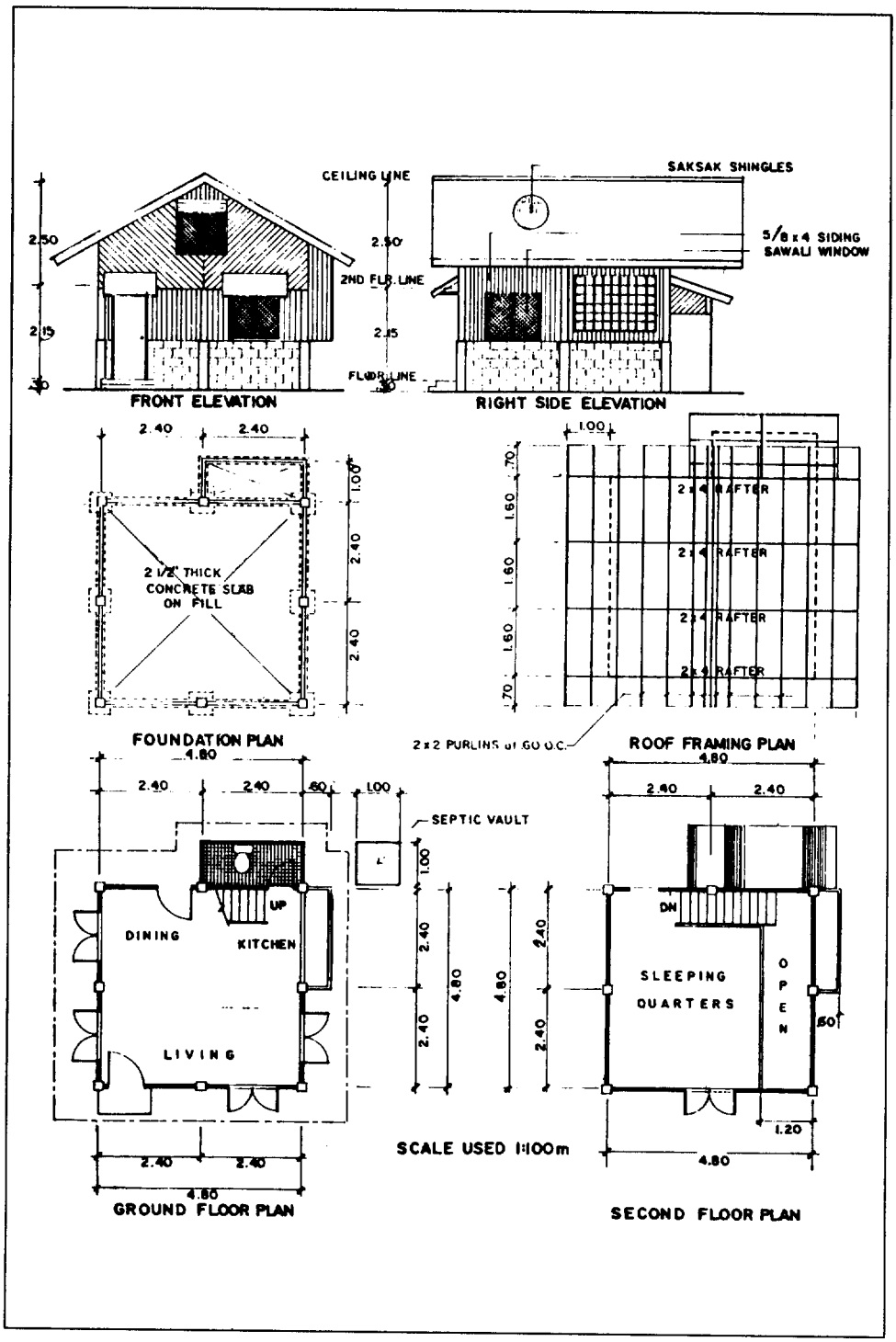


Fig. 1. Habitat House Housing Plan

Habitat house

Habitat house

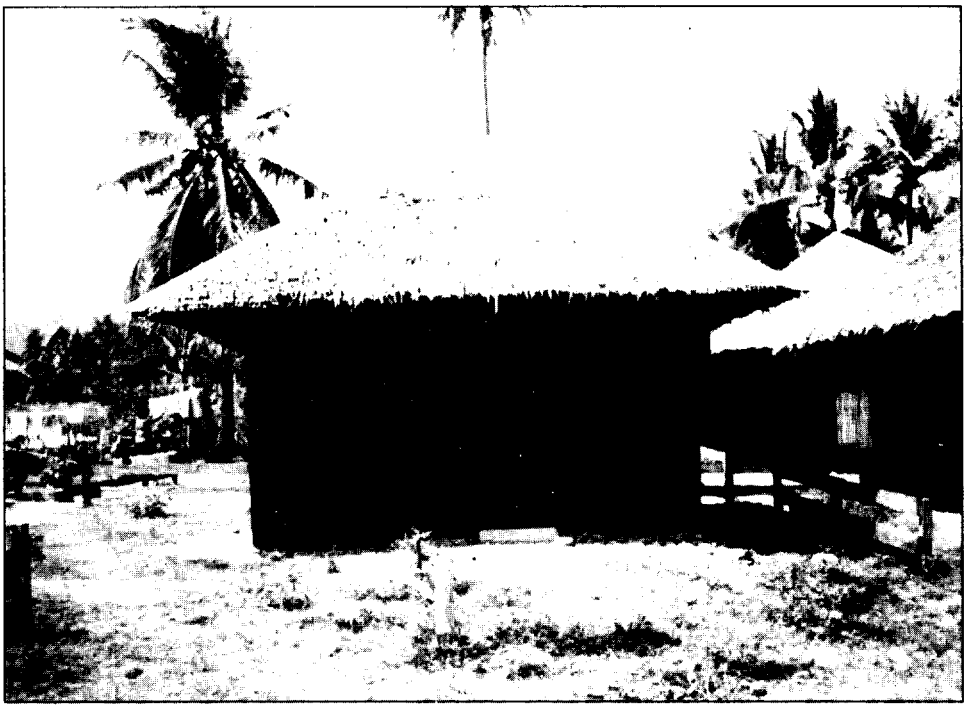
Side Elevation

Interior of Habitat

Stair to mezzanine

Habitat house
2nd floor

Scandinavian homes.



Scandinavian homes.

CEBU CITY GOVERNMENT EXPERIENCE IN LOW-INCOME HOUSING

Arch. Isagani Salgado
Chief
Department of Planning and Development
Cebu City Government

Cebu is considered a major urban center in the Philippines, next to Manila. During the last decade, urban growth was quite rapid in Cebu, intensifying use of land. Then, few people outside of Cebu were aware of the economic boom taking place in the city. Today, however, a lot of people come to Cebu to look for jobs. But because of lack of proper skills,they become squatters in the city.

It is estimated that the city's present population is 700,000, based on a projected growth rate of about 3.1 per cent. At least 20 per cent belongs to the squatter population. If this is translated in terms of housing needs, housing backlog is projected to be between 20 to 25 thousand units. The need for housing can not be filled at present.

Cebu Experience in Housing

In 1978, under the administration of the late President Marcos, the World Bank, through the International Bank for Reconstruction and Development (IBRD), created the Slum Improvement Relocation (SIR) Program in order to alleviate the plight of squatters in the urban areas. Later that year, consultants were sent to Cebu to assist the city government and the National Housing Authority to provide on-site relocation. The project involved 7,000 families in five barangays — Ermita, Alaska, Suba, Pasil and Sawakalero. All in all, the sites comprised 28 ha of land.

The on-site relocation project allotted an average area of 25 sq m per family to make the units affordable to the beneficiaries. The lots were priced at P35 per sq m. To further improve affordability levels, the project featured a livelihood component. However, due to lack of management skills, the livelihood program did not prosper. Because of this, the beneficiaries remained economically depressed. In turn, there was a high rate of default on the monthly amortization of the lots. At present, however, according to the manager of SIR, repayment rate has improved.

The second program was the series of BLISS (Bagong Lipunan Sites and Services) housing units under the Ministry of Human Settlements. The project provided not only land but also core houses. The beneficiaries were squatters on an old, abandoned road who were evicted to give way for the reopening of the road. To relocate the displaced households, a 2.7-ha site in Labangon was identified by the

city government. Each family was provided a 250-sq m lot. The core house was a 5x6 m structure of pre-fabricated materials, with asbestos generally used for sidings and roofing. The asbestos was transported from Manila, through the NHA. Again, a livelihood component was provided, only to flounder later due to lack of proper management. Again, affordability levels of the beneficiaries did not increase.

Another program that was put in place was the Urban BLISS in Barangay Luz and Hipolibo, covering some 3,400 families. About 14 ha of land was provided. The NHA took over management of this, but until now, ownership and amortization remain vague. Because it is adjacent to Ayala, considered the growth area in Cebu City, the cost of land in the relocation site skyrocketed to the unrealistic level of P15,000 per sq m. In Lahug, there was also an NHA-administered project for provincial employees comprising 107 units. It is doing better in terms of repayment.

From our various experiences, we find several issues to be critical in low-income housing.

The most critical issue is the prevailing high cost of urban land. For the last two years, the number of applications for building permits for residential purposes dropped. However, it is hoped that next year, housing activities will pick up.

The second issue has something to do with the high cost of building materials. Right now, there seems to be acute competition between commercial users and residential users, for example, in the demand for cement. There is even a trend towards high-rise buildings.

Thirdly, the NHA has not paid much attention to Cebu City. The same is true with the national government. Cebu receives a low share of capital expenditure from the national budget.

Housing vs. Zoning

At present, the city government is faced with a dilemma between housing and zoning. For example, the Presidential Commission for the Urban Poor has introduced the Community Mortgage Program to the effect that sometimes there is violation of zoning and building ordinance. Prescriptions on areas for residential use are sometimes nullified. The city government tries to strike a balance between programs and resources to rationalize the use of land. The city government itself is observing certain principles. Perhaps, a better program can be thought of to provide housing for the urban poor.

Proposals

1. To establish clear-cut policies to prevent proliferation of squatter colonies.

2. To establish strategies for environmental protection and enhancement to promote ecological balance in housing programs.

3. To make arrangements with the Department of Environment and Natural Resources for the turn-over of all lands within Cebu to the city government in order to rationalize the planning and zoning of some areas that have been improperly distributed and used.

4. To strengthen the capacity of the local government to allocate funds for low-income housing. Hopefully, the new Local Government Code will provide leeway for the city government to generate and allocate funds for this type of housing programs. The city government also hopes that, like the Presidential Commission for the Urban Poor, it will be authorized to acquire land for housing the urban poor.

5. To provide incentives for the private sector to engage in low-income housing. The necessary funds for mass housing should be made available to them to ease housing backlog.

6. Finally, adequate funds for R & D should be provided, particularly for the development of indigenous building materials and pre-fabrication of low-cost housing components.

In conclusion, the key to solving the affordability level of low-income people in need of housing is economic progress. This is what the local government is trying to do. It is trying to attract more investments to the city of Cebu in order to provide more income and employment for the people of Cebu.

C. BUILDING DISASTER-RESISTANT HOUSES

DISASTER-RESISTANT CONSTRUCTION OF LOW-COST HOUSES

Dr. Satyendra P. Gupta
Senior Research Scientist
Asian Disaster Preparedness Center
Asian Institute of Technology

Introduction

Natural calamities, like cyclone, flood and earthquake have been causing havoc in different regions of the world and widespread damage have occurred to life and property in the shortest possible time. Anything from an individual building to a complete village, town or city can be destroyed in any of these disasters. Among all the natural disasters, earthquakes have caused the greatest loss in human lives and in small dwellings with unparalleled suddenness. The earthquakes of Mexico City, Armenia, Iran and, most recently, in the Philippines are reminders. From the past experience, it appears that earthquakes are the most disastrous of all natural calamities, catching people unprepared. The seismic hazard is a natural phenomenon and is related to identifiable geographic areas. Seismic risk is a humanity-related problem and the risk exists only when something of human value is exposed to a given earthquake. The effect comes in a variety of ways depending upon the strength and nature of the shock, the nature of the underlying subsoil and rocks, the characteristics of the building, manner of construction, the quality of maintenance and, of course, the size of the earthquake. In the Asia-Pacific region earthquakes have destroyed a large number of dwellings and small structures because of its poor construction and non-seismic features. Even in a moderate earthquake, thousands of houses become inhabitable.

Typhoons pose a real problem to some countries of a certain geographical location and physical environment. An annual average of 30 typhoons occur in the north-western Pacific Ocean.

About 20 typhoons occur in the Philippine area of responsibility and an average of 9.2 actually cross the country. Moreover, an average of two typhoons do not hit land but cause damage. High winds of typhoons generally cause damage to structures and vegetation. The following discussion will be restricted to low- cost constructions only. The buildings considered here are those which are spontaneously and informally constructed in various regions in the traditional manner with little or no intervention by qualified engineers and architects in their design. Moreover, broad principles have been outlined which can be used for low-cost construction.

Materials for Construction

The materials which are generally available for construction of dwellings are earth or blocks made of soil, clay, mud, fired or unfired bricks, field stone, cement or concrete blocks, wood or a combination of these. Cement and lime are sometimes used for mortars. In many places, mud mortar is common. Reinforced concrete lintels, floor and roof slabs and beams are also being increasingly used. The construction follows a variety of combinations utilizing these basic locally-available materials.

The Problem

Most of the loss of life in past disasters has occurred due to the collapse of buildings constructed in traditional ways using materials like cement blocks, stone, brick, adobe and wood which were not properly planned and constructed to be earthquake or typhoon-resistant. In view of the continued use of such construction it is essential to introduce disaster-resistant features in them. Statistics suggest that in the moderate to high seismic regions of the world more than 90 per cent of the population is still living and working in traditionally-built structures which are inherently weak from an earthquake viewpoint and the risk is further increasing due to rising population particularly in the developing countries. Further, in the typhoon-prone areas, too, enough attention has not been paid to make the dwellings typhoon-resistant. Hence, even in one moderate typhoon, thousands of dwellings collapse rendering people homeless as has been seen year after year in the Philippines as well as in some other countries, too.

Socio-Economic Considerations in Safety of Buildings

The results of studies on the performance of buildings during past earthquakes indicate that certain types of buildings should not have been constructed in seismic areas having probable modified Mercalli Scale intensity of VIII or more. This will include earthen houses, random rubble masonry as well as brick work in mud mortar. Only rich mortar involving cement and lime should be used in fired brickwork and coursed stone masonry. Steel reinforcement should be used in the walls of the buildings. These are definitely the necessities but there are a number of socio-economic constraints which normally do not permit adoption of high-level safety in the buildings for the masses. There is general lack of concern about seismic safety due to infrequent occurrence of earthquakes. There is absolute lack of awareness that buildings could be constructed earthquake resistant at nominal additional cost only. Poor people also give priority to basic necessities and thus generally lack resources for improving their dwellings. The matter is further complicated due to lack of skill in aseismic design and construction techniques. Moreover, the building sector is still generally unorganized. Such considerations therefore compel the continued use of seismically unsuitable construction practices.

More or less, the same situation exists in typhoon-resistant construction. People have forgotten the traditional way of construction dwellings in the typhoon-prone areas which used to be quite labor-intensive and requiring good amount of construction materials. In today's circumstances those old practices will be quite costly, too. Moreover people are changing their living style and adopting modern designs. Modern designs if built properly are in no way inferior and definitely can be disaster-resistant. But people start cutting corners or do not follow proper specifications and good construction practices and the result is obvious as seen during typhoons. Poor people who live in high risk areas are no better and their shanties are destroyed two or three times in a year. They also lack typhoon-resistant construction technology and hence remain always a vulnerable group.

The earthquake and typhoon-resistant construction practices will be detailed below.

Philosophy of Disaster-Resistant Construction

Theoretically, if appropriate resources and building materials are available, it is possible to construct buildings which will be free from any appreciable damage. However, cost of such construction may be prohibitive. The safety of human lives should be of primary concern and it will be met if a building is designed and constructed in such a way that in the event of maximum earthquake intensity in the region, it will not suffer total or partial collapse. The building also should not suffer irreparable damage which would require demolishing and rebuilding. It may sustain such damage which could be repaired quickly and the building put back to its usual functioning. The damage to important buildings such as schools, hospitals, and churches. should even be less so that their functioning is unhampered.

The present state of knowledge could fulfill such requirements by adopting appropriate design and construction details which will be within the means of people in most countries.

As described earlier, different kinds of materials are used for construction of dwellings and good disaster-resistant features will now be described, keeping in mind the low cost of the structures. Construction using random rubble stone masonry, brick masonry and timber will be explained.

Disaster-Proof or Disaster-Resistant

Many times the word disaster-proof is very loosely used by people whenever talking about a structure built to withstand the forces of an earthquake or a typhoon. In modern times technology is so advanced that it is possible to build safely any structure for any kind of forces, provided the details or all parameters about that force is adequately known. If the force details are precisely known then the

structure designed and constructed for that force will never be destroyed. Such structure is called disaster-proof. Unfortunately, accurate prediction about earthquakes is not yet possible and, hence, only statistical predictions can be made. A good estimate for the earthquake which can take place in future at a particular location or site is worked out and a structure designed.

The situation in the case of typhoon is a bit better, since an oncoming typhoon may be predicted with remarkable accuracy. However, it is not possible to say what kind of typhoon will come in six months', one year's or ten years' time. Therefore, again, only statistical estimate is possible.

Thus, it is seen that it is not possible to precisely predict the nature of an earthquake or typhoon. Hence, for design purposes the best available technique of calculation of forces is employed and used. The design thus developed and the structure built is called disaster-resistant rather then disaster-proof. In such cases it is expected that the structure will not collapse or be destroyed but may still suffer some damage which however, can be repaired. This is the basic philosophy of a disaster-resistant design.

Earthquake-Resistant Construction

Choice of Site

The choice of site for a building from the seismic point of view is mainly concerned with the stability of the ground. The following are important:

Stability of Slope: Hillside slopes liable to slide during an earthquake should be avoided and only stable slopes should be chosen to locate the building. Also it will be preferable to have several blocks on terraces than have one large block with footings at very different elevations. A site subject to the danger of rock falls has to be avoided.

Very Loose Sands or Sensitive Clays: These two types of soils are liable to be destroyed by an earthquake so much as to lose their original structure and thereby undergo compaction. This would result in large unequal settlements and damage to the building. If the loose cohesionless soils (sand) are saturated with water, they are likely to lose their shear resistance altogether during shaking and become liquefied. Although such soils can be compacted, the operation may be too costly for small buildings and these soils are better avoided.

For large building complexes, such as housing developments, new towns, etc., this factor should be thoroughly investigated and appropriate remedial measures adopted. Several remedial measures are available.

Plan of Building

Symmetry: The building as a whole or its various blocks should be kept symmetrical about both the axes. Asymmetry leads to torsion during earthquakes and is dangerous (Fig. 1). Symmetry is also desirable in the placement and sizing of door and window openings as far as possible.

Regularity: Simple rectangular shapes (Fig. 2a) behave better in an earthquake than shapes with many projections (Fig. 2b). Torsional effects of ground motion are pronounced in long narrow rectangular blocks. Therefore, it is desirable to restrict the length of a block to three times its width. If longer lengths are required, then two separate blocks with sufficient separation (Fig. 2c) in between should be provided.

Simplicity: Ornamental projections should be avoided.

Enclosed Area: A small building enclosure with properly interconnected walls act like a rigid box (Fig. 3), since the earthquake strength which long walls derive from transverse walls increases as their length decreases. Hence, building of very long rooms should be avoided.

Design and General Construction for Masonry

For planning, design and construction of masonry buildings in seismic areas of developing countries the following details are suggested.

Mortar: Since tensile and shear strength are important for seismic resistance of masonry walls, use of mud mortar or very lean mortars will be unsuitable. A cement: sand mortar mix equal to 1:6 by volume or equivalent in strength should be adopted.

Wall Enclosure: In load-bearing wall construction, the wall thickness "t" should not be kept less than 190 mm; wall height not more than 20 t; and wall length between cross walls, not more than 40 t.

Opening in Walls: The following guidelines on the size and position of openings are suggested. Openings should be located away from the inside corner by a clear distance equal to at least 1/4 of the height of openings. The total length of openings should not exceed 50 per cent of the length of the wall between consecutive cross walls in a single-storey construction, 42 per cent in two storey construction and 33 per cent in three-storey construction. The horizontal distance (peer width) between two openings should not be less than 1/2 of the height of the shorter opening. The vertical distance from an opening to an opening directly above it should not be less than 600 mm nor less than 1/2 of the width of the smaller opening. Recommendations as proposed above are shown in Fig. 4 .

When the openings do not comply with the above imposed requirements, they should be reinforced by providing reinforcing bars at the jamb of the opening through the masonry.

Masonry Bond: For achieving full strength of masonry, the usual bonds specified for masonry should be followed so that the vertical joints in the masonry are properly broken from course to course.

Horizontal Reinforcement in Walls: Horizontal reinforcing of walls is required for imparting to them horizontal bending strength against plate action for out-of-plane inertia load and for tying the perpendicular walls together.

Horizontal Band or Ring Beam: The most important horizontal reinforcing is through provision of continuous band on all longitudinal and cross walls. A band consists of two (or four) longitudinal steel bars with links or stirrups embedded in 75 mm (or 150 mm) thick concrete as shown in Fig. 14. The number of longitudinal steel bars depends on the span of the wall. The thickness of band or a multiple of masonry units and its width may be made equal to the thickness of wall. Appropriate steel for a particular span length has been recommended in Table 1. Such bands are to be located at critical levels of the building, namely plinth, lintel, roof and gables according to the requirements.

Table 1: Recommendation for Steel in R.C. Band

Span (m)	Longitudinal Band Number of Bars	Steel in R.C. Dia. of Bars (mm) (Mild Steel)
5	2	12
6	2	16
7	2	16
8	4	12
9	4	16

The vertical thickness of R.C. band may be kept to a minimum of 75 mm where two longitudinal bars are specified and 150 mm where four longitudinal bars are specified. Concrete mix is to be 1:2:4 by volume or having 150 kg/cm cube crushing strength at 28 days. The longitudinal bars shall be held in position by steel links or stirrups of 6 mm dia. spaced at 150 mm apart.

Plinth Band: This must be provided in those cases where the soil is soft or uneven in their properties as usually happens in hill tracts as well as in places where differential settlement of foundation may take place. This will also serve as damp-proof course. This band is not too critical in other areas.

Lintel Band: This is the most important band and will incorporate in itself all door and window lintels, the reinforcement of which should be extra to the lintel band steel. This band must be provided in all storeys in buildings (See Figs. 14 and 16).

Roof Band: This band will be required at eave level of trussed roof and also below or in level with such floors which consist of joists and covering elements so as to properly integrate them at ends and fix them into the walls (See Fig. 16).

Gable Band: Masonry gable ends must have triangular portion of masonry enclosed in a band; the horizontal part will be continuous with the eave level band on longitudinal walls (Fig. 16).

As an alternative to gable masonry, a truss as shown in Fig. 16 or open gable may be used and the openings covered with light material like sheeting or mats. If the wall height up to eave level is less than or equal to 2,500 mm, the lintel band may be omitted and the lintels integrated with the eave level band.

Vertical Reinforcement in Walls: Vertical reinforcement is needed at corners and T-junctions of masonry walls. In addition it is further needed at jambs of openings, if requirements for size and position of openings are not followed. The amount of vertical reinforcing steel will depend upon several factors like the number of storeys, storey heights, the effective seismic coefficient based on seismic zone, importance of building and soil foundation type.

Value based on rough estimates for buildings are given in Table 2. The steel bars are to be installed at the critical sections as stated earlier right from the foundation concrete and covered with cement concrete in cavities made around them during masonry construction. The concrete mix to be used here should be kept at 1:2:4 by volume or richer. The vertical steel of opening may be stopped by embedding it into the lintel band but vertical steel at corners and T-junctions of walls must be taken into the floor and roof slabs or roof band.

Typical arrangements of placing the vertical steel in brick work are shown in Fig. 13 and the total arrangement of providing reinforcing steel in masonry wall construction is schematically shown in Fig. 15.

Provision of outside pillasters and buttresses at all corners and junctions of walls increases the earthquake stability of the buildings to a great extent. The details of arrangements are shown in Fig. 18.

Depending on design of brick masonry building, the earthquake resistant features will have to be incorporated from the above recommendation and they should not be constructed more than four stories high.

Table 2: Recommendation for Vertical Steel at Critical Section

No. of Storeys	Storey Number of Bars	Diameter of Steel Bar in mm at Each Critical Section
One	One	16
Two	Top	16
	Bottom	20
Three	Top	16
	Middle	20
	Bottom	20
Four	Top	16
	Third	20
	Second	20
	Bottom	25

Random Rubble Masonry

General Construction Aspects

Overall Dimensions: The height of the construction may be restricted to one storey, or at the most, two storeys, only for random rubble masonry buildings. Where light-sheeted roof is used, an attic floor may also be used. The height of a storey may be kept as low as 2.5 m but not more than 3.5 m. The wall thickness should be used as small as feasible, say 300 to 450 mm. The unsupported length of a wall between cross walls may be limited to 7 m. For longer walls, buttresses (Fig. 18) may be used at intermediate points not farther apart than 3 m. The size of buttress may be kept as: thickness = top width = t, and base width = h/3; where t = thickness of wall and h = actual wall height.

Mortar: Clay mud mortar should be avoided as far as possible. Mortar with cement: sand ratio 1:6, may be used for stone walls.

Openings in Walls: Openings should be small and as centrally-located as practicable. The recommended opening limitations are shown in Fig. 4. Ventilator, where used, may be made 450 x 450 mm or smaller.

Masonry Bond: Random rubble masonry construction should be brought to courses at not more than 600 mm lift. "Through" stones of full length equal to wall thickness should be used in every 600 mm lift at not more than 1.2 m apart horizontally. If full length stones are not available, stones in pairs, each of about 3/4 of the wall thickness may be used in place of one full-length stone so as to provide an overlap between them as shown in Fig. 6. In place of "through" stones, bonding elements of steel bars 8 to 10 mm in diameter in S-shape or as a hooked link may be used with a cover of 25 mm from each face of the wall as shown in Fig. 6.

Alternatively, wood bars of 38 mm x 38 mm cross-section or equivalent may be used for the "through" stones. Wood should be well preserved through seasoning and chemical treatment so as to be durable against weathering action and insect attack as shown in Fig. 6. Use of long stones should also be made at corners and junction of walls to break the vertical joint and provide bonding between perpendicular walls as shown in Fig. 6. The random stone wall delamination with buckled wythes as seen during earthquake destruction is shown in Fig. 5. This can be prevented with the use of "through stones" or other bonding elements as described above.

Horizontal Reinforcing of Walls: All the horizontal reinforcing recommended for brick masonry buildings in previous section may be used for random rubble constructions as well.

As an alternative to steel reinforcing bars, wooden bars of rectangular section, effectively spliced longitudinally and held by lateral members in lattice form, may be used where timber is available and more economical. Recommended sections are shown in Figs. 11 and 12.

Vertical Reinforcing of Walls: The amount of vertical steel in random rubble masonry walls required to be provided at the corners and T-junctions of walls and at jambs of openings is shown in Table 3.

Table 3: Recommended Vertical Steel at Critical Sections

No. of Storeys	Diameter of Single Steel Bar in mm at Each Critical Section Mild Steel
One	14
Two	16

For providing vertical bar in stone masonry, use of a casing pipe is recommended, around which the masonry is built to heights of 600 mm (See Fig. 7). The pipe is kept loose by rotating it during masonry construction. Then the casing pipe is raised and the cavity below is filled with the 1:2:4 concrete mix and rodded to compact it. The concrete will not only provide the bond between the bar and the masonry but will also protect the bar from corrosion.

The jamb steel may be taken from the footing up to the lintel band and anchored into it. The corner steel must be taken from the footing up to the roof slab or roof band and anchored into it.

Wooden Buildings

Wood has higher strength per unit weight as compared to other building materials and is, therefore, very suitable for earthquake-resistant construction. Wood construction is generally lighter. Although seismically suitable, use of timber is declining in building construction even where it used to be the prevalent material on account of vanishing forests due to population pressure. Hence timber buildings may be used in those areas and countries where it is still abundantly available.

The following is a good practice for wooden construction.

The Building Plan: The plan of the building should be surrounded and divided by bearing wall lines (See Fig. 19). The maximum spacing of the bearing wall lines is 8 m. The maximum width of the openings in the bearing wall lines is 4 m and the opening is at least 50 cm apart. The bearing walls may have stud wall type or brick nogged type construction. The height of the building will be limited to two storeys or two storeys and an attic.

Stud Wall Construction: The stud wall construction consists of timber studs and corner posts framed into sills, top plates and wall plates. Horizontal struts and diagonal braces are used to stiffen the frame against lateral loads due to earthquake and this type of construction also helps in areas subjected to high wind forces. Typical details of stud walls are shown in Fig. 20a. Another type of timber construction called "brick-nogged" is shown in Fig. 20b.

If the sheathing boards are properly nailed to the timber frame, the diagonal bracing may be omitted. The diagonal bracing may be framed into the vertical or nailed to the surface. The main features of stud wall construction are: sill plate, studs, top plates and bearing walls.

Other details are given below:

Sill: The dimension of sill should be a minimum of 4 cm x 9 cm, 9 cm x 9 cm or larger. The sill is connected to the foundation by anchor bolts whose minimum diameter is 12 mm and length, 35 cm. The anchor bolts must be installed at both sides of joints of sills and at the maximum spacing of 200 cm.

Studs: The minimum dimension of studs is 4 cm x 9 cm. The spacing of studs should be maintained at a minimum of 50 cm. Storey height should not be more than 270 cm.

Top Plates: The top of studs is connected to top plates whose dimension is not less than the dimension of the stud.

Bearing Walls: Wall framing consisting of sills, studs and top plates should have diagonal braces or sheathing boards so that the framing acts as bearing walls. In case no sheathing boards are attached, all studs should be connected to adjacent

studs by horizontal blocking at least every 150 cm in height. The minimum dimensions of braces is 2 cm x 6 cm. The brace is fixed at both ends and at middle portion by more than two nails whose minimum length is 5 cm to the framing members. The sheathing board is connected to the framing members by nails whose minimum length is 5 cm and maximum spacing is 15 cm at the fringe of the board and 30 cm at other parts.

Joints in Wood Frames: The joints of structural members should be firmly connected by nails or bolts. The use of metal straps is strongly recommended at structurally important joints such as those of studs/columns with sills or wall plates and with horizontal nogging members.

Foundations: The superstructure should be supported by concrete or masonry footings as shown in Fig. 21. Openings for ventilation need to be provided in continuous foundations. Some reinforcement will also be required in very soft soil areas and in areas where liquefaction is expected. On firm soil, isolated footings can be used.

Typhoon-Resistant Design

The structural measures for buildings faced with typhoon risks cannot be undertaken independently of site selection. The social and economic setting of specific regions at risk and the extent to which their traditional buildings are vulnerable are important considerations. Design of safe, typhoon-resistant housing starts with the understanding of dynamic forces at work in storms and surge waters. Coastlines facing approaching typhoons and those over which cyclones depart out to sea are most vulnerable to the effects of storm surges.

High winds in a tropical cyclone can come from any direction and they seek to lift as well as to demolish a building. Buildings must, therefore, be constructed to stay down as well as stand up. The extent to which a house is vulnerable to strong winds is a function of the design and configuration of the house, the quality of the workmanship, the strength of the materials used and the exposure of the site. In general, buildings made of light-weight materials are more susceptible to damage from typhoons than buildings of brick/masonry, cement hollow block or other heavier materials.

The susceptibility of a building to typhoon damage is determined by:

a. the configuration of the building (size and shape);

b. the configuration of the roof (flat, sloping, gable, hip);

c. the angle of the roof (about 30 - 40 is best);

d. how well the building is tied together (wall to wall, wall to floor and other elements, etc.);

e. how securely the roof is tied to the walls (so as not to blow away; sometimes framing remains intact and roof, sheets, tiles and other materials blow away);

f. how well the building is anchored to the ground (so as not to be uplifted or overturned); and

g. how well winds are prevented from entering the building and blowing it apart by internal pressure; strong door and shutter fastenings are essential.

Light-weight structures with wooden frames are particularly vulnerable, especially older buildings where the wood has deteriorated, weakening the walls. Cyclonic winds add sudden extra structural loads to buildings and normal load-bearing capacity is overwhelmed by these new forces. Unless such buildings are specifically strengthened, damage may occur.

Before mitigation measures for typhoon-resistant construction can be suggested, the behavior of buildings in typhoons must be understood:

a. horizontal or lateral forces act on all faces of a building, tending to turn it over and shear it off at the base;

b. suction pressures occur on the side walls and walls opposite the wind direction, tending to pull them outward (i.e., to explode them);

c. suction pressures tend to lift the roof off;

d. wind pressures build up inside the building. These may be bursting or suction pressures which may act with or against the external pressures of the building; and

e. loads of different magnitudes and directions occur over short periods causing fluttering forces in the structure.

These factors lead to the following simple principles to mitigate typhoon damage:

a. the whole building must be tied securely to its foundations;

b. every element in the structure must be tied together in order to develop a chain of strength against uplift. The internal connections between wall-to-wall framing, posts, beams, rafters, columns, trusses, purlins, battens, roofing and sheets must be made strong enough to resist typhoon wind forces. The anchoring into the ground must be well formed;

c. the joints between various elements in a building must be adequate to stop the structure from breaking up into separate and vulnerable elements;

d. wind must be prevented from entering a building and blowing the roof with internal force; and

e. in areas subject to storm surges, the building must be constructed above potential water level.

When constructing typhoon-resistant buildings, it is important to realize that resistance to wind is achieved by ensuring that the building acts as a whole. Diagonal braces in the walls, in the inclined planes of the roof, and in the ceiling plane are important elements in increasing wind resistance. Large gaps between main structural members in walls and roofs also require diagonal bracing.

Typhoon-Resistant Construction

The measures suggested are for low-rise buildings, small dwellings and traditional constructions. Also included are non-engineered structures. The purpose is to obtain a disaster-resistant structure. Disaster-resistant does not mean that the building is disaster-proof.

A. *Typhoon-resistant Wooden Housing*

1. Siting

a. In locating a house, advantage of natural wind break such as stands of trees, small hills or hedges should be taken.

b. Site on or near tall hills should be avoided as these can increase wind speeds by as much as 50 percent.

c. Siting in the narrow valleys is not desirable as funnel winds can create abnormally high wind speeds.

Siting is one of the basic requirements in a typhoon-resistant construction. Generally speaking, the houses should not be located in a hazard or high-risk prone area such as those near a dam, on the banks of a river channel located in hilly areas, near shorelines, in low-lying areas which are always flooded or on mountain slope areas that are vulnerable to landslides. If a structure is built in a high-risk area it means that knowingly its vulnerability to disaster is being increased. If the site is in high-risk areas, the structure must be built giving due attention to adequate safety.

2. Configuration of Building

a. A good shape of wood frame house to resist high winds is square or rectangular. A rectangular shape should have a length-to-width ratio of 2.5 to 1.

The best shape of a house to resist high winds is circular as it has wind-cutting and smoothening effect.

b. The parallel walls of all structures must be of equal length and equal height.

c. "L" shaped houses should be avoided as they have demonstrated poor behavior in cyclonic winds and there had been damages due to torsional effects, too.

d. The following shapes of buildings can be expected to receive a high proportion of damage due to wind entrapment as shown in Fig. 22.

3. Roof Design – Pitched Roofs

Houses using pitched roof should use roofing materials which are strong, shatter-resistant and of medium weight. The following are recommended:

a. Heavy-gauge metal roofing sheets.
b. Medium-weight, fiber-reinforced cement roofing sheets (non-brittle type)
c. Wood sheets
d. Wood tiles

The following are not recommended:

e. Thin-gauge, metal-roofing sheets
f. Light-weight, fiber-reinforced cement-roofing sheets
g. Light-weight, composite tiles and roofing sheets
Thin plywood sheets
Asphalt-coated cardboard sheets

Flat roofs in the wood frame house are not recommended:

B. *Cyclone-Resistant Design Features*

The forces applied to a building during cyclonic storm are:

a. upwards (tries to lift the structure up)
b. sideways or lateral (horizontal pushing)
c. twisting or racking (rotation about vertical axis of the building, and to-and-fro motion)

To build a structure which can resist these basic forces, there are three basic criteria that must be met.

a. Anchorage: The first specification is to hold the roof in place. This entails tying the roof down to the ground or foundation by an adequate and

continuous chain of strength. Generally, traditional construction is directed toward holding the roof up only. In cyclone-resistant construction, the purpose is to hold the roof down. This can be achieved by anchoring the whole roof to the walls which in turn is securely fastened to the foundation. This must be done by developing proper jointing at various places at junctions of roof and walls and using anchor cleats, etc.

b. Bracing: The second specification is to brace the structure to withstand the lateral wind forces and the raking effect. The methods used to brace traditional buildings have been found to be inadequate as much larger forces are exerted during cyclonic conditions. Hence, enough strength must be added not only at the corners of the building but at other key locations throughout each wall. Bracings are needed in wall plane, ceiling plane and in roof plane in order to provide enough rigidity and strength to the building.

c. Continuity: The third specification is to provide the structure with continuity or integrity. This means ensuring that all components of the building are properly connected or joined together so that they can satisfactorily perform their function. Because forces are much larger and in opposite direction of those occurring normally, more attention is needed in the provision of adequate connections. The various members of the building must be joined properly. Carpentry joints, nailing, bolting and strappings are strongly recommended.

For construction of cyclone-resistant houses there are a few simple features, namely:

a. No opening in the house should be built which cannot be closed off during a wind storm (for example an opening on the wall under a gable may be difficult to reach and close prior to the onset of a storm).

b. Leave openings in suitable locations where pressure can escape (for example, at the ridge of the roof).

c. Design the roof to reduce suction as well as break up lifting patterns (provide the recommended pitch of roof).

d. Design corners to reduce the pressures by allowing wind to slip around the corners (This can be achieved by rounding or beveling the corners of a building.)

e. Avoid creating areas where wind can be trapped and excessive pressure can build up (for example, sealing off the eave of a house to reduce the uplift pressure).

f. Provision of doors and windows in a house at least one meter from the end of a wall.

g. All doors and windows should be placed at a minimum of one meter from each other.

C. *Roof Sheet Fixing*

Based on the poor behavior exhibited, use of nail fixing for roof sheeting is not recommended and screw fixing is suggested. However, this would represent a discernible increase in costs of both labor and materials and may be considered unattainable for economic reasons in many places.

A cheaper alternative which provides positive fixing, particularly where wind forces are most critical, involves fixing a batten continuously along the corrugated roof sheeting at both the ridge and bottom edge of the roofing. The details for fixing is shown in Fig. 23.

a. Riveting a sheet metal strap to the sheeting and bending it down one side of the purlin. This can be improved if straps were doubled so that fixing to the purlin would be symmetrical as shown in Fig. 24. The riveting point is another potential weakness and the tendency of light gauge sheeting to tear away at this point has been seen.

b. Another method is to puncture the corrugated sheeting (at the top of the corrugation) and pass a wire through the two perforations, tying the wire underneath the purlin as shown in Fig. 25.

c. Corrugated roofing should be fastened to purlins through the top of the corrugations as shown in Fig. 26.

The above type of fixings can be prone to corrosion unless precautions are taken. In some areas the metal roof sheets as well as asbestos sheets are fixed with the help of a J-bolt. The underside of the bolt grips the wooden purlin and upperside passes through the sheeting and is further tied up with the help of a washer and nut. The J-bolt comes as galvanized and hence resists corrosion. The diameter of the bolt is about 8 mm and hence is very strong. Its behavior has been found to be good.

All houses using cement hollow block should follow the following good practices for typhoon-resistant construction.

a. A proper foundation trench should be prepared for continuous concrete footing. Hollow-block wall should be built on the concrete footing rather than place them directly on the ground.

The block wall placed directly on the ground may settle unevenly and this uneven settlement will cause the wall to crack and this will be a good place for wind penetration. General construction details for cement hollow block masonry is shown in Fig. 10.

b. The concrete footing must be reinforced.

c. The corner joints of walls must be reinforced vertically (Fig. 9) grouted with concrete.

d. The vertical reinforcing is also required at regular interval all along the block wall.

e. Additional vertical reinforcing is needed at jambs of doors and windows openings.

f. These vertical reinforcement should start from the foundation concrete (anchor one end of the steel reinforcement in footing) and should be continued all along the wall and anchored into lintel beam (anchor another end of steel reinforcement in lintel band or bond beam or anchor in reinforced concrete roof slab, if used).

g. There should be horizontal reinforcement also provided in the block wall at an interval of 100 cm vertical height.

h. Running bond in block wall is better than a stack bond.

i. Intermediate walls should be made continuous by the use of reinforcement or by proper joining of two walls together or by use of horizontal reinforcement extending into cross walls or partitions.

j. When connecting a wooden roof framing to a block wall structure, special care should be taken to connect the roofing securely to the structure. There could be several ways of achieving it. The steel rods coming out of the block wall could also be used to securely attach the roof frame. The bond beam (Fig. 10) may be used to develop fastening connections for the roofing system.

k. The whole roofing system should be built in such a way that it acts as one unit rather than individual pieces (rafters, purlins, etc.) behaving separately. This could be achieved by joining all members like trusses, rafters, purlins, beams, etc. securely together.

l. Roofing material such as metal roofing, asbestos sheets, etc. should be secured at every corrugation near the eaves (at the bottom purlin) and at the ridge (at the top purlin).

m. To secure the roof sheets to purlins, it is recommended that self-drilling drive screws be used if possible. Nails, if used, should be long enough so as to penetrate deep into the purlins and provide enough strength. A washer should be used with screws or nails. Nowadays different qualities of screws and other fixing devices are available whose behavior has been found to be extremely good in typhoons. These should be used. Roof-sheet fixing devices as discussed earlier should also be considered.

Conclusion

To obtain earthquake or typhoon-proofness in low-cost dwellings is practically impossible and is usually highly uneconomical. If enough disaster resistance has been developed in a cheap house so as to avoid its collapse, then the objectives of saving lives have been adequately achieved. The details suggested in this paper for construction of houses using different materials generally available locally will fulfill the aim of avoiding collapse. The specifications suggested can very easily be incorporated in low-cost construction and can also be used in strengthening work of existing construction. The methodology suggested has been tested in the laboratory as well as in field and is being increasingly used in many developing countries with good results.

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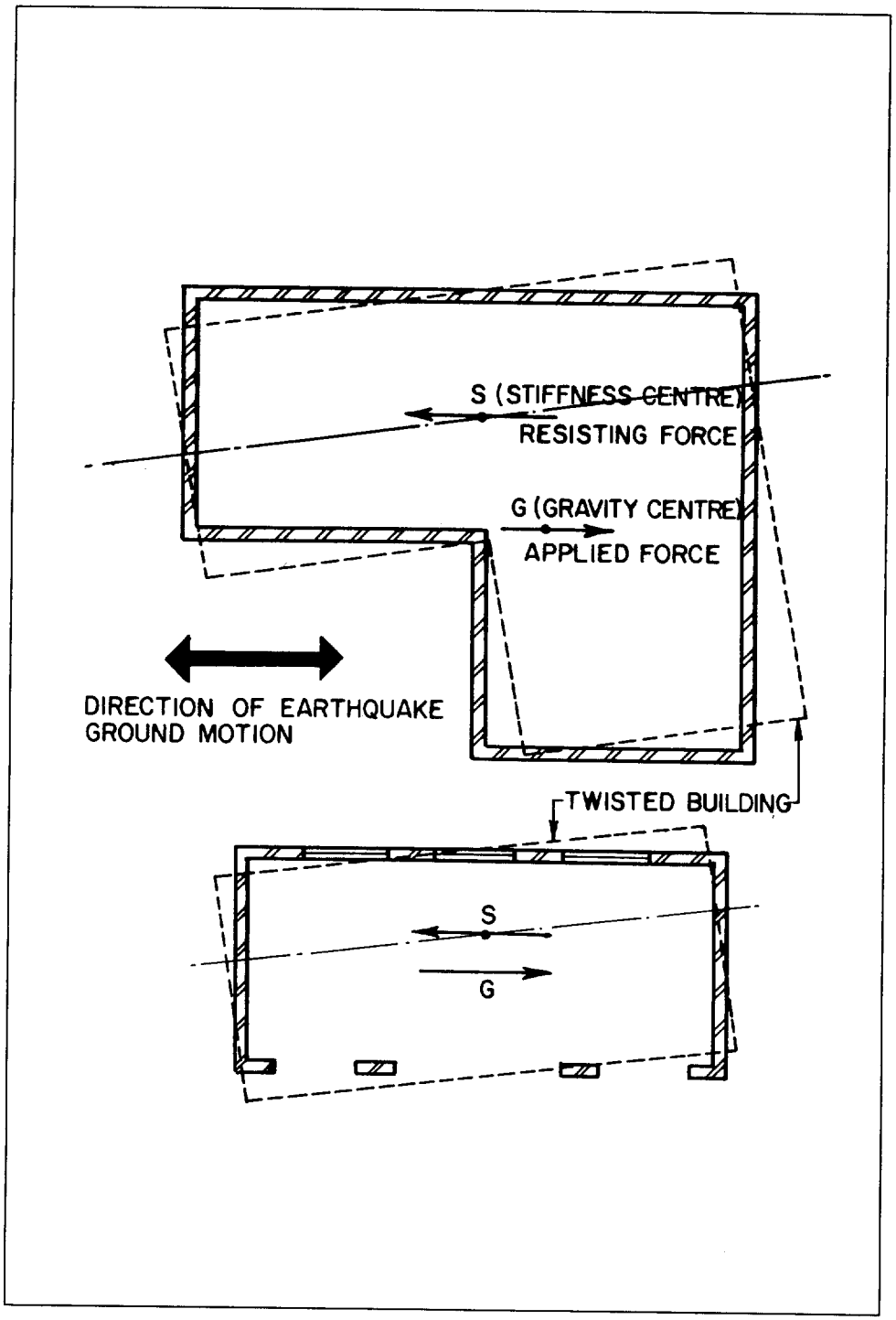


Fig. 1. Torsion of unsymmetrical buildings.

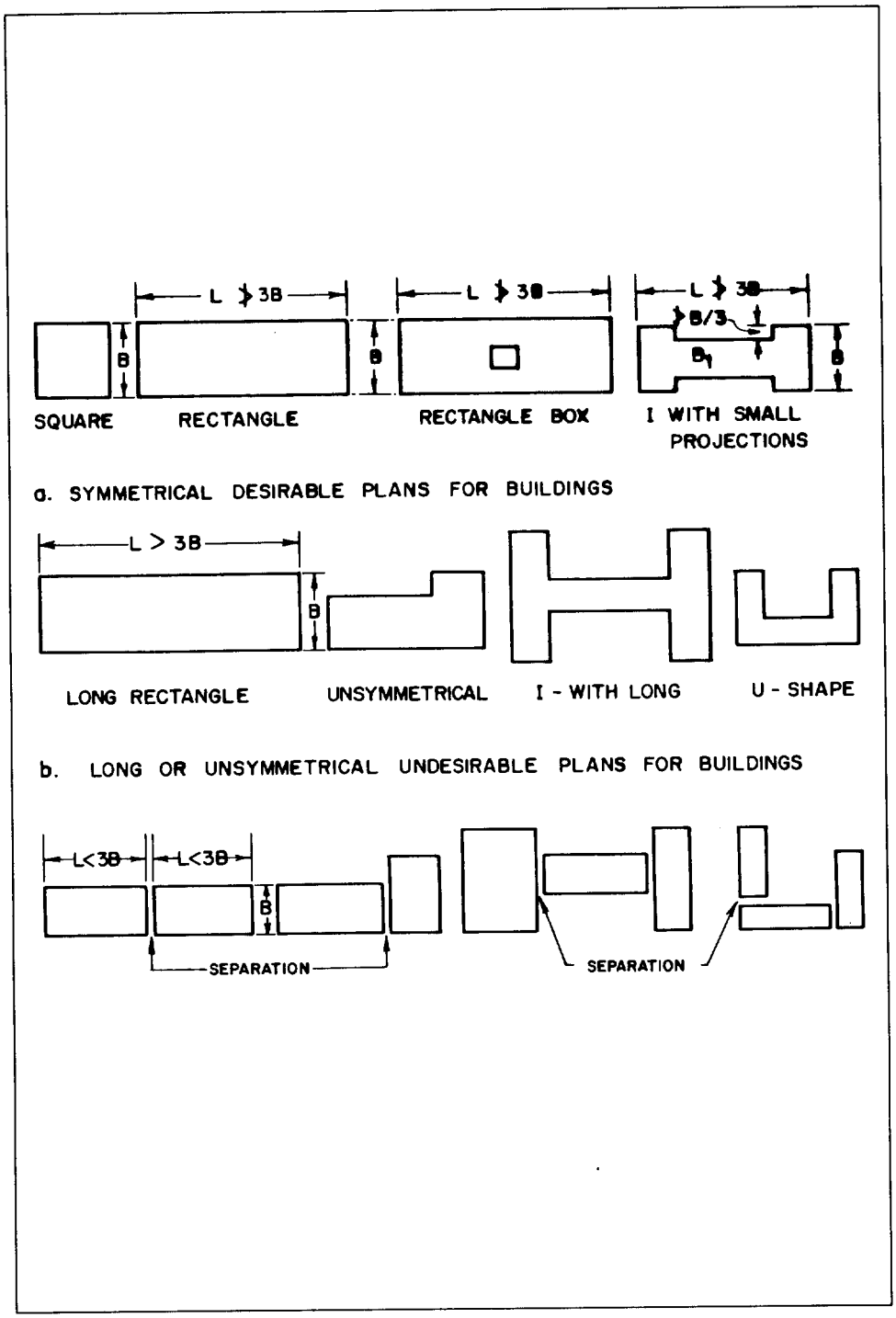


Fig. 2 Plan of building blocks for good earthquake performance

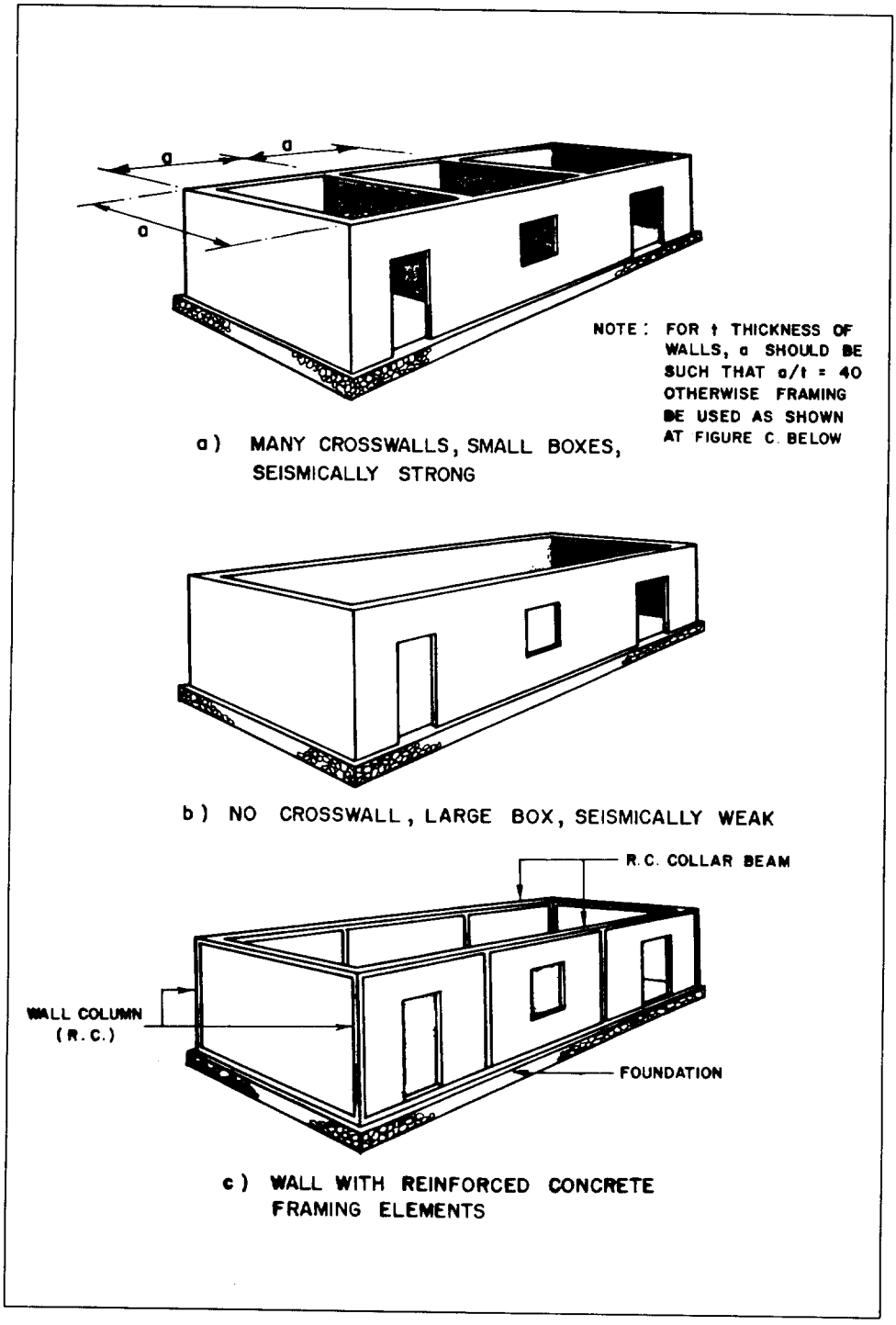


Fig. 3 Enclosed area forming box units

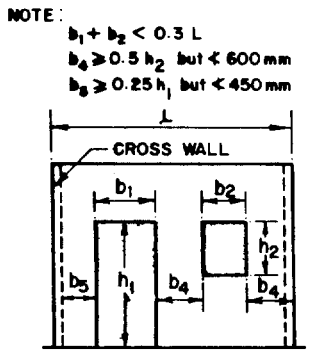


Fig. 4 *Recommended openings in bearings walls in rubble masonry*

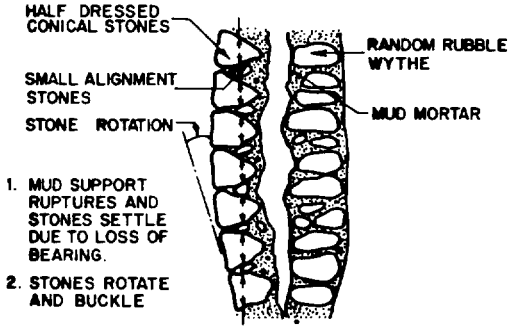


Fig. 5 *Wall delaminated with buckled wythes*

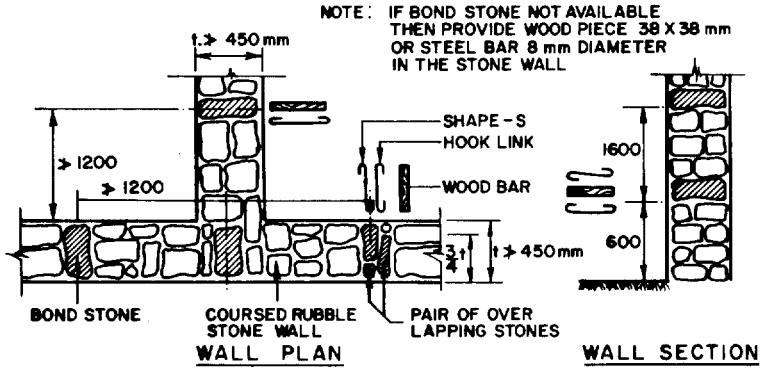


Fig. 6 *Through stones or "bond" elements*

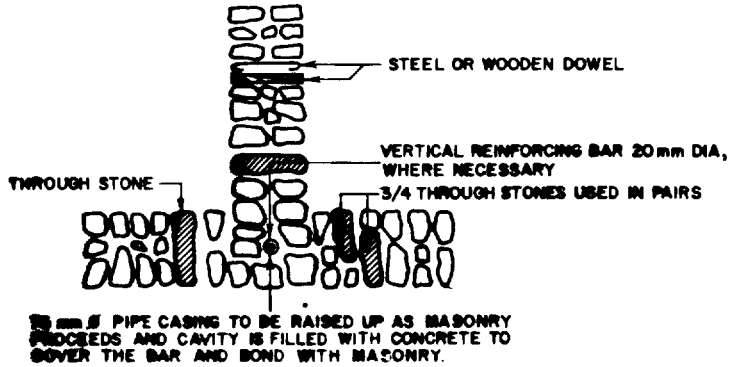


Fig. 7 *Vertical steel in random rubble masonry*

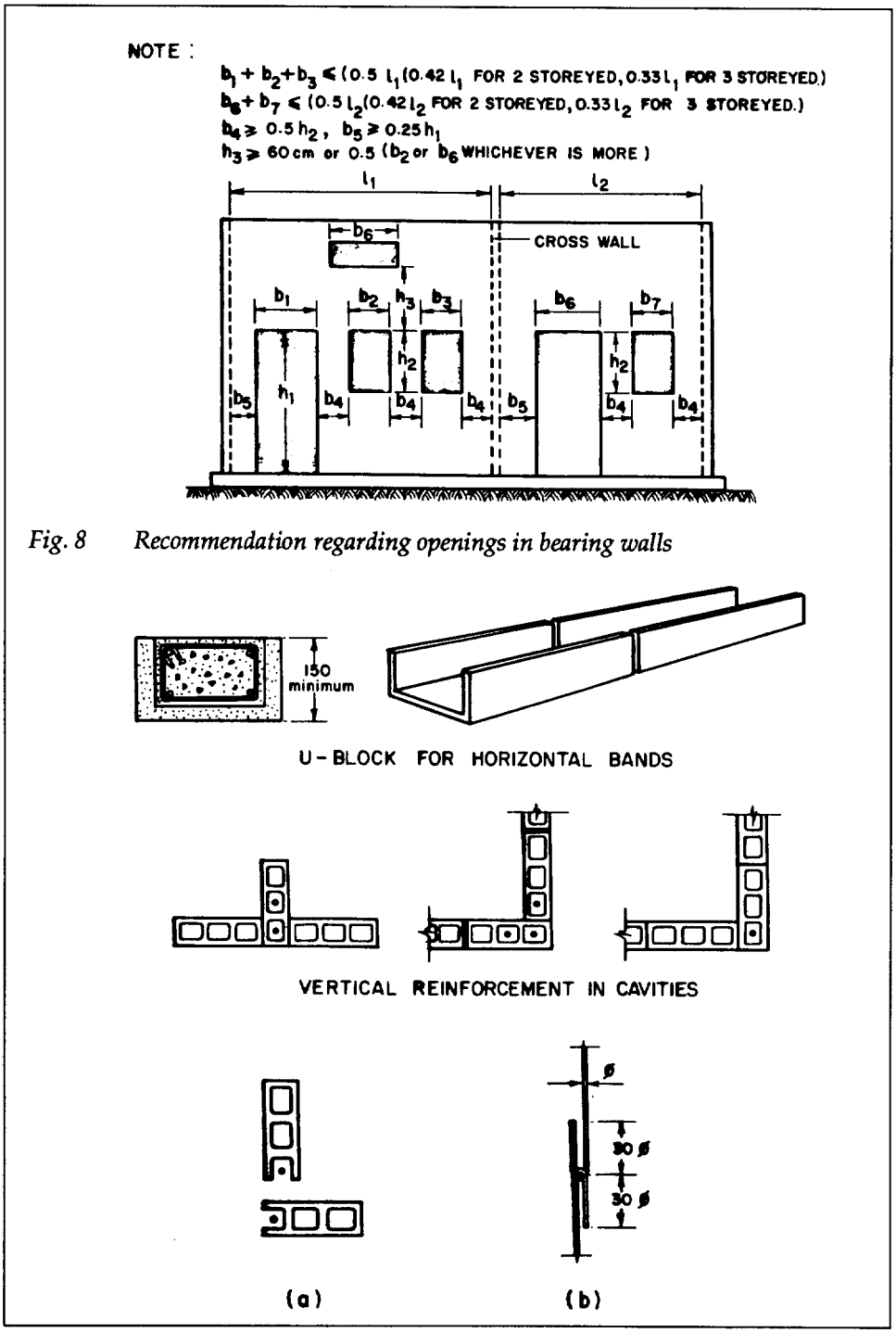


Fig. 8 *Recommendation regarding openings in bearing walls*

Fig. 9 *Vertical reinforcement in cavities in hollow block walls*

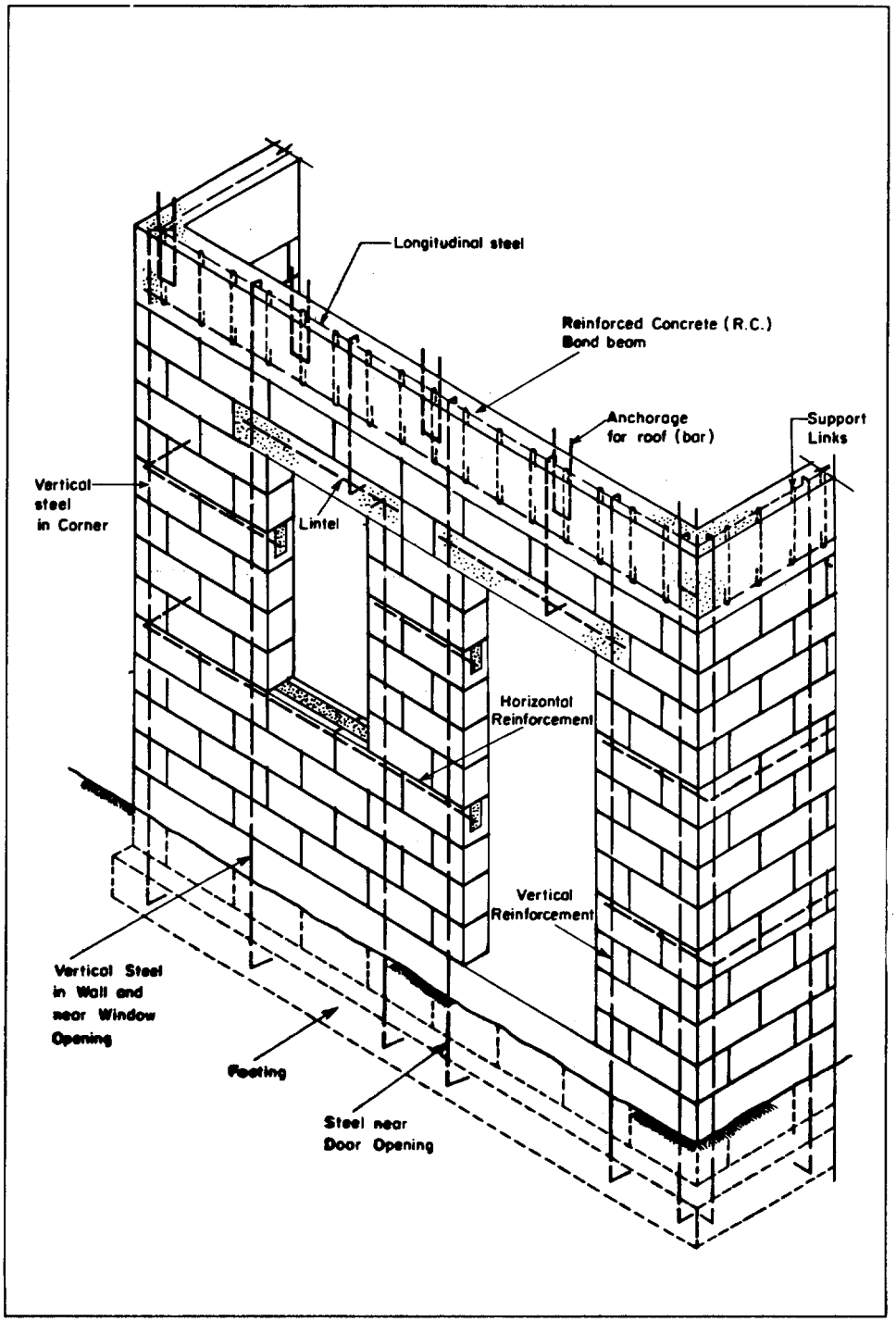


Fig. 10 General construction details for masonry houses

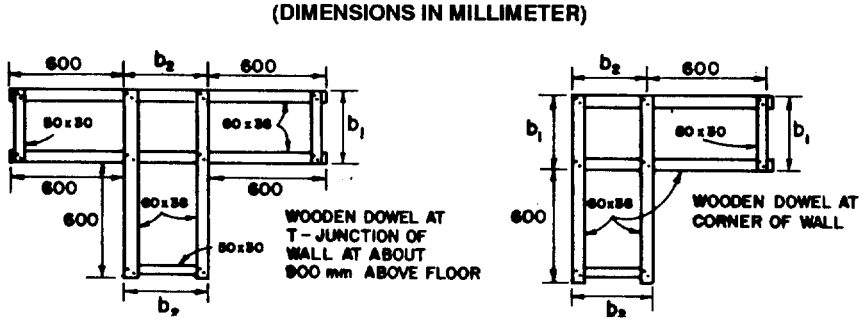


Fig. 11 Detail of wood reinforcing at corners and T-junctions

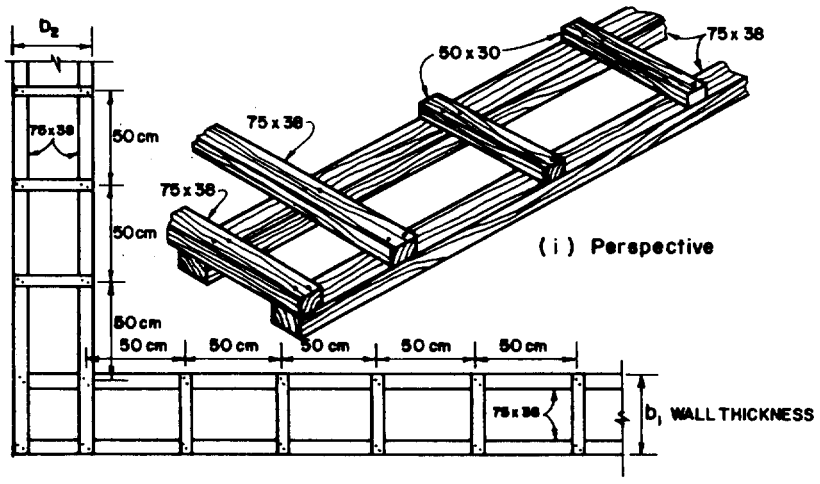
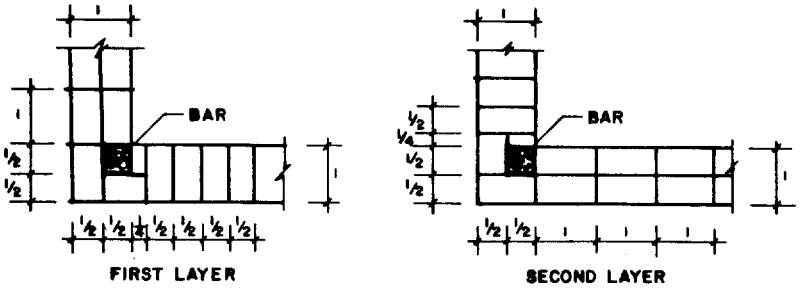
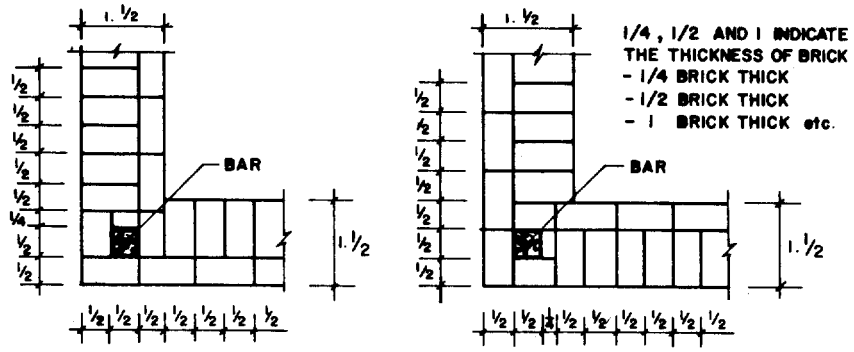


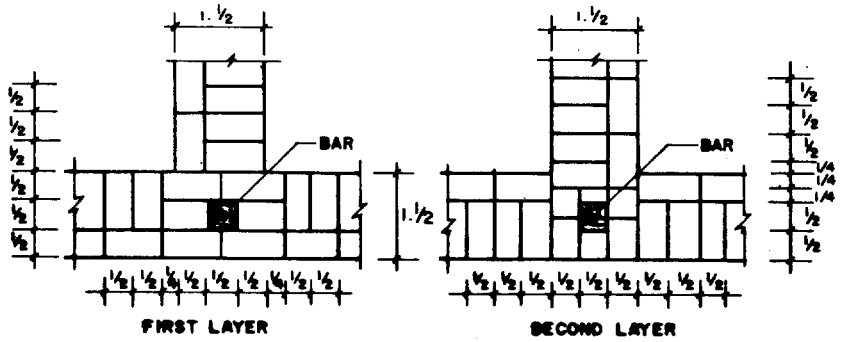
Fig. 12 Lintel level wooden band on all load bearing walls



a. CORNER JUNCTION DETAILS FOR ONE BRICK WALL FOR PROVIDING VERTICAL STEEL

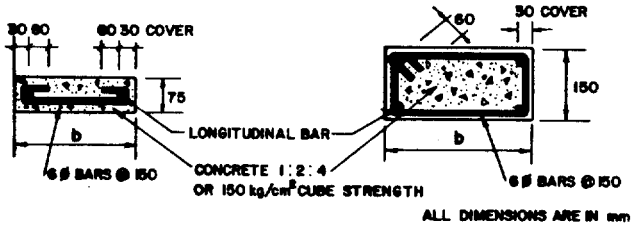


b. CORNER JUNCTION DETAILS FOR ONE AND A HALF BRICK WALL FOR PROVIDING VERTICAL STEEL

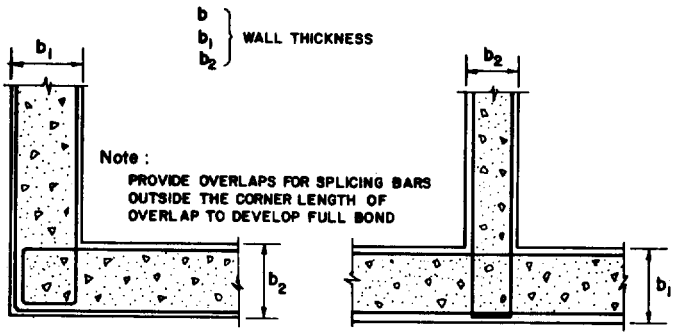


c. T. JUNCTION DETAILS FOR ONE AND A HALF BRICK WALL FOR PROVIDING VERTICAL STEEL

Fig. 13 Vertical reinforcement in walls



(a) Cross section of R.C. Band for two bars and four bars



(b) R.C. Band reinforcement - details at corner and T junction

Fig. 14 Reinforcement in R. C. band

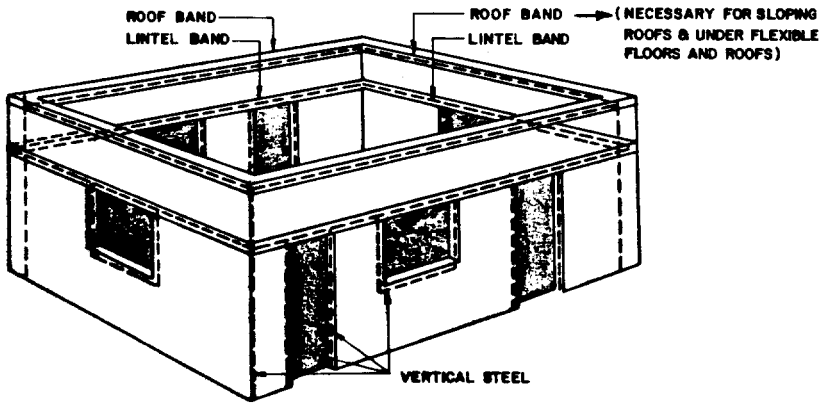


Fig. 15 Overall arrangement of reinforcing in masonry buildings

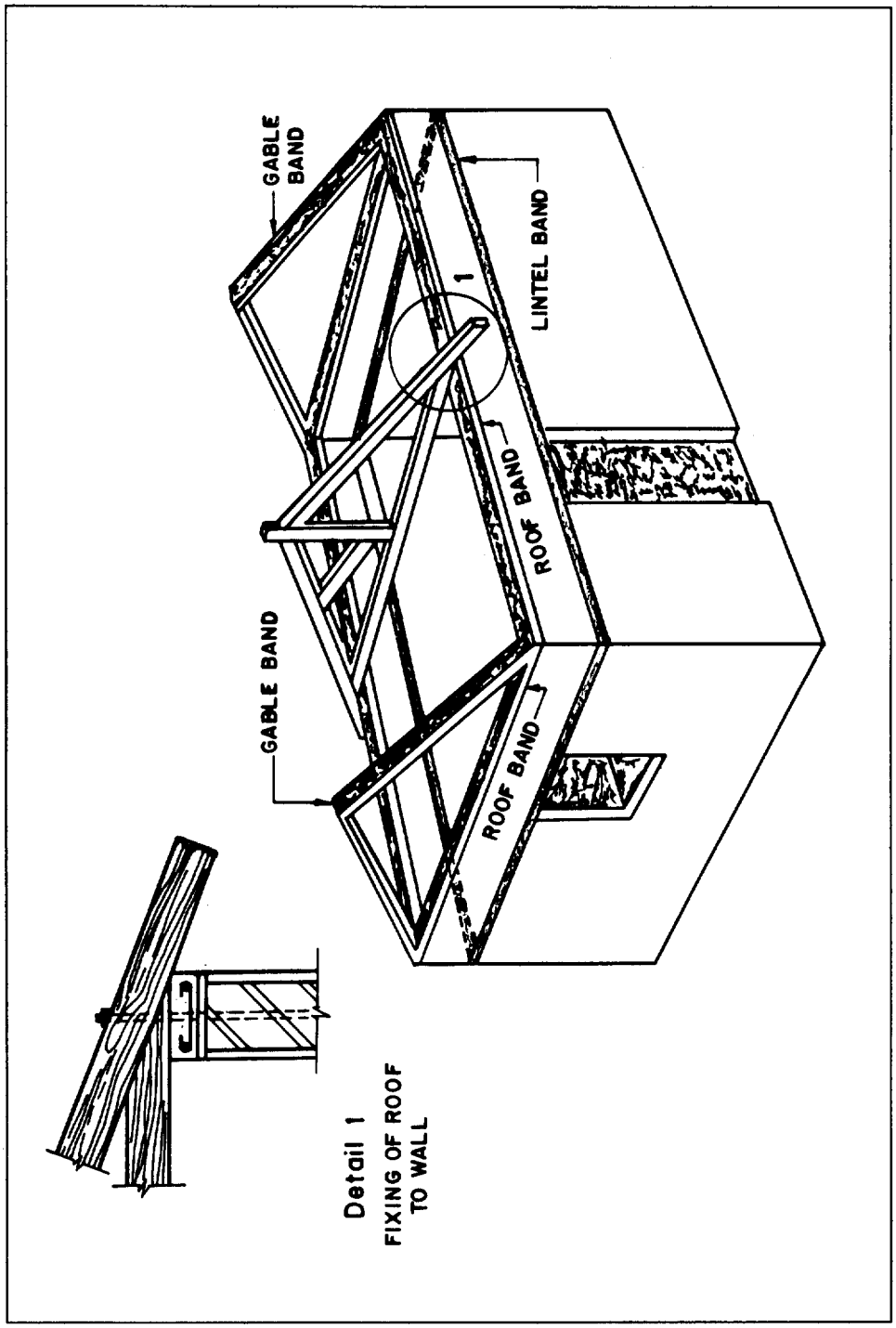


Fig. 16 Gable band and roof band in barrack type buildings

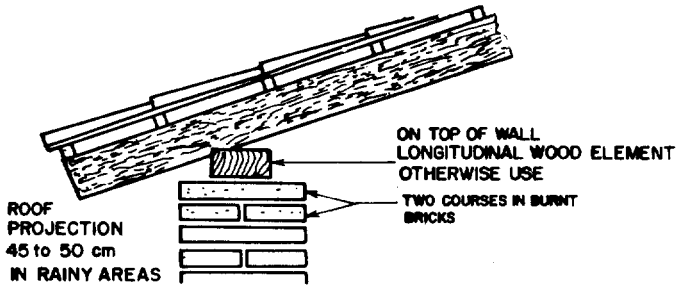


Fig. 17 Wooden supports to roof beams or rafters

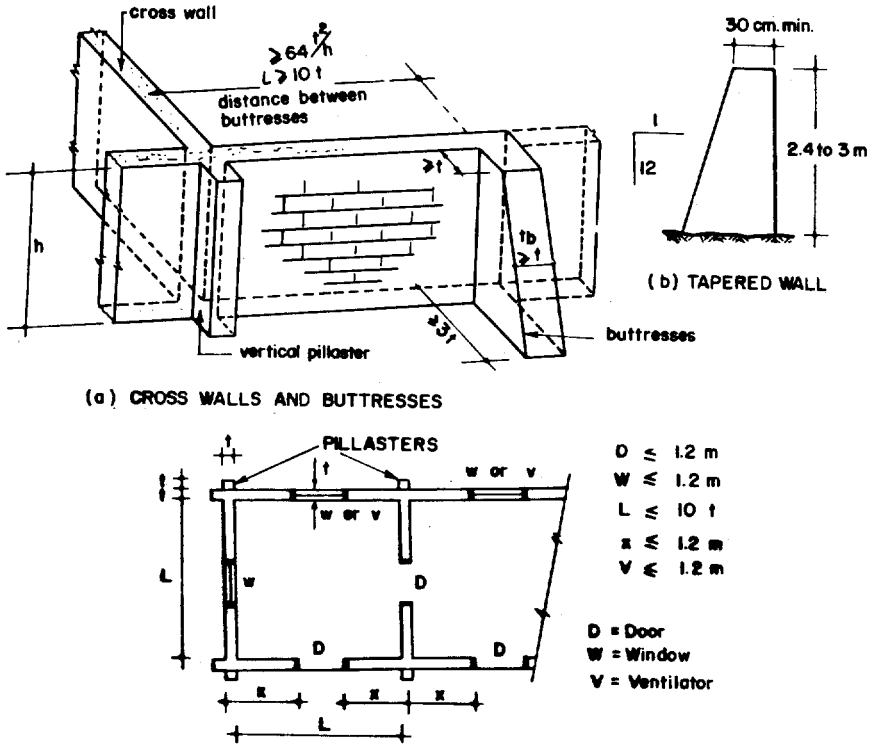


Fig. 18. Details of buttresses and pillasters

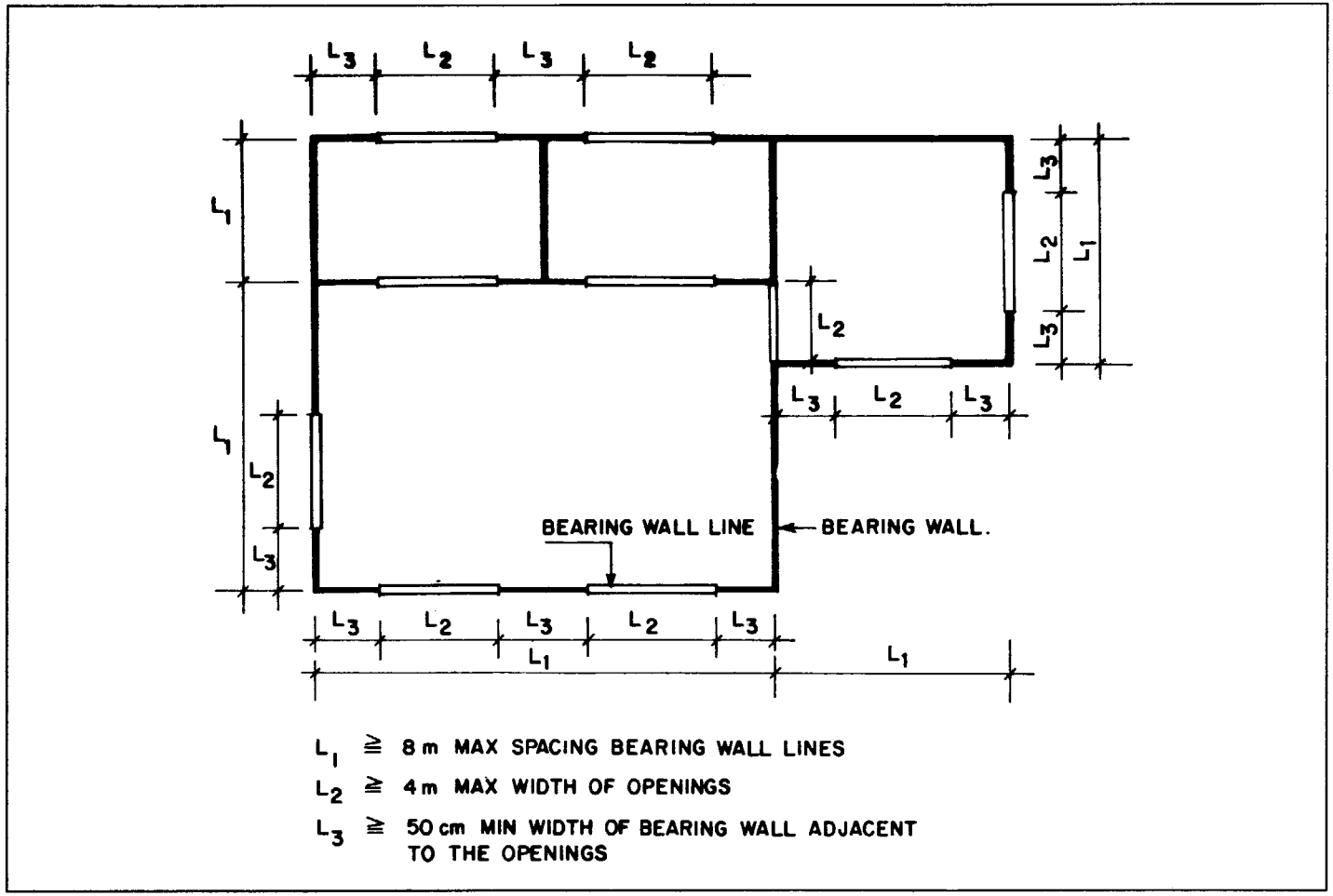


Fig. 19 Building plan divided by bearing wall lines

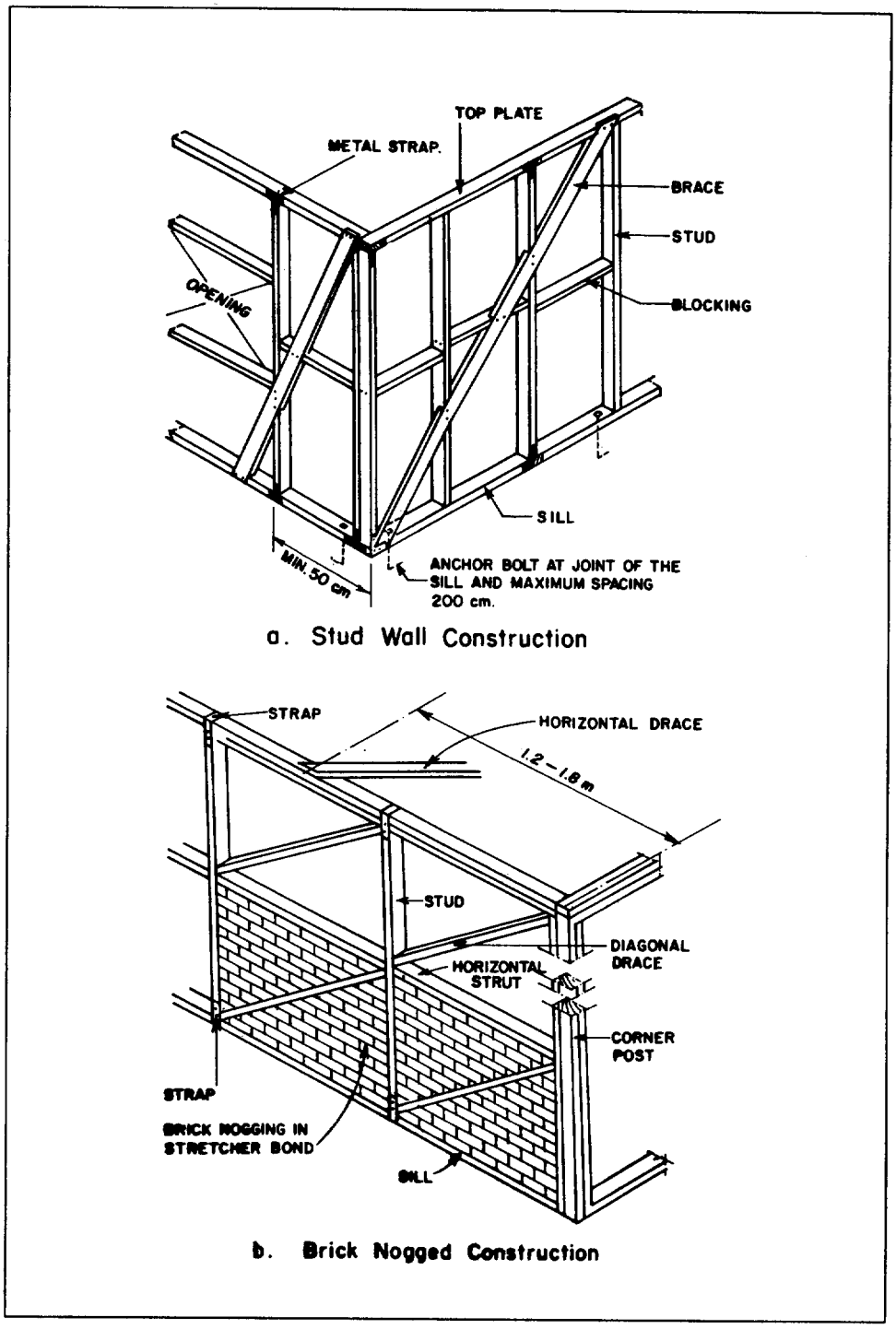


Fig. 20 Stud wall and brick nogged timber frame construction

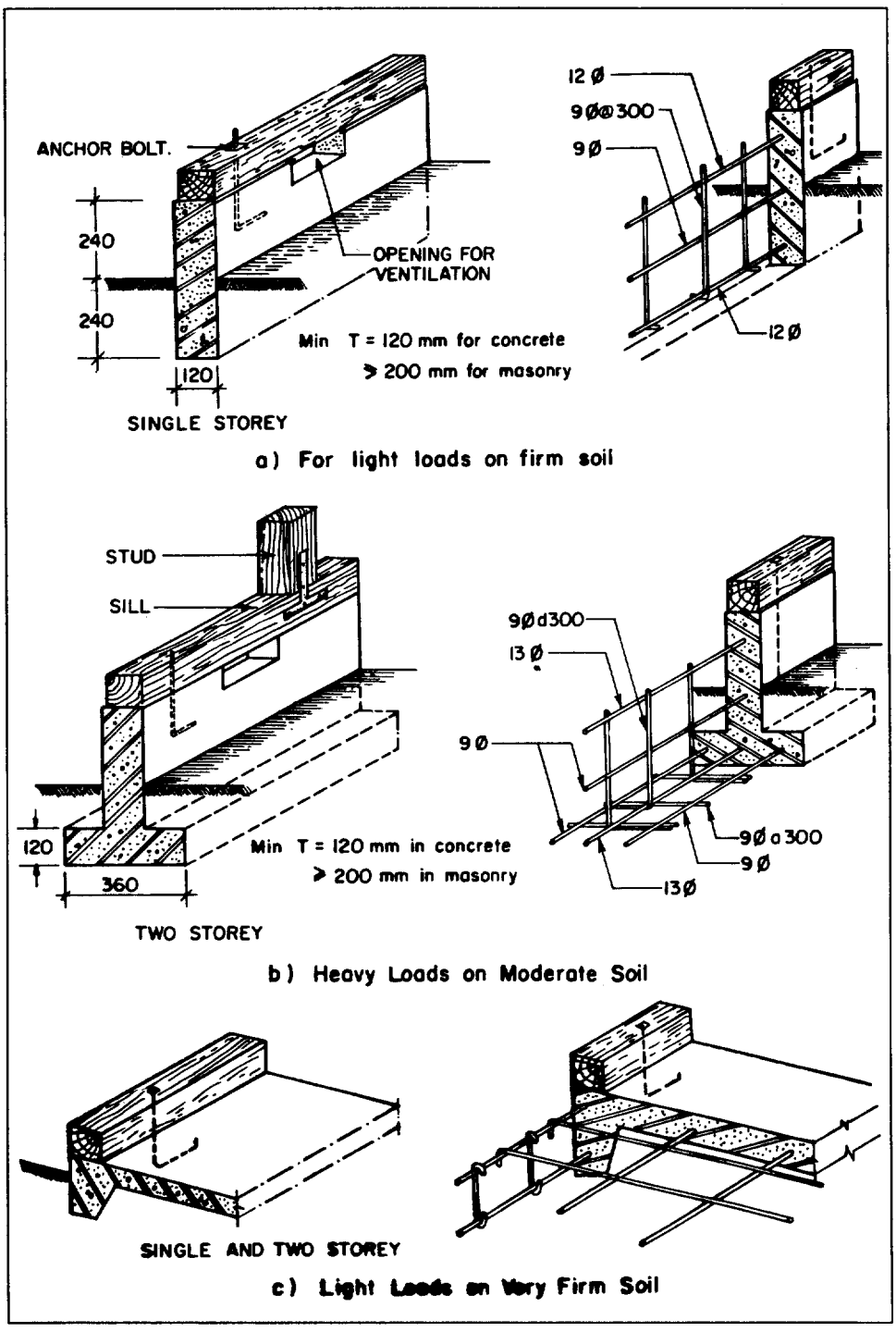


Fig. 21 Foundation and foundation reinforcement in concrete

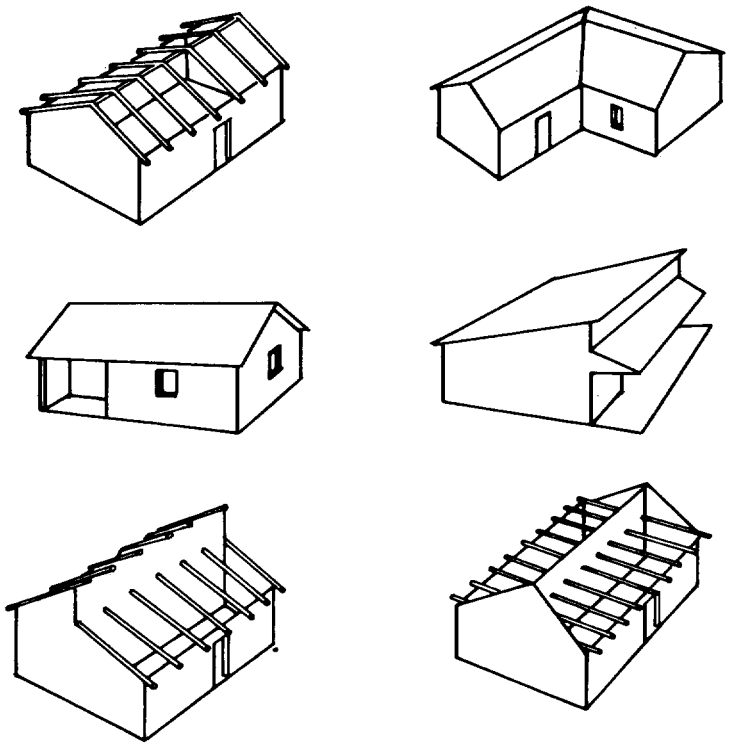


Fig. 22 Buildings prone to major damage in high winds

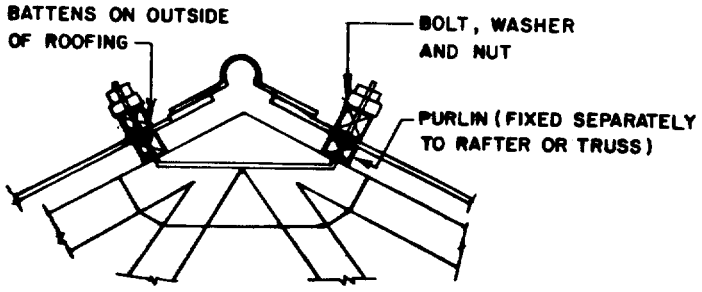


Fig. 23 Details of corrugated sheet fixing at the ridge

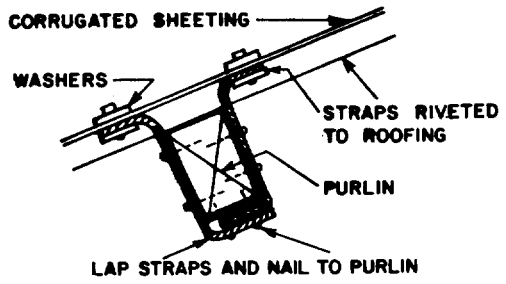


Fig. 24 Details of corrugated sheet fixing to purlins with straps

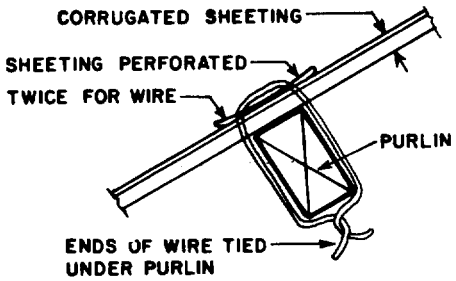


Fig. 25 Details of corrugated sheet symmetrical fixing to purlins by wire.

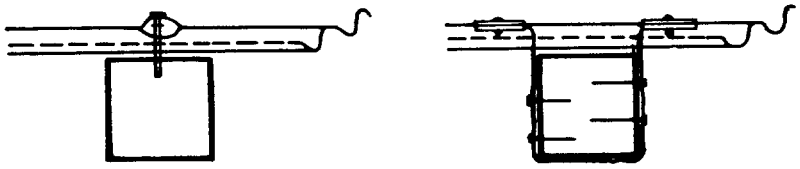


Fig. 26 Details of corrugated roof fastening to purlins through top of corrugation

THE DSWD'S CORE SHELTER ASSISTANCE PROJECT: ACHIEVEMENTS, PROBLEMS AND PROSPECTS

Rubin Z. Magno
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Department of Social Welfare and Development

The Core Shelter Assistance Project

The Core Shelter Assistance Project is one of the interventions under the Disaster Preparedness and Mitigation Program. It aims to provide disaster victims with structurally-sound core shelters specifically designed to withstand 180 kph wind velocity. The core grant is P6,500 per beneficiary. It involves among others the formation of work teams of five families per group which will pool their labor and resources for the construction of their houses. The team members are extended Food for Work assistance worth P20 per day for ten days while constructing their core shelters. Likewise, the work teams are provided a set of carpentry tools worth P1,000 per team.

1. *Objectives*

   a. To assist in the rehabilitation of disaster victims.

   b. To reduce the number of families rendered homeless every year by providing a structurally-sound core shelter made of indigenous materials that can withstand 180 kph wind.

   c. To develop and promote the value of self-reliance among the beneficiaries and the community as well.

   d. To maximize the participation and draw the commitment of the beneficiaries and the neighborhood in the construction of structurally-sound dwellings.

2. *Expected Outputs/Outcomes*

   a. Habitable and structurally-sound core shelters.

   b. More conscious and prepared recipient-families who are ready to assume responsibility in repairing/upgrading their houses if another typhoon occurs.

c. Acquisition of technology for constructing structurally-adequate shelters by the beneficiaries through on-the-job training and demonstration.

d. Promotion of collaborative effort among these beneficiaries who have been organized into work teams and neighborhood associations.

3. *Project Beneficiaries*

The direct beneficiaries of the project must meet the following requirements:

a. Their monthly income should be below the urban threshold of P1,400 for a family of six or the rural threshold of P1,200.

b. Their original houses have to have been lost or completely destroyed, with any hope of reconstruction made impossible by their limited resources.

c. They should not be recipients of shelter assistance from any other government agency or NGO.

d. They should have a guarantee of ownership or permanent or long-term occupancy of the lot where the core shelter is to be built for at least 10 years.

e. Their identified site should not be risk-prone or pose additional hazard and should as much as possible be accessible to transportation and supply of construction materials.

4. Components of the Project: The project has four major components which are interrelated to ensure that the beneficiaries are well informed and educated about the proposed assistance to them. The purpose is to effect attitudinal change, generate active participation and involvement of the beneficiaries in the preparation and completion of the project, improve their skills and capabilities and eventually attain self-reliance. The four major components are the following:

a. Social Preparation/Community Organization

The social component of such assistance cannot be over-emphasized. Proper organization of beneficiaries is essential to build collective effort, capacity for problem-solving, decision-making, and initially dealing with their shelter concerns. This will help ensure that the type of shelter provided is acceptable to the beneficiaries and reflective of their needs. As a whole then, this assures the growth of their capacity for self-reliance through cooperation and community activity.

b. *Food for Work*

In view of the economic condition of the beneficiaries, food for work is provided to augment lost income while they are constructing their shelters.

c. *Technical Assistance in House Construction*

This is provided by the trained foremen who are expected to orient, demonstrate, assist and supervise the beneficiaries in the construction of their shelter and facilitate transfer of technology within a period of 50 days. Major technical inputs in project design and training are provided by the international, national and regional consultants.

d. *Financial/Cash Grant*

At the start of the project in 1988, the core grant was limited to P4,500. Every year there was an increase of P1,000 due to inflation. The participation of the beneficiaries is maximized by adapting the core shelter design to the resources at hand without sacrificing strength and quality. The design focused on utilizing materials that could be salvaged from the destroyed houses, etc. as well as the use of indigenous roofing and walling materials.

While the financial assistance is in the form of a grant and not a loan, the return of the amount by the beneficiaries is encouraged through the Neighborhood Association for Shelter Assistance (NASA) as a cooperative scheme. These funds shall then be used for the shelter upgrading, maintenance, repair and other development projects that the group may decide to undertake.

5. *Description of the Scheme*:

Aware of the functional gaps in existing and previous service programs related to shelter for disaster victims, the project adopts the following strategies:

a. Use of modular upgrading scheme which allows for gradual improvement of the shelter according to the needs/socio-economic conditions, cultural preference and practice of the beneficiaries. However, the minimum requirements for typhoon resistance must be met, e.g., concrete footings with steel post straps properly bolted on four corner posts, proper installation of roof, ceiling and wall braces, use of anchor cleats, etc.

To accommodate gradual shelter upgrading, the design provided for four self-contained modules. (These modules are described in detail in another paper in this volume. See page 184.)

b. Involvement of structural engineers/technician (one external, one national and another regional) who will provide technical advice on planning, refining and interpreting the physical design as well as transferring the skills through training and demonstration to DSWD personnel, foremen and beneficiaries.

c. The approach further calls for the use of the housing plan to assess capability (in terms of both labor and materials) of beneficiaries to participate in the project and to integrate whatever contribution the local government and non-government organizations provide to the shelter effort.

d. Increased involvement of community organization is also called for in the following ways:

e. Organization of neighborhood association to facilitate participation of beneficiaries in planning and the decision-making process relating to shelter and other relevant matters.

f. Formation of work teams of five to six families per group which will pool their labor and resources for the construction of their houses;

g. Setting up of a maintenance fund to be contributed to by the families themselves, and allocated to cover expenses for upgrading and repair of the core house.

h. Lastly the creation of municipal shelter committee composed of NGOs and GOs is called for to monitor, check, clarify and motivate the beneficiaries to adopt the special features of the project to ensure the strength and adequacy of their shelter to withstand potential hazards particularly typhoons.

6. *Advantages of and Drawbacks to the Scheme*

This scheme referred to as the Core Shelter Assistance (CSA) seeks to address the gaps/problem of the existing DSWD shelter program. In relation to its expected outputs, the scheme has the following potential benefits:

a. Reduction of the number of families rendered homeless every year through the construction of structurally-sound and habitable core shelters designed to withstand a 180 kph wind velocity.

b. Raising the level of awareness of the recipient-families to be more conscious, prepared and ready to assume primary responsibility in upgrading, maintaining and repairing their houses and thus attain self-reliance.

c. Dissemination of a technology for a structurally-sound shelter through on-the-job orientation and demonstration.

d. Promotion of collaborative effort among the beneficiaries.

On the other hand, the drawbacks of the scheme are:

a. Its reliance on lumber and other inflation-prone conventional building materials. Should the price of lumber become unjustifiably high due to the current log ban, substitute and alternative materials based on locally developed technologies will be adapted.

b. The difficulty in acquiring safe, low-risk homelots or resettlement sites for the beneficiaries.

c. Value and attitudinal problems. Attitudinal change of the beneficiaries and the community is oftentimes slow. Resistance to change is a natural reaction, and thus the DSWD workers continually conduct dialogues with the family beneficiaries, their officers, local government officials, and leaders of the community.

The core shelter project in the Philippines is a good example of cooperation and collaboration among various sectors for mitigating the effects of natural hazards, most especially typhoons. The displaced lowest-income families are the most direct beneficiaries who are the primary target in the developmental process of improving their capabilities and reducing vulnerabilities.

To date, the implementation of the project is progressing satisfactorily.

Additional Strategies to Counteract Difficulties in Project Implementation

1. Making CSA highly competitive among the different municipal/barangay development councils; the councils that can comply with the eligibility requirements get the assistance.

2. Adopting a quality control checklist with instructions including sketches to make it understandable to the workers and beneficiaries.

3. Creation of municipal shelter committee composed of representatives of NGOs and GOs to monitor project progress, e.g., parish priests, presidents of civic organization, the vice mayor or Sangguniang Bayan members.

4. Reorientation of the regional consultant, regional staff, social welfare officers and foreman on the technical construction of the house, by the external consultant through actual demonstration.

5. Issuance of certificate of completion to beneficiaries who have completed their unit and passed the review of the municipal shelter committee. The house will be properly identified as a DSWD-CSU (Core Shelter Unit).

6. Assigning of provincial project coordinator to areas with more than 200 core shelter units.

7. Hiring of additional regional technical consultants for areas that have more than 500 core shelter units either under construction or awaiting construction.

The last two strategies are subject to the approval of the Secretary of the DSWD.

Project Management

DSWD implements the project through the Bureau of Emergency Assistance (BEA) which oversees and monitors its overall implementation. The BEA director is the national project director and is responsible for overseeing the implementation of the project, including coordination with the international and national consultants. The director is assisted by the technical staff (social welfare project supervisor and senior social welfare analyst) in program development, provision of technical consultation, evaluation and documentation. A social welfare project officer is designated on a full-time basis to handle the day-to-day operations of the project.

The Bureau of Family and Community Welfare collaborates with BEA in the implementation of the CSA by undertaking social preparation activities of the beneficiaries.

The DSWD regional offices from the province to the municipality undertake the actual implementation of project activities including the supervision of the foremen. The regional personnel are responsible for ensuring that the basic design of the core shelter is not altered to test its strength and resistance to strong typhoons. This group consists of the regional directors, assistant regional directors, regional specialists, provincial/city social welfare officers, and the welfare assistants.

The specific roles and responsibilities of the different units concerned are as follows:

1. Bureau of Emergency Assistance

   1.1 Development of the implementing guidelines on CSA.

   1.2 Generation of resources at the national level and allocating them to the concerned regions.

1.3 Provision of initial orientation and actual demonstration to regional technical consultant, CSA foremen and DSWD workers on the construction of the core shelter.

1.4 Provision of technical assistance for emergency aspect and ensuring that technical assistance for the construction of the core unit is available.

1.5 Preparation of the project manual, eventually upgrading the manual on Emergency Shelter Assistance.

1.6 Submission of regular feedback to the DSWD Secretary on the status of the project development and implementation.

1.7 Evaluation and documentation of the project implementation.

1.8 Overall management of the project to include the key management performance areas, namely:

- Field performance monitoring to check whether outreach targets are being attained.
- Delivery of needs and resources assessment assistance, assistance in social preparation (C.O. component), technical assistance for the simple construction of the core unit and monitoring of financial assistance to check whether minimum services are met.
- Cost monitoring to keep construction cost within cost standards.
- Keeping defined timetables.

2. Bureau of Family and Community Welfare

2.1 Development of the implementing guideline for the community organization component of the project.

2.2 Provision of technical assistance for the community-organizing (CO) component.

2.3 Evaluation of C.O. component in relation to the overall project implementation.

2.4 Preparation of manual for the C.O. component of the emergency shelter assistance.

3. Regional Office

3.1 Project implementation involving tailoring the design to location-specific and even family-specific shelter requirements. The regional office shall then submit immediate feedback and recommendation

based on local assessment of the project implementation.

3.2 Undertaking the following activities:

a) selecting the pilot areas

b) securing the manpower requirements including foremen and regional project consultant

c) coordinating with the local government and NGOs to generate local resources

d) monitoring and control of fund resources of the project

3. Serving as the communication center between the central office and the pilot areas.

4. Provincial city welfare officers assume the responsibility of direct supervision of the project being implemented in their areas of jurisdiction.

4.1 Verifying local costs of materials in order to establish cost standards for their localities

4.2 Use of relevant local cost standards in order:

a) to check consistency of established targets with budgetary allocations for each province/city units after allowing for all the other project expenses.

b) to set appropriate financial systems to guide cost-effective use of resources at the local level.

c) to provide local government units, government and non-government organizations financial information and identify their entry points into the client's housing plan.

4.3 Conduct training/orientation of workers on the nature, policies and procedure of the project.

4.4 Identify foremen; arrange their training to be conducted by the national technical consultant.

4.5 Canvass local materials; arrange with local dealers and beneficiaries the procurement procedures, including payment arrangement.

4.6 Submit final list of beneficiaries.

THE DSWD'S CORE SHELTER ASSISTANCE PROJECT: FOCUS ON CONSTRUCTION ASPECTS

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Introduction

The Philippine Archipelago is one of the most disaster-prone areas of the world. It has distinct geography consisting of as many as 7,107 islands of which 11 constitute 94 per cent of the total land area. Not all the islands are inhabited. It is a mountainous country and, except for urban areas, many towns and locations are accessible only via narrow roads which can easily be rendered impassable by landslides or even washed away by flash floods. When this occurs, communities may be isolated from the rest of the country for days.

The Philippines is subject to frequent disasters of many types. It is vulnerable in varying degrees to hazards like typhoons, floods, landslides, volcanic eruptions, earthquakes, tsunamis, seiche, storm surges and sea level changes. Typhoons regularly affect the country. The annual average number of tropical cyclones originating from or entering into the Philippine area of responsibility is 19 to 22, while five to nine make landfall each year causing widespread damage. Flooding often results from heavy rainfall associated with tropical cyclones.

Storm surges created by tropical cyclones are another problem causing suffering to communities located in coastal areas.

The estimated worth of property and agricultural products lost or damaged per typhoon ranges from P10 to 500 million (US $1.00 = P 22.2 - 1987) Damages due to flooding vary from P2 to 100 million. Between 1970 and March 1987, estimated damage due to typhoon includes 3,867 lives lost, 6,206,000 people affected and property worth US$ 681,819,000 destroyed. Fig. 1 shows the tracks of typhoons crossing Philippine landmass from 1955 to 1985, indicating that except for some parts of Southern Mindanao, the whole country is vulnerable.

Typhoon Sisang

Typhoon Sisang hit the Philippine coastal province of Sorsogon in the Bicol region on November 25, 1987 with a wind speed of about 220 km per hour. It struck in the evening and battered the town of Sorsogon and other adjoining areas for five

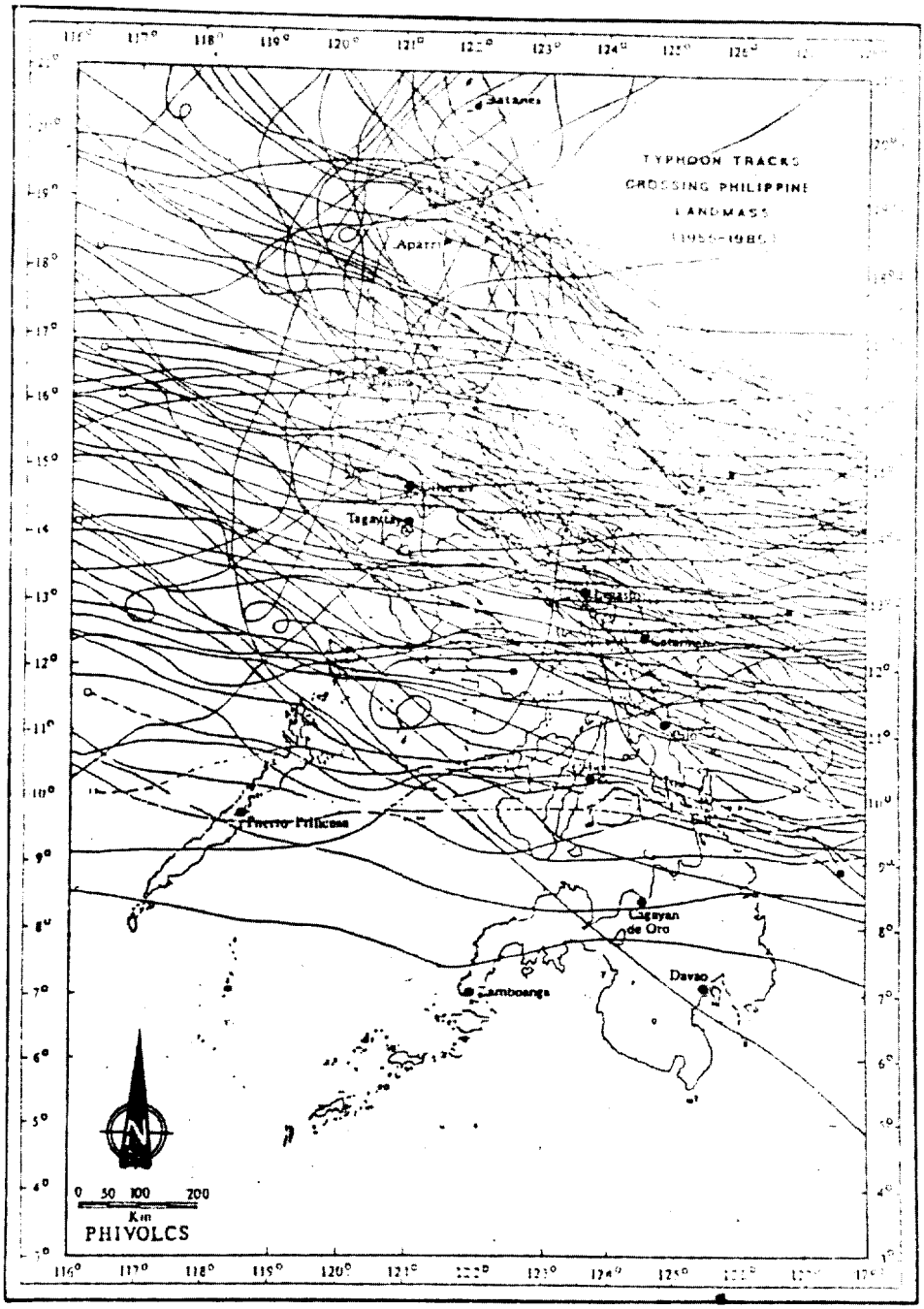

Fig. 1 Typhoon tracks crossing Philippine landmass, 1955-1985.

to six hours. People were caught absolutely unprepared. They had underestimated the gravity of the oncoming disaster. When communications broke down and the power supply failed, warnings could not be disseminated and the community paid the price. Sisang was the tenth typhoon to affect the country in 1987 and it lasted from November 23-27. Tracks of several typhoons during 1987 in the Philippines are shown in Fig. 2. Among several crossing the Philippine landmass during the year, Typhoon Sisang proved to be the most disastrous.

The worst effects of Typhoon Sisang were felt in Metro Manila and Region V (Bicol) where more than 1,200 people either died, were injured or were missing. Many houses in Regions III (Central Luzon), IV, V, VI (Western Visayas) and the National Capital Region were either totally or partially destroyed.

Housing Overview

The Philippines is a developing country. Rapid family formation, increasing land and construction costs and financial inability of many families to own homes are factors in the growing scarcity of housing. The housing shortage is particularly acute in urban areas. Home construction is largely a private sector activity, though the government is also increasingly involved in helping people. The so-called traditional housing which is most common in coastal and rural areas lacks basic typhoon-resistant features. A typical nipa house in the coastal area of Sorsogon province is shown in Fig. 3. Families who dwell in such houses are often the victims of typhoon disaster.

These traditional houses, as they are now built, are inherently weak and thousands of them are destroyed by typhoons year after year. Efforts to rebuild the destroyed houses of disaster victims are mainly through self-help, supplemented by limited assistance from the government and periodic aid from the private sector as well as from international and local non-government organizations. The Emergency Shelter Assistance, which is part of the Department of Social Welfare and Development's (DSWD) package of services for disaster victims whose homes are either totally or partially damaged, provides financial grants not to exceed P500 per family. It is evident that such support is rather symbolic and falls far short of reaching its objective. Therefore, alternative solutions had to be thought of.

Damage Assessment

After the disastrous typhoon, the Asian Disaster Preparedness Center (ADPC), in cooperation with various government and non-government organizations in the Philippines, arranged for its Senior Research Scientist to visit the affected areas. The scientist sought to familiarize himself with the prevalent types of construction; to see the damaged and undamaged dwellings and other structures and to analyze the causes of weaknesses of these structures leading to their destruction; to render on-the-spot advice in the repairs and reconstruction works; and to make recommen-

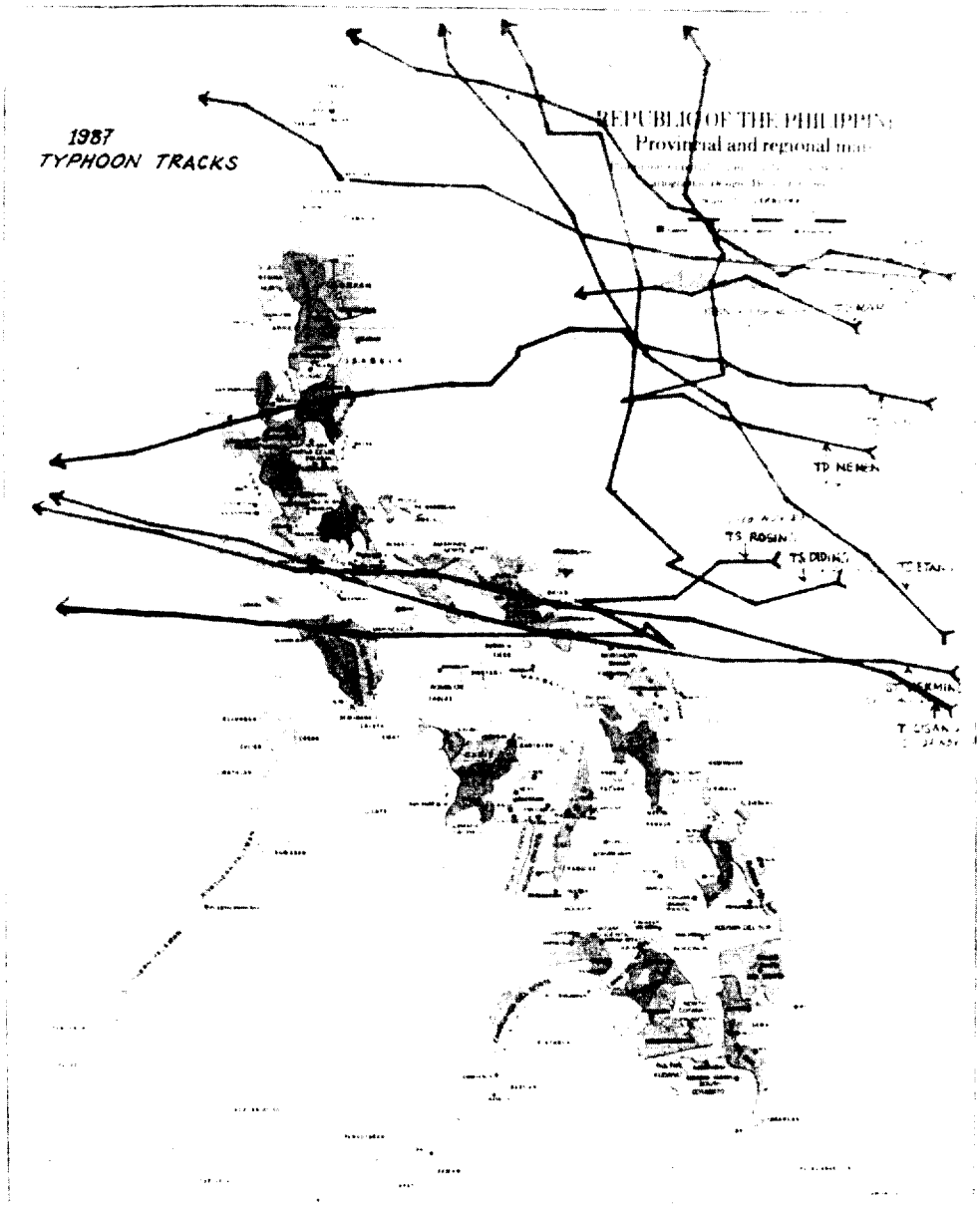

Fig. 2. Typhoon tracks crossing Philippine landmass, 1987.

dations for short- and long-term measures with an aim to improve the situation. (Full details of the mission report are contained in an ADPC publication entitled "Damage Survey Report on Typhoon Sisang in the Philippines, November 25, 1987.")

Typical destruction of wooden houses along the coastline in the Sorsogon province is shown in Fig. 4.

Immediately after the disaster, typhoon victims started reconstructing their dwellings utilizing salvaged material as shown in Fig. 5.

One of the recommendations of the report was to have a program to identify and document the weaknesses in traditional housing in various typhoon-prone areas of the country and later suggest ways of increasing resistance to typhoon damages. In the rehabilitation program, emphasis must be given to the construction of typhoon-resistant houses. The same message was repeated by the ADPC's Senior Research Scientist while delivering seminars in several universities in the Bicol region (typhoon- devastated areas), as well as during a round table discussion held at Tagaytay in March 1988 chaired by the Secretary of the DSWD and attended by government officials, NGOs and donor agencies.

Disaster Management

The Department of Social Welfare and Development is specifically tasked with the extension of emergency relief assistance and social services to victims of disasters to help them cope with the crisis, meet their immediate basic needs, undergo rehabilitation and eventually return to a normal life. During disasters, the Secretary directs the department's disaster emergency operations and coordinates DSWD's operations with the National Disaster Coordinating Council (NDCC) and heads of other agencies and groups.

Typhoon Sisang, like some other disasters in the past, rendered thousands of families homeless. Reports indicated that of the 489,119 affected families, 206,078 had totally destroyed dwellings, requiring either major restoration or replacement. Additionally there were the partially-damaged houses that needed repairs and upgrading before they could become fit to be re-occupied.

Long-standing experiences of DSWD in disaster-relief operations show that the majority of the people are victimized by damage due to structurally-inadequate shelters. Another reason is that these houses are usually located in high-risk areas like the shoreline. The DSWD's Emergency Shelter Assistance (ESA) is hard pressed meeting the housing needs of disaster victims due to budgetary constraints. Consequently even families being assisted by ESA remain vulnerable to disasters and perennially in need of housing assistance.

The responses generated by Typhoon Sisang brought donations that were allocated for shelter assistance. Its timing coincided with DSWD's interest in

Fig. 3. A typical nipa house in the coastal areas

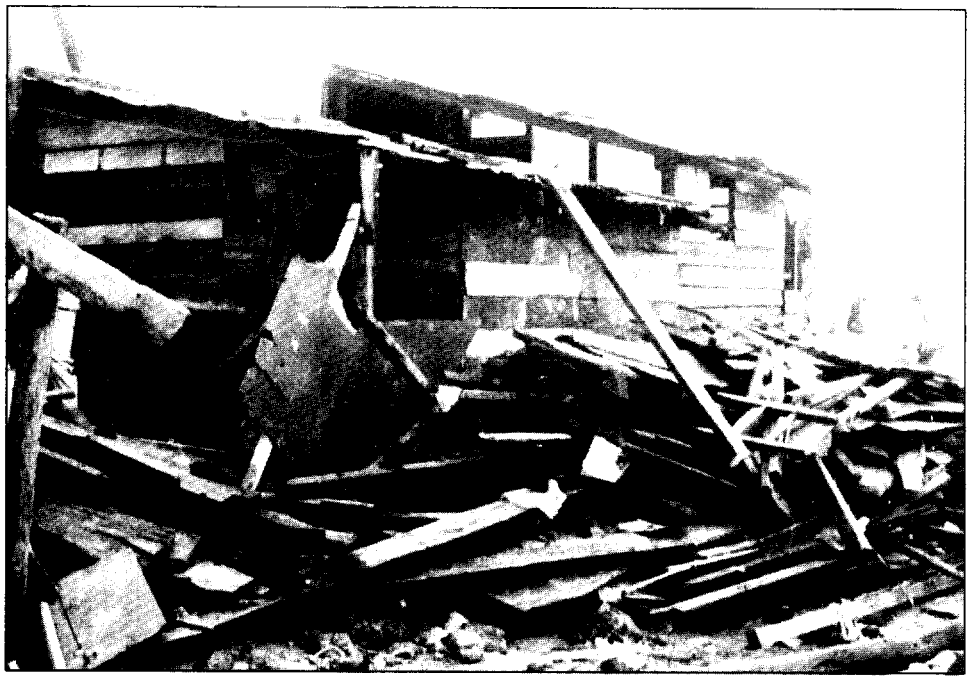

Fig. 4. Destruction of wooden houses along the coastline after Typhoon Sisang, 1987

improving its shelter services and thus the department created an emergency shelter committee. The Core Shelter Project is a result of the committee's efforts in improving the housing standards in the typhoon-prone areas. It was to be implemented on a pilot basis in the areas hardest hit by Typhoon Sisang in Regions IV, V and VIII. Today, the program has been extended to cover all regions of the country.

Objectives

The immediate objective of this project is to provide assistance to the typhoon victims for the construction of typhoon-resistant shelters in Region IV (Southern Tagalog), V (Bicol) and VIII (Central Visayas) and in turn enable the DSWD to use cost effectively the external assistance received for the rehabilitation of Typhoon Sisang victims. The long-range goal is to upgrade the emergency shelter assistance of the DSWD. This will be accomplished by increasing the participation of the victims. Through a community organizing component, the victims are expected to make personal commitments to make their houses livable and typhoon-safe.

Design of Core Shelter Unit

The DSWD developed a core shelter unit for the typhoon victims with the help of a local engineer who was in turn guided by the Senior Research Scientist of ADPC. Before its finalization, a consultative meeting was arranged between officials of DSWD, the engineer and the scientist. Originally developed by the local engineer, the plan of the unit was thoroughly evaluated by the scientist from ADPC. The scientist also made recommendations to provide typhoon-resistant features and greater structural soundness. The drawings and specifications were finalized through further consultations between DSWD and ADPC. The units were designed to withstand a wind speed of 180 km per hour. Finally, implementation began in 1988.

Construction of the Units

What was finally designed was a core shelter unit using locally-available material for roofing and timber board siding as shown in Fig. 6. Another unit using split bamboo siding is shown in Fig. 7. Fig. 8 shows the bare frame erection using the timber. In this case the beneficiary chose to build cement hollow block (CHB) walls up to the sill of window. Fig. 9 shows a number of units under construction in Tagaytay area in Cavite province. Several houses have been constructed in a planned way for a community and salvaged G.I. sheets have been used for roofing shown in Fig. 10.

Initially, 450 units were constructed for the victims in 1988 on a trial basis. Later that same year, two typhoons with velocities up to 160 and 175 km per hour struck

Fig. 5. Typical house construction in progress by victims immediately after typhoon.

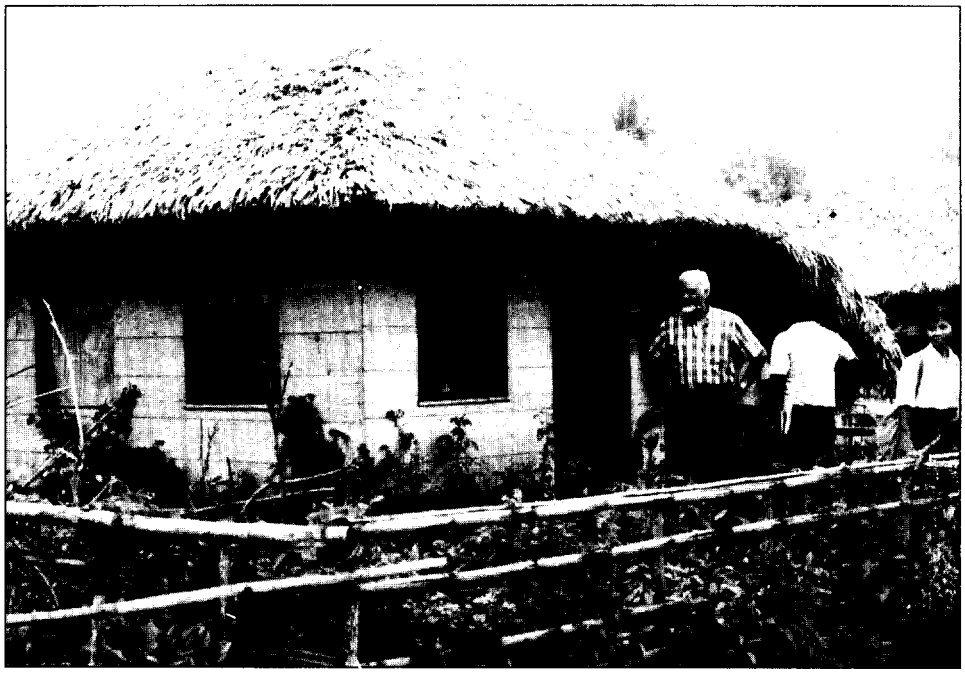

Fig. 6. New design core shelter unit (CSU) in using local material anahaw roofing and light timber board studding.

Fig. 7. ***Core shelter unit with split bamboo siding for wall covering.***

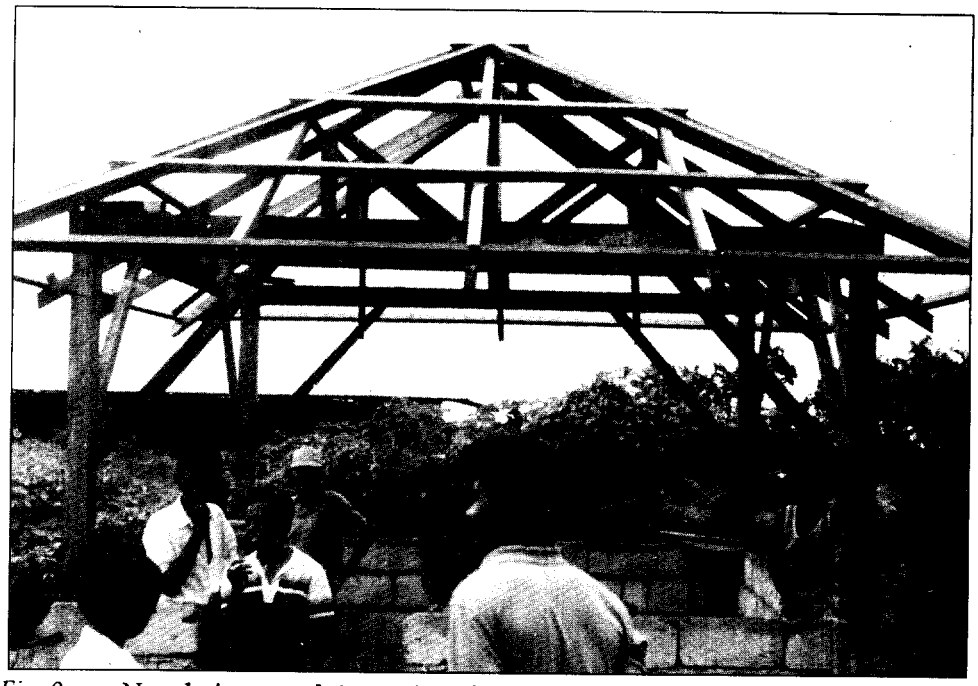

Fig. 8. ***New design core shelter unit under construction with CHB walls up to window level.***

Fig. 9. Several core shelter units under construction using CHB filler walls.

Fig. 10. A group of houses with salvaged GI sheet roofing.

the houses. All the units withstood the onslaught without any damage. This encouraged the DSWD to pursue the project as well as to increase technical assistance. Several agencies have by now expressed interest in and are giving their support in various ways. For example, the Philippine National Railways donated its land near Bato, Camarines Sur for the construction and rehabilitation of typhoon victims. A row of core shelter units in a donated plot of land is shown in Fig. 11.

UNDP Technical Assistance

The government of the Philippines attaches high priority to the Core Shelter Assistance project which is being pilot-tested in the three regions most regularly struck by typhoons. The results of the pilot implementation will serve as a basis for upgrading the existing emergency shelter assistance of the DSWD on a national scale. UNDP technical assistance was sought to facilitate the identification of the most suitable technology transfer process. Apart from various types of assistance sought under this project, DSWD specifically requested UNDP to provide a senior research scientist to advice on planning, refining and interpreting the physical design as well as transfer skills through training and demonstration to the DSWD personnel, foremen and beneficiaries. Under this pilot scheme 5,613 typhoon-resistant core shelter units in 15 provinces and four cities of Regions IV, V, and VIII were planned to be constructed.

The DSWD also expressed a desire to UNDP to make use of the technical expertise of the Asian Disaster Preparedness Center in this work because of its past experience in the development of core shelter units. UNDRO was invited to come in as a cooperating agency. ADPC happens to be a collaborating center of UNDRO. Thus, with the four organizations closely working with each other, the pilot project started to be implemented. Today, several thousand units have been constructed.

Project Implementation

It has been emphasized that the minimum requirements for a typhoon-resistant construction must be met. Cost-effectiveness is achieved by providing for roofing, walling and flooring materials made of indigenous and cheap materials. To accommodate gradual subsequent shelter upgrading, the design involves self-contained modules, namely:

Module A:	Provision of a core shelter unit consisting of foundation, wood post and framing, roof framing and trusses, gravel fill for toilet and flooring with indigenous local materials, roofing, sidings, door and windows.
Module B:	Upgrading and improvement through provision of cement hollow block walls and concrete slabs for main floor and toilet.

Module C: Upgrading through provision of door and window panels and interior finishing.

Module D: Upgrading through provision of GI corrugated roofing sheets, gutters, down spouts, etc.

This modular design incorporates all features of a modern house without imposing it on the beneficiary. There is little danger that the beneficiary will perceive the unit to be too good for his needs, causing him to give it up, lease, or sell it to meet other more urgent needs. On the other hand, motivated by an improved perception of the importance of housing, the beneficiary gains the technology that will permit him to sequence the upgrading of the units. This feature enhances the cost-effective delivery of shelter technology to low-income groups. The direct beneficiaries of the project have to meet certain criteria to qualify for the units (See page 166).

An issue that has been addressed in this project is beneficiary participation in assessing needs as well as in identifying existing resources and capabilities. The social component can never be ignored in the provision of any assistance. Beneficiary participation ensures that the type of shelter provided is exactly what the beneficiary wants and that his needs are not exaggerated. It also guarantees the building up of human capabilities, which if ignored, will give rise to dependence. Deficiencies in beneficiary involvement in the project can also have adverse consequences on the long-term ability of the beneficiaries to value and safeguard the houses given to them. Moreover, provision of post-disaster shelter may be an opportunity to develop cooperative action and spirit.

A cadre of DSWD officials at the headquarters in Quezon City, Metro Manila and regional officers down to barangay (village) level have been given specific responsibilities in the management of this project (See page 171).

The estimated construction cost of materials for the core shelter unit is about P4,500. Cost of walling and roofing using indigenous material is assumed to be P800. These prices are based on 1988 estimates. With the increase in cost of building materials year after year, the government is revising its contribution. At present, a sum of P6,500 is being spent by the government on each unit when US$ 1 = P 28.20.

Training

As part of the pilot project, the scientist from ADPC conducted a number of training programs in which DSWD social workers and other staff — supervisory and technical staff, including regional and local engineers and foremen — participated. The on-site training generally involved three days' work. On the first day, a general briefing about the project was provided by DSWD officials from the central office followed by technical presentations on the core shelter unit. The foremen

were put to work in the construction of one sample unit in the next two days. Strict quality control was enforced and foremen were trained to proceed with the step-by-step construction, following the drawing and specifications. Social workers who would be a part of project implementation watched the whole construction sequence and, on completion, checked the unit. Once the construction of a unit was finished in the field, everyone returned to the classroom for recapitulation, further question-answer session and clarifications. At the end of the training, the social workers, foremen and technical supervisory staff go back to their respective regions to begin implementing the project. Similar training was conducted at various locations by central office project staff.

Performance of the Shelter Units

As already pointed out, the construction of these shelter units started in 1988 on an experimental basis. With the good performance shown by these units during the typhoons, the project was expanded with UNDP assistance. There were some difficulties experienced in the actual construction of the units. The shelter has some unique characteristics known as "typhoon-resistant" features. Initially, it was very difficult for the beneficiaries as well as others associated with the project to appreciate these features as these are not associated with traditional construction in the Philippines. Initially, during construction, deviations from the original drawings and specifications were observed. Structural members were sometimes omitted and a few typhoon-resistant features discarded. Subsequently, advice was given to rectify these shortcomings.

A structure has many redundancies and reserve when it comes to damages. The core shelter units survived in spite of these mistakes. These mistakes were caused by negligence and failure to enforce strict quality control, contrary to what was taught during the training programs.

The research scientist from APDC, while doing periodic inspection visits, came very hard on these lapses and emphasized the importance of proper construction. He urged strict adherence to drawing and specifications as well as suggested on-site improvements both during and after construction. The quality of construction has since considerably improved. These units have faced three to four typhoons in different areas in the last four years and not a single unit has collapsed so far. The typhoon wind forces have reached up to 180 km per hour. Some beneficiaries complain that the unit is small for the average Filipino family of six. It must be understood that if unlimited resources were available, there would be no difficulty in providing a bigger unit. But as it is, it is extremely difficult to fulfill people's aspirations with budgetary constraints. However, it has been noted that people generally build extensions. The building of such extensions is the sole responsibility of the beneficiaries. The core unit is typhoon-resistant and if extensions are also built sufficiently strong by the beneficiaries, then no problems are anticipated during typhoons.

The life of these core units will be enhanced if there were proper maintenance and upkeep. Maintenance is as crucial and important as the unit's actual construction. With heavy rains in the Philippines and the possibility of termite infestation on the wooden materials, proper upkeep is necessary to lengthen the life span of the units.

Conclusion

Experience with natural disasters has time and again proven that most lives are lost by destruction due to inadequate shelters. If the structures are built appropriately to withstand the forces created by a disaster, damages may be minimized. Disasters cannot always be prevented but their disastrous effects can certainly be mitigated.

The core shelter project in the Philippines is a simple example of what can be done when various agencies are working together for common objectives. The technology of typhoon-resistant low-cost construction is available and people can be helped — especially the poor in the country who suffer the most in disasters.

Other disaster-prone countries all over the world can learn from this Philippine experience.

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2. _____ "Implementing Guidelines for Core Shelter Assistance Pilot Project for the Rehabilitation of Victims of Typhoon Sisang and Other Disasters", DSWD-BEA.

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Fig. 11. A row of houses in a plot of land donated by PNR in Bato, Camarines Sur.

Fig. 12. Orientation and training for project staff in Lucena City.

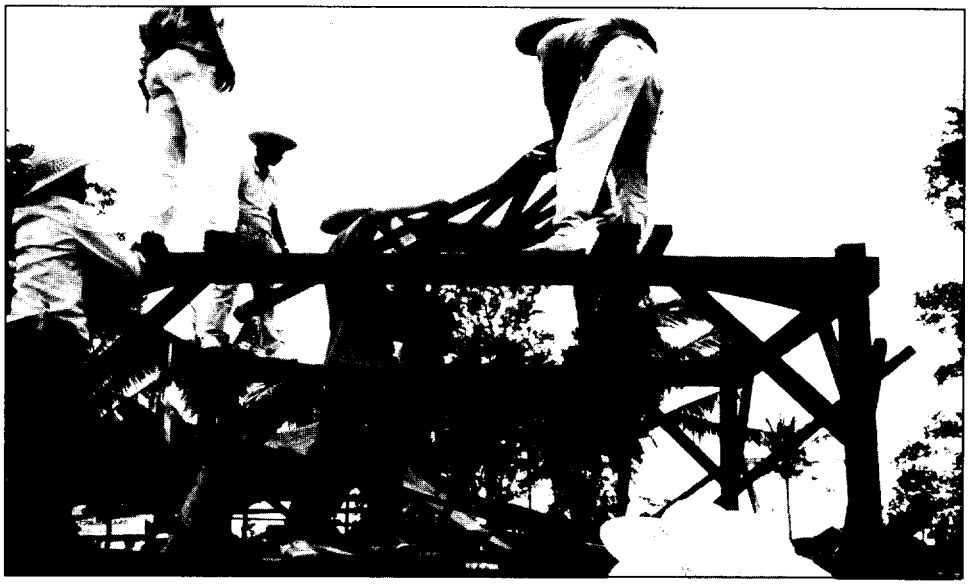


Fig. 13. Construction of core shelter unit in progress as part of training for project staff.

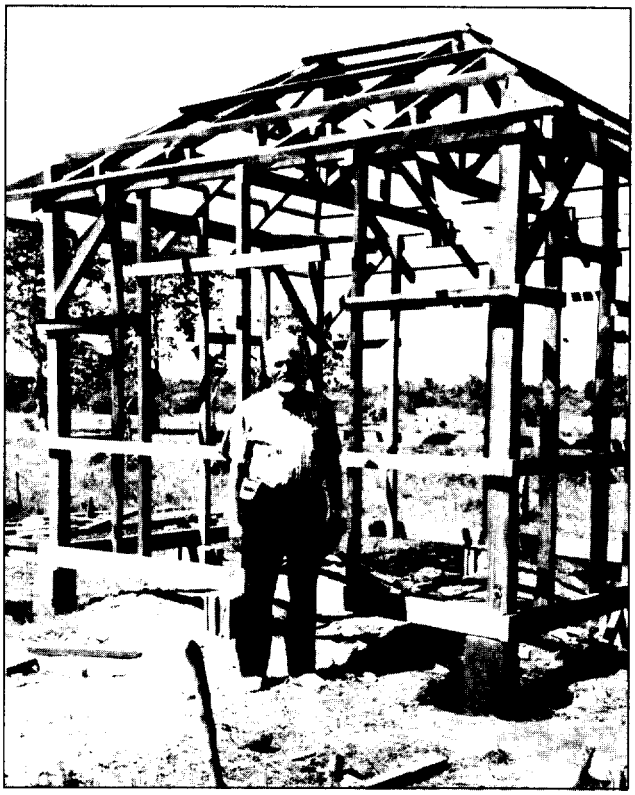


Fig. 14. Completed core shelter unit frame in Lucena City.

D. MATERIALS, DESIGNS AND TECHNOLOGIES FOR LOW-INCOME HOUSING

UNCONVENTIONAL TECHNOLOGY FOR MEDIUM-RISE HOUSING

Arch. Cesar V. Canchela
President
Canchela and Associates

The Squatter Problem — A Challenge to Government and Private Developers

Due to economic necessity and lack of decent affordable housing, 30 per cent of our urban population are forced to live in makeshift dwellings, paying as much as P400 monthly rental for a barong-barong in the crowded and subhuman conditions of squatter areas, in order to be as close as possible to their places of employment or livelihood. These squatter areas are invariably found on high-priced, though often marginal sites in urban centers. The subdividing of these sites into small individual homelots, aside from the basic difficulty in accommodating the present dwellers, oftentimes entails costs way beyond the affordability of these slum dwellers. Relocation through the provision of homelots for these people in far-off places has not consistently met with success because of a lack of employment, livelihood potential and basic services. These are, after all, the basic reasons behind the movement of these people toward the urban centers in the first place.

And so the squatting problem, oftentimes exacerbated by professional squatter syndicates, continues its rampant escalation into socially-explosive proportions that cry for immediate solutions. The problem lies in discovering what type of decent, socialized and affordable housing can be provided by the government and private sector without evicting squatter families residing on these expensive urban lots.

Lack of Affordable Housing in Urban Centers

The massive and ever-increasing demand for socialized housing is staggering when compared to the critically limited supply of such housing. Somehow, squatter colonies continue to sprout on undeveloped though prime urban land, the costs of which have skyrocketed due to ideal location and the development of the immediately adjacent areas. Added to the high cost of prime land is the accelerating escalation of building costs and interest rates which have resulted in making the social housing problem a formidable, if not impossible, task to solve. The unavailability of decent affordable housing or apartments for rent leaves a growing number of low-income city dwellers no choice but to rent barong-barongs and other sub-standard dwellings in squatter and slum areas. This situation leads to the proliferation and the expansion of squatter colonies. These problems have led design

professionals to the search for innovative design and construction technologies that can produce affordable, mass-produced, and speedily-constructed socialized apartment units that can be erected on the same squatter sites and still be economically viable to developers and beneficiaries.

These apartment units unavoidably take the form of medium-rise buildings, in order to increase population density and thus maximize land use. The increased residential densities resulting from such developments ease the cost burden relating to high land values by spreading this cost over a larger group of residents.

The proposal to adopt the condominium type of ownership fits well into the government's Community Mortgage Program for land acquisition and development. Similarly this augurs well with the subsequent financing of the construction of socialized apartment units under the CMP and Unified Home Lending Program.

The on-site redevelopment of existing squatter areas within urban centers is a compelling alternative to relocation — one that poses a substantial and challenging problem for urban planners to address. The obvious advantage to this scenario is that utilities and services are readily available in the urban centers. This is generally not the case in suburban or provincial relocation sites. The trade-off in land value from expensive urban land to much cheaper land has been tried as in the case of resettlement sites in Carmona and Dasmarinas. These have not entirely solved the problem because squatters return to their original squatted areas for lack of livelihood in the new relocation sites.

Basic Needs and Affordability — Primary Considerations

Economics, particularly the affordability of the beneficiaries, should dictate the cost of every social housing unit. Socialized housing therefore needs to be designed and packaged based on beneficiaries' affordability as the point of reference. There is no sense in producing social housing units that beneficiaries can not afford. Unavoidably, the affordability of the occupant dictates the size of the unit. The plan of the basic unit derives from the simple basic shelter need of a Filipino family consisting of one space that doubles up for many purposes as living room, dining room during the day, and in the evening as bedroom, such as in the ubiquitous *bahay-kubo*. These basic features are present in the apartment unit.

The density concept is dictated by two opposing forces: one, the need for accommodating as many families as possible within a fixed area; and the other, the provision of a high level of amenities, more generous open spaces at the expense of having a lesser number of families within the same limited land. Is the cliche, "the greatest good for the greatest number" then valid?

Current regulatory standards have reduced rights-of-way between buildings to the minimum of six meters, perhaps as a recognition of the increasing usage of pedicabs or tricycles within residential areas. These obviously do not need the

wider streets required by jeepneys. The roof decks of such buildings offer good potential for utilization as recreational areas and additional open spaces for the building occupants so that scarce ground-level open space can be used primarily for accessibility and other services.

From Squatter Areas into Healthful Communities of Medium-Rise Buildings

Using appropriate technology, any squatter area can be speedily transformed into a physically well-planned, healthful and well-ordered urban community, with commercial, livelihood and open recreational spaces, consisting of typical four-storey reinforced-concrete condominium buildings owned by the apartment dwellers themselves. Condominium ownership on expensive urban lots is a style of living which the affluent have already accepted, as in Makati, and which the low-income sector should also learn to accept as a necessary reality of urban life.

This developmental solution can be replicated in any depressed urban area, especially in Areas for Priority Development or APDs. The solution accommodates variations in physical planning, density and community architecture as suitable for each area. This approach offers an immediate, humanitarian and economical response by government and private developers to the urgent need of housing the urban poor on expensive squatted land, where the concept of a detached house and lot is impossible since it cannot accommodate all the residents therein. This eliminates the necessity of uprooting and relocating bonafide squatter families to farflung places, and the attendant problems related to such radical relocations. Besides, blighted urban areas can be developed faster and can enhance their adjoining environment for the welfare of the larger urban community.

From the preceding analyses of the squatter problem in urban centers caused by the massive demand for socialized housing, it would seem that the economic factor, more than any other, affects the architectural solution if not the architecture itself.

A Solution – Densification and Cost-Effective Building Technology

Due to rising cost of urban land, on-site or in-city, medium-rise multi-family housing is the obvious solution to providing affordable shelter for the urban poor. This is in lieu of one- or two-storey, single-detached housing.

Why On-Site or In-City

The answer may be found in the October 14, 1991 editorial of **Bulletin Today**: "With the ever higher commuting cost, the wastefulness of prime agricultural land for single-detached housing subdivisions and the staggering cost of extending water, electricity and telephone lines to the far suburbs, there is a clear need for

accessible low-income housing in Metro Manila. Most low-income, single-detached housing developments, however, are far from the city center. Subdivisions now extend all the way south to Dasmarinas and Santa Rosa, north to Marilao and Novaliches and east to Teresa. Perhaps the authorities can shift emphasis away from single detached housing and seriously study the possibility of supporting low- and medium-rise, low-cost housing units in convenient areas."

Housing needs, therefore, can be met by building multiple-family dwellings in already developed areas where jobs and basic services are available and the environment is at less risk. Commuting to jobs from single family homes in subdivisions that are two or more hours away from urban centers makes no sense at all. Besides, environment is disturbed by the conversion of productive agricultural lands to residential subdivisions. The relentless sprawl of suburban detached housing subdivisions is pushing nature to the wall. This should be remedied before we run out of land, which is a limited resource, by adopting subdivisions of medium-rise condominium apartment buildings instead.

Why Medium-Rise Apartment Buildings?

The answer is obvious and this is to increase density and maximize utilization of high-cost urban land not only for residential but also for commercial purposes. The density in a typical single-detached, low-income housing subdivision is about 80 family units per hectare. This is a wasteful use of land because medium-rise multiple family apartment buildings can increase the density to between 400 to 700 families per hectare. In addition to maximizing land utilization through increases in density, there is the reduction of the land-sharing cost per family unit. For instance, on a density of 690 families per hectare, the land-share per apartment unit is only 14.5 sq m. Therefore, land costing P2,000 per sq m would have only a shared cost to each apartment unit of only P29,000 (14.5 x P 2,000) instead of P160,000 (80 x P 2,000) if this were single-detached housing.

How to Produce Decent, Affordable Apartment Units

In addition to reducing cost of urban land to the beneficiary through high-density usage, lessening construction cost can be done through the application of innovative design and construction technology for the mass-production of reinforced-concrete apartment buildings in urban centers at costs lower than conventional methods.

One such technology is the reinforced-concrete, prefabricated and mass-produced apartment buildings that can be erected through a stacking process that reduces the cost of production of these buildings.

Affordable Prefabricated Medium-Rise Buildings Using New Technology

A fast-track solution to the urban housing problem is the speedy construction of several prefabricated four-storey reinforced-concrete box design apartment buildings on squatted lots with a condominium type of ownership to accommodate all the squatter families residing therein. These buildings consist of unitary, prefabricated, mass-produced, reinforced-concrete shelter components or apartment boxes which can be erected according to an invention called the Canchela Shelter Components and Stacking Process for Multi-Storey Buildings (CSCSP), a process covered by Philippine Patent No. 24939 and Copyright Reg. Nos. R 4322-A, 1988, G 947, 1989 and R50756, 1990.

The shelter component is a unitary, precast, reinforced concrete rectangular box, open at both longitudinal ends, to serve as the basic apartment unit. The stacking process involves at least two shelter components arranged alongside each other at a predetermined distance so that one shelter component can be mounted on or straddle the top of the shoulder portions of the two shelter components below it. The mounting is done in such a way as to allow connection by steel plates and angles at their points of contact.

Cost Savings from Stack Process Technology

The Stacking Process creates a shelter space between two shelter components, horizontally and vertically, equivalent to that of one apartment unit. This accounts for cost savings since a building with 50 apartment units, for instance, would need only to fabricate and erect 25 shelter components or boxes as a result of this innovative stacking process, to produce the 50 apartment units.

The sequence of construction starts with the first floor cast-in-place shelter components or apartment units on appropriate foundations, spaced apart to receive the precast shelter boxes on top of two shelter components. The stacking process is repeated for the second, third and fourth floors until the structure of the building is completed.

The architectural, plumbing and electrical works are then undertaken to complete the building ready for occupancy.

Economy of Scale and Speed of Construction

Another feature for the CSCSP technology is that economy of scale is achieved through mass production, prefabrication, handling, and erection of the shelter components or boxes using appropriate equipment such as cranes to hasten construction not achievable by conventional poured-in-place concrete construction.

Furthermore, mass-produced, prefabricated shelter components made under quality-controlled conditions, whether in plant or on site, tend to be more economical in the long run when considered on a mass scale.

Structural System — Box System vs. Space Frame

The Shelter Component as initially described is a precast reinforced-concrete apartment box open at both ends. Structurally speaking, the box system design of each shelter component or box and its anchored weldable steel plate connections to contiguous shelter components, meets the requirements of the National Structural Code of the Philippines, to resist stresses produced by lateral forces due to earthquakes.

This bearing wall system or box system is a structural system without a complete vertical load carrying space frame. In this system the required lateral forces are resisted by shear walls.

The cost of structure is at least 45 per cent lower, with a thrice faster construction time, than the conventional poured-on-site reinforced concrete, space-frame structural system of the same size. This is due to the box design and the stacking process used. This new technology and construction system reduces cost of structure, hastens construction time, shares expensive land cost and produces decent housing affordable to the urban poor.

The NHA-Vitas Medium-Rise Housing Project — The Application of a New Technology

The NHA-Vitas Medium-Rise Housing Project is an in-city development involving medium-rise apartment buildings. It contains 1,664 apartment units of 18 sq m floor area each in 27 four-storey buildings on a land area of 2.41 hectares located along the R-10 in Vitas, Tondo, Metro Manila. Each apartment unit shares in the land area by 14.51 sq m only or a high density of 690 families per hectare. The project was started in March 1990 and included a road network of 900 meters of cemented roads with drainage, and water supply consisting of two overhead water tanks with their respective underground reservoirs, a water distribution system and electrical installation.

The project using the new CSCSP technology of prefabrication and stacking process was completed in October 1991 for a total of 570 calendar days or 19 months with a total of 494 working days or a production rate of 3.37 apartment units per working day. This is inclusive of mobilization, formwork design, foundations and cast-in-place concrete works, precasting, stacking and erection, architectural, plumbing, electrical, civil works and land development. With further refinements in the technology and availability of steel forms, the production rate was increased to 4.3 apartment units per working day.

Due to the inadequacy of the precasting area at the Vitas Project site and the non-availability of cranes and other appropriate handling equipment cranes, the shelter component or box was divided into three segments to reduce the weight of the shelter component and facilitate handling and lifting for the allowable load-capacity of available cranes. Two equal segments represented one apartment box. The third or corridor segment of the building adopted the use of the precast integrated building system for easy casting, handling and erection.

A basic apartment unit contains 22.50 sq m floor area (3.0 x 7.5 m) including corridor front and rear balcony, with a height of 2.50 m. The basic unit can easily be expanded horizontally into larger apartment models as desired, by joining adjacent boxes (see illustrations of expanded models). Upgraded apartment units with higher quality finishes can also be done for economic housing. All buildings have roof decks and are variable in length in structural modules of 3 meters.

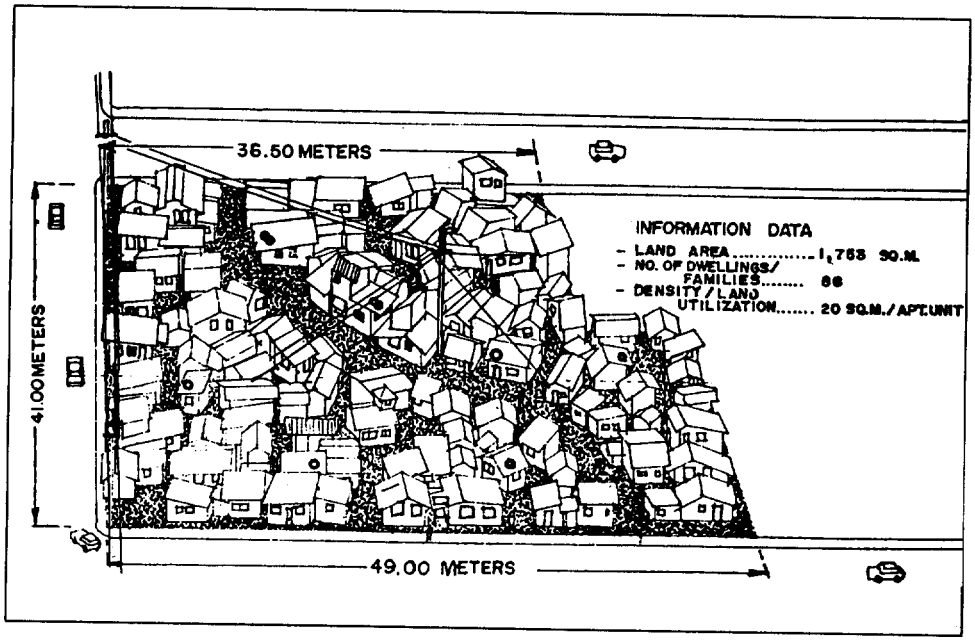


Fig. 1. A typical squatter area.

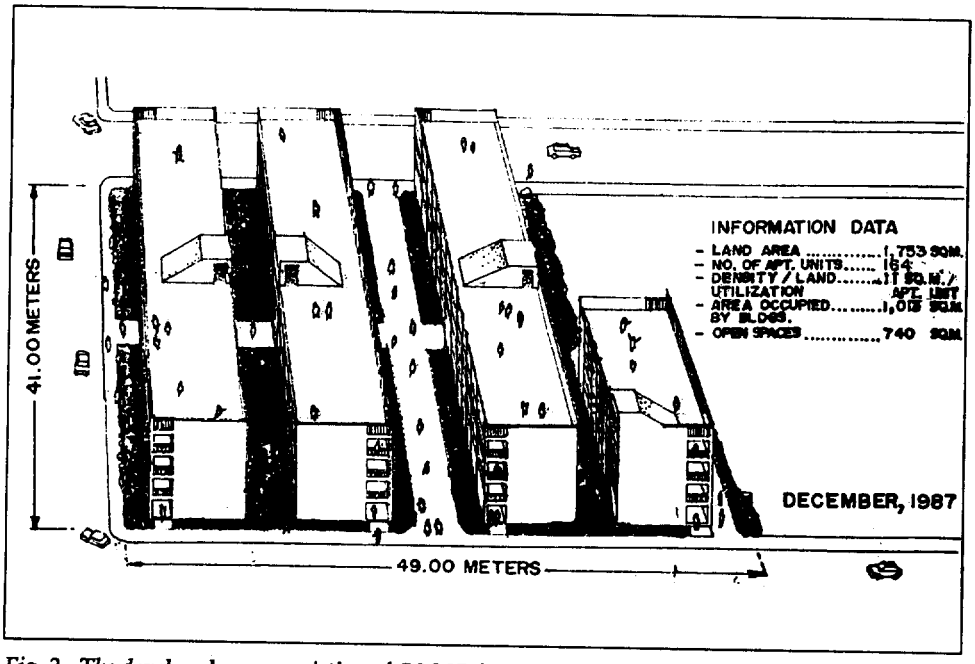


Fig. 2. The developed area consisting of CSCSP four-storey low cost condominiums.

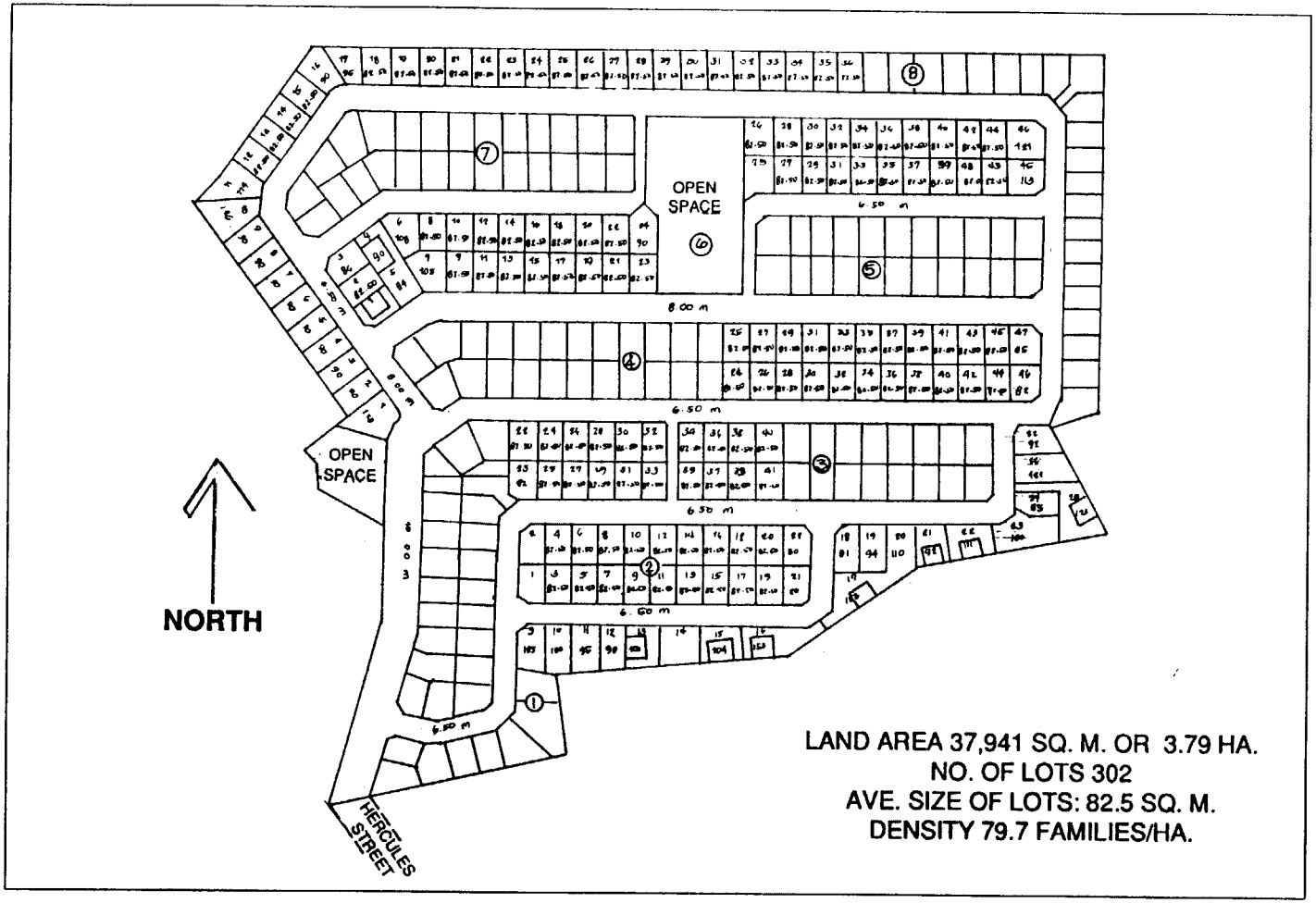


Fig. 3. A subdivision for single detached housing in Metro Manila.

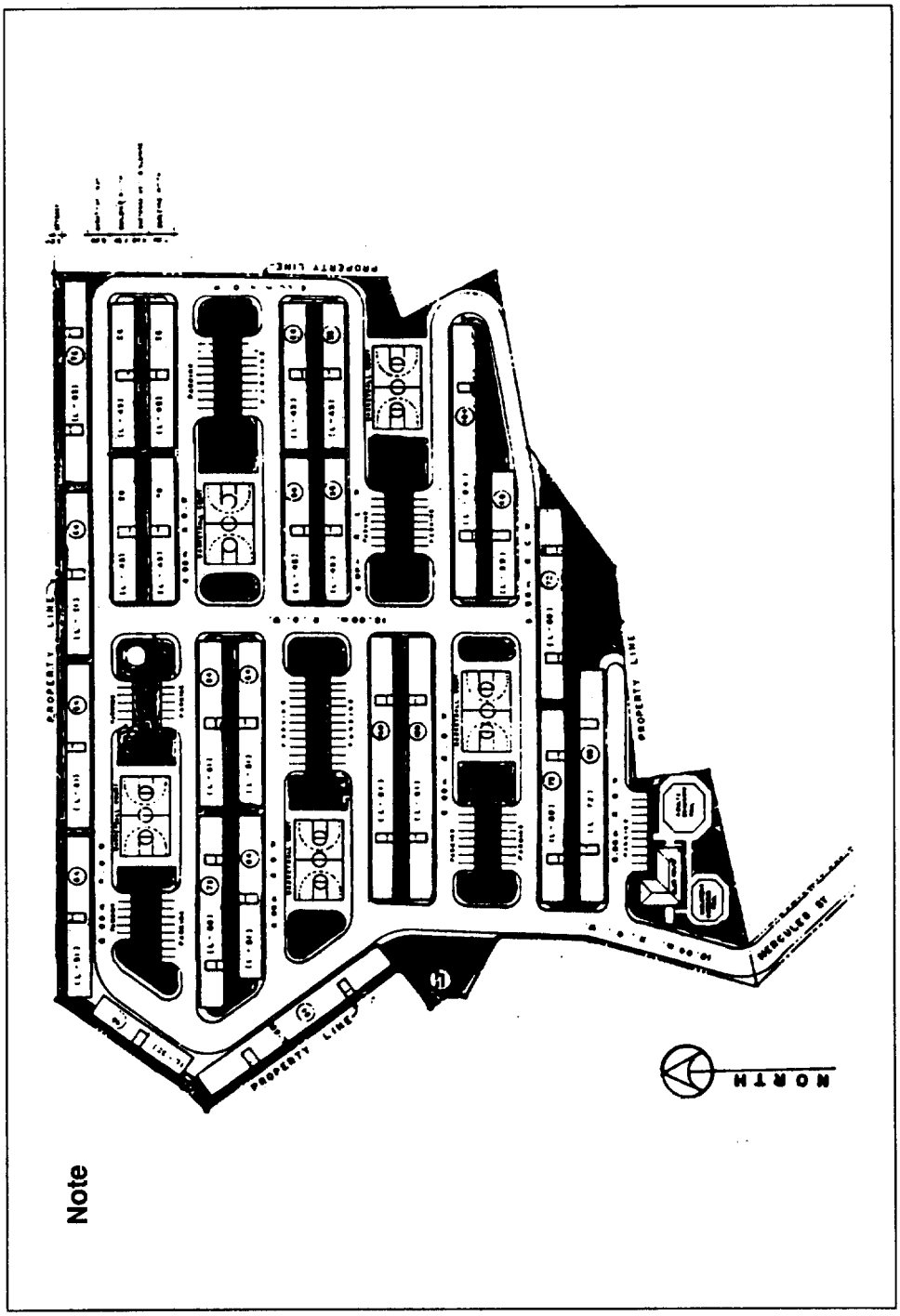


Fig. 4. Physical and site development plan.

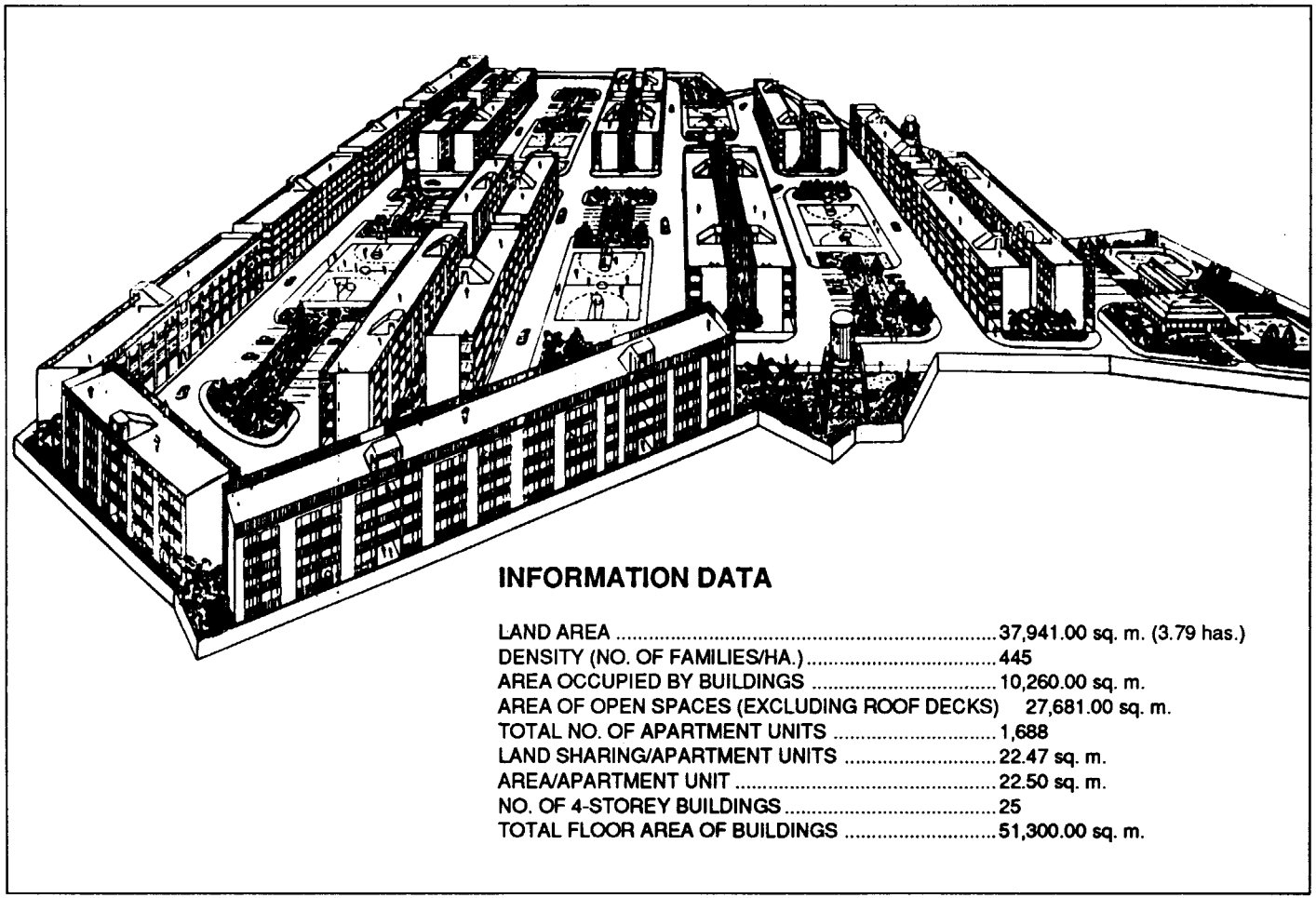


Fig. 5. Perspective

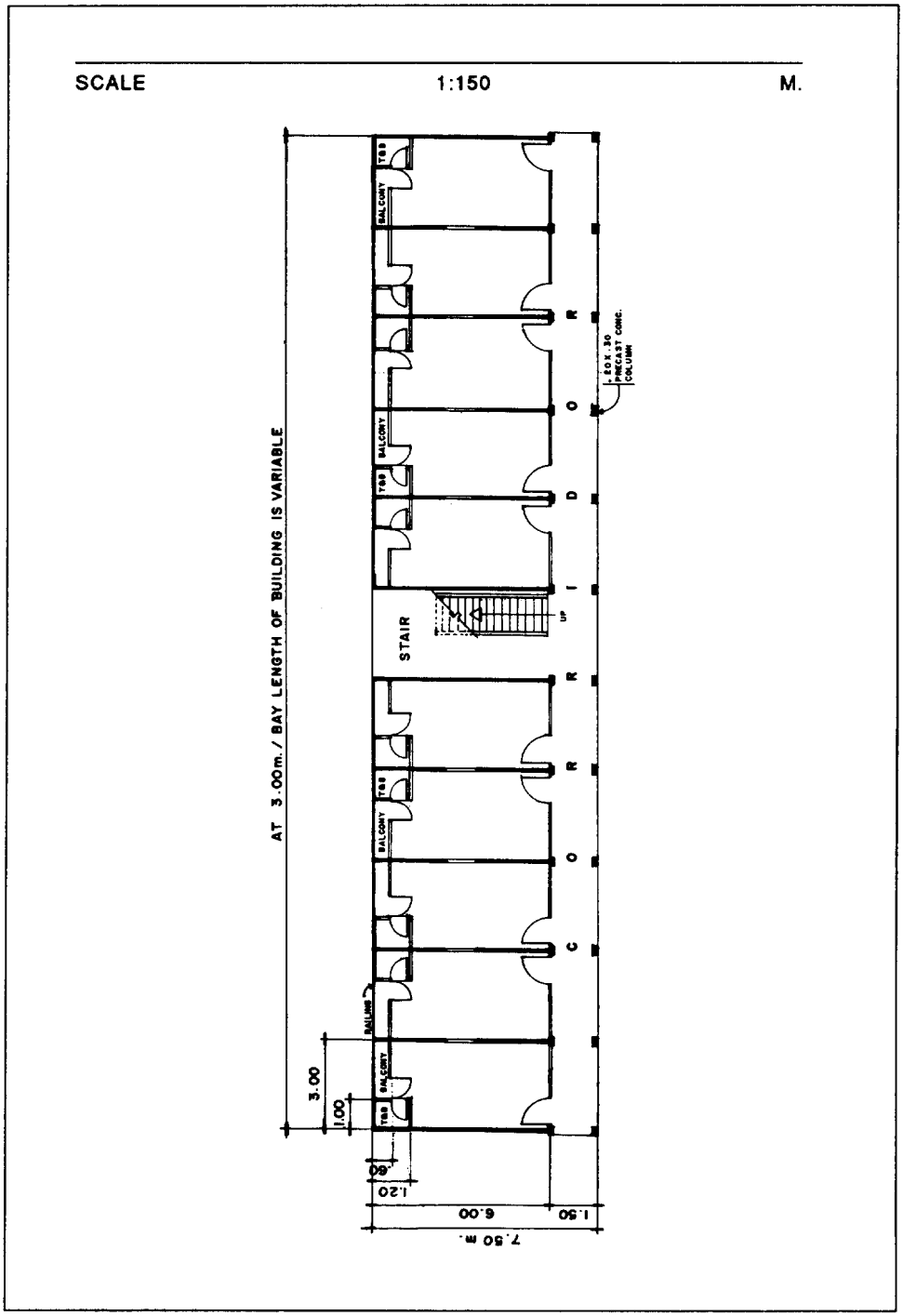


Fig. 6. Typical floor plan.

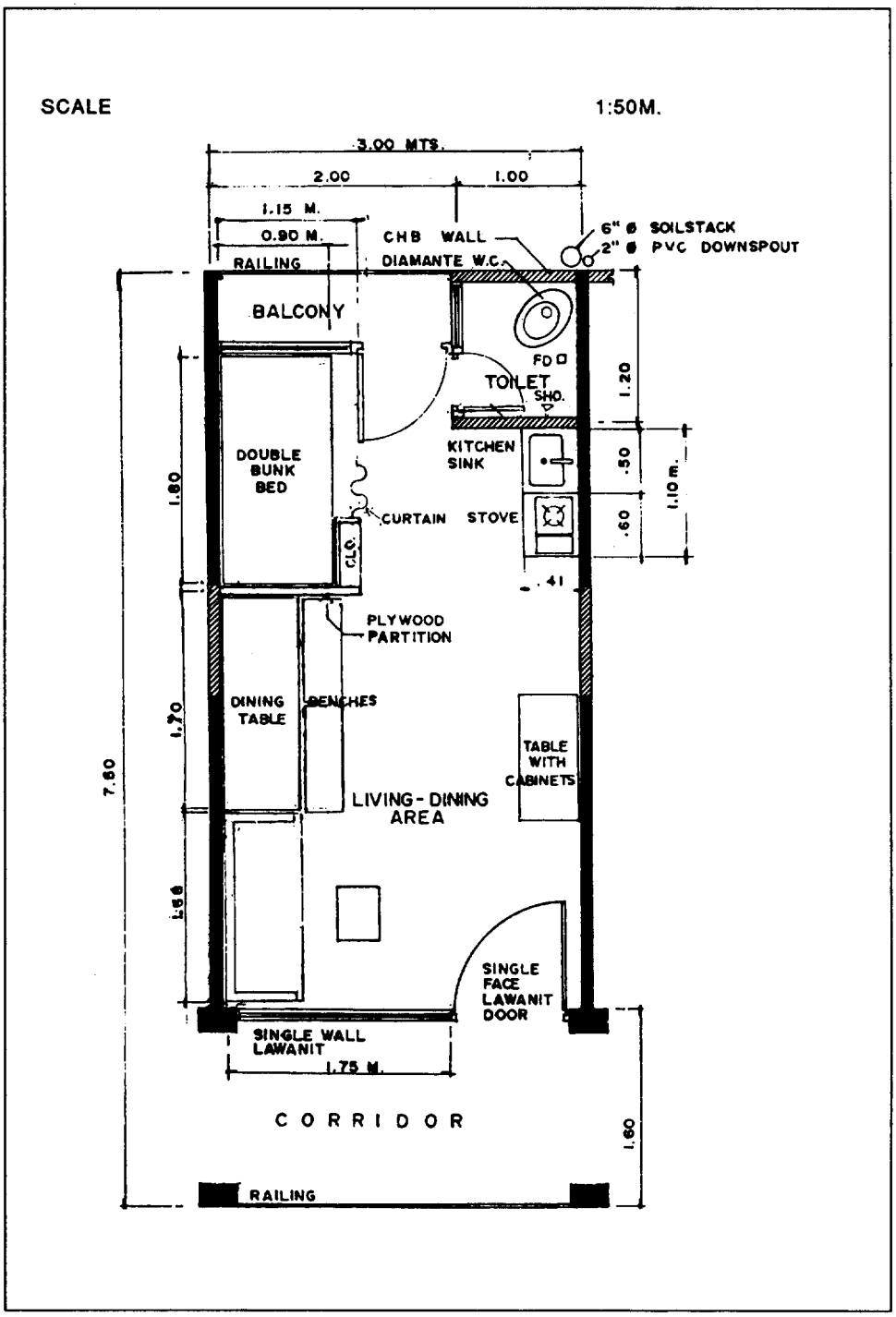
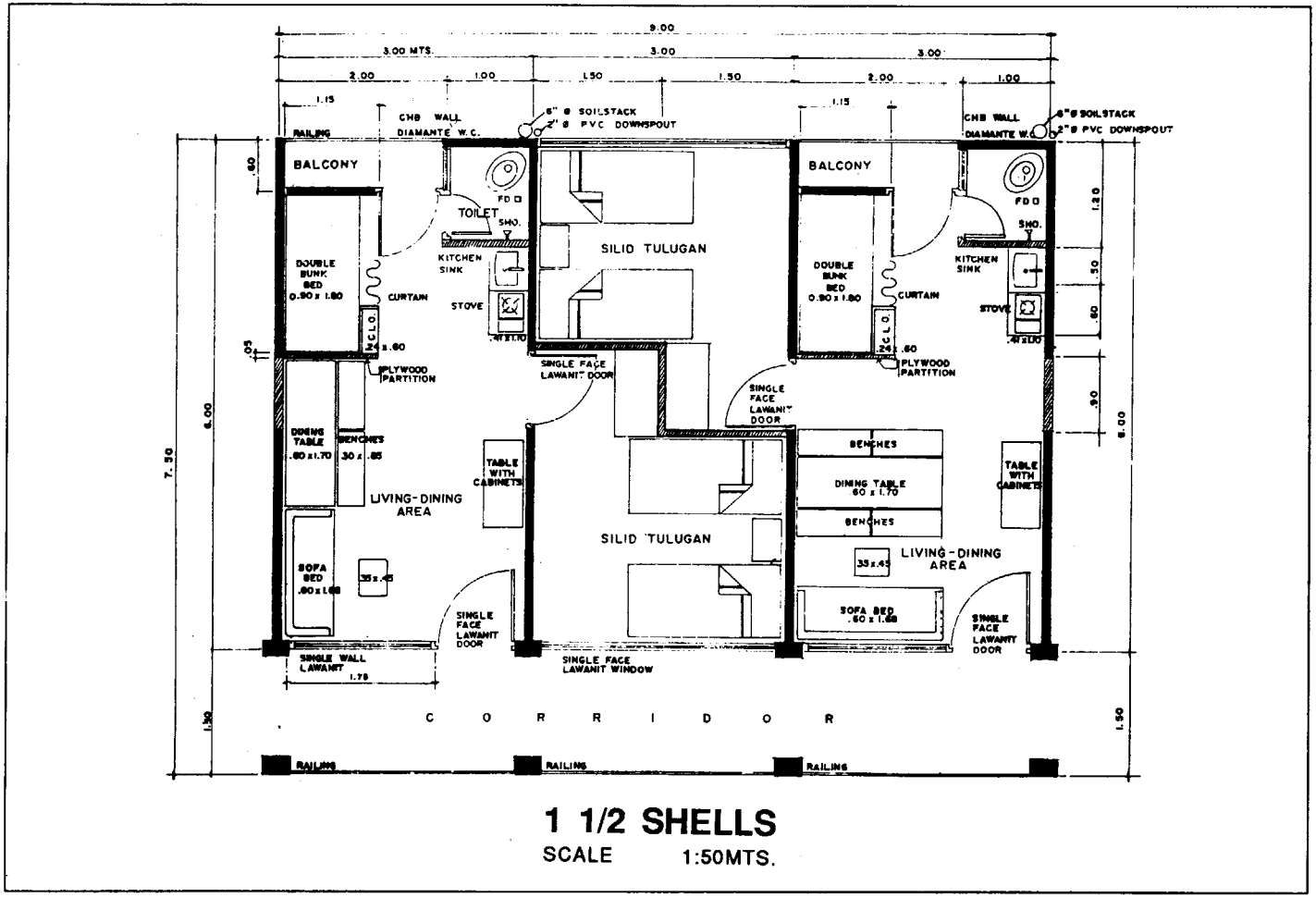


Fig. 7. Floor plan detail of basic apartment shell.



1 1/2 SHELLS

SCALE 1:50MTS.

Fig. 8. Typical floor plan of expanded apartment for social housing.

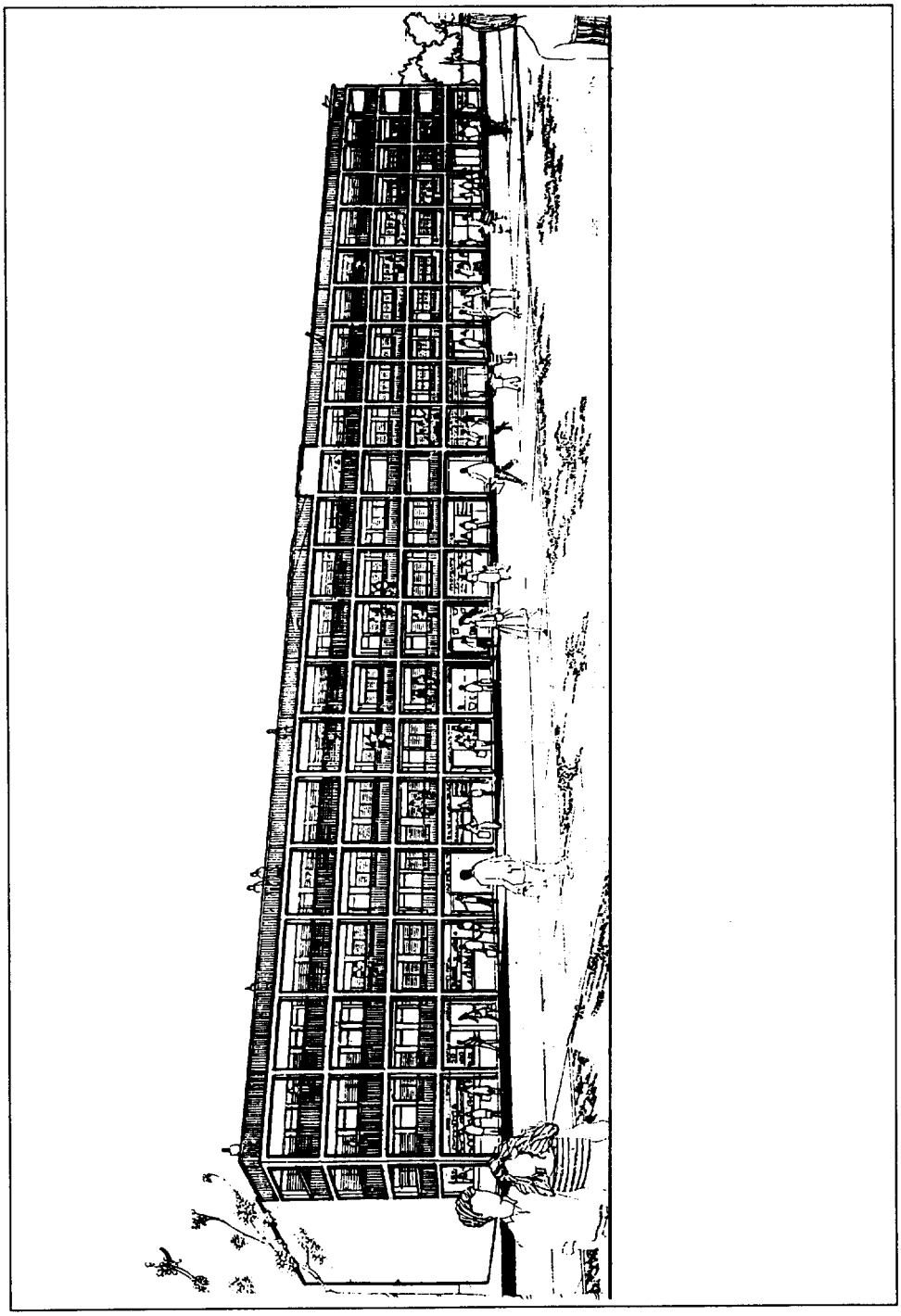


Fig. 9. Perspective of typical building.

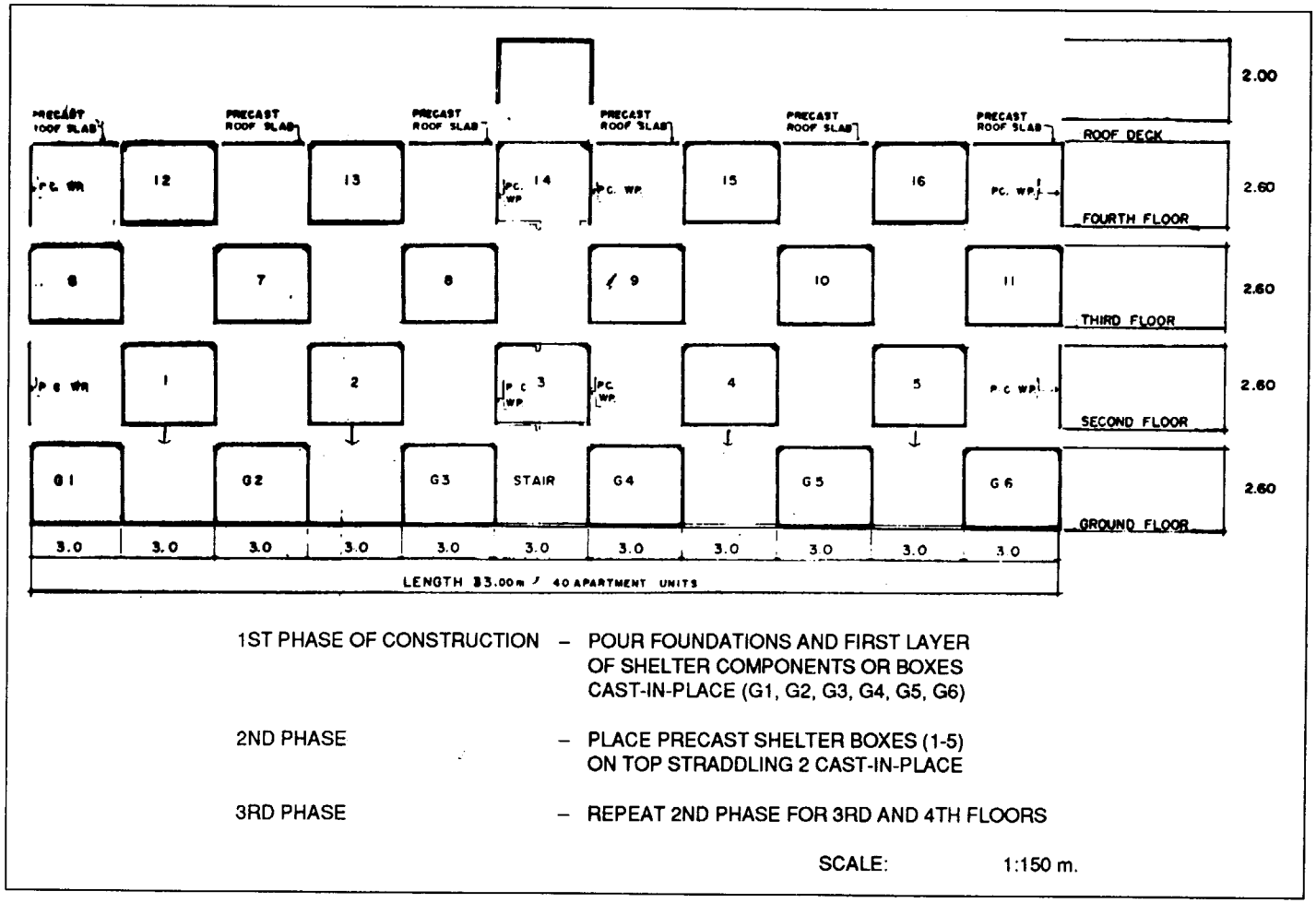


Fig. 10. Construction phases.

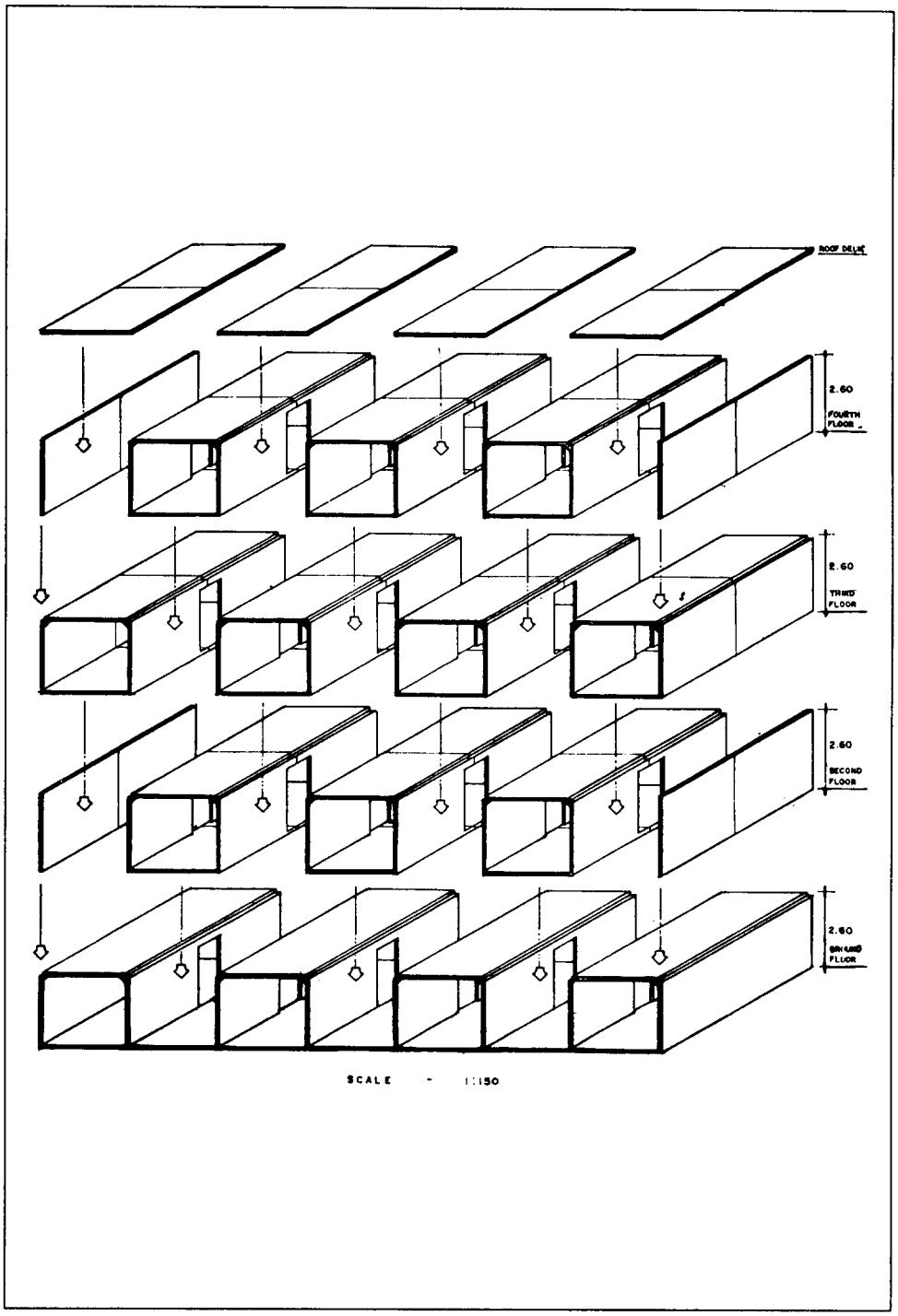


Fig. 11. Construction Phases
Dimensional View

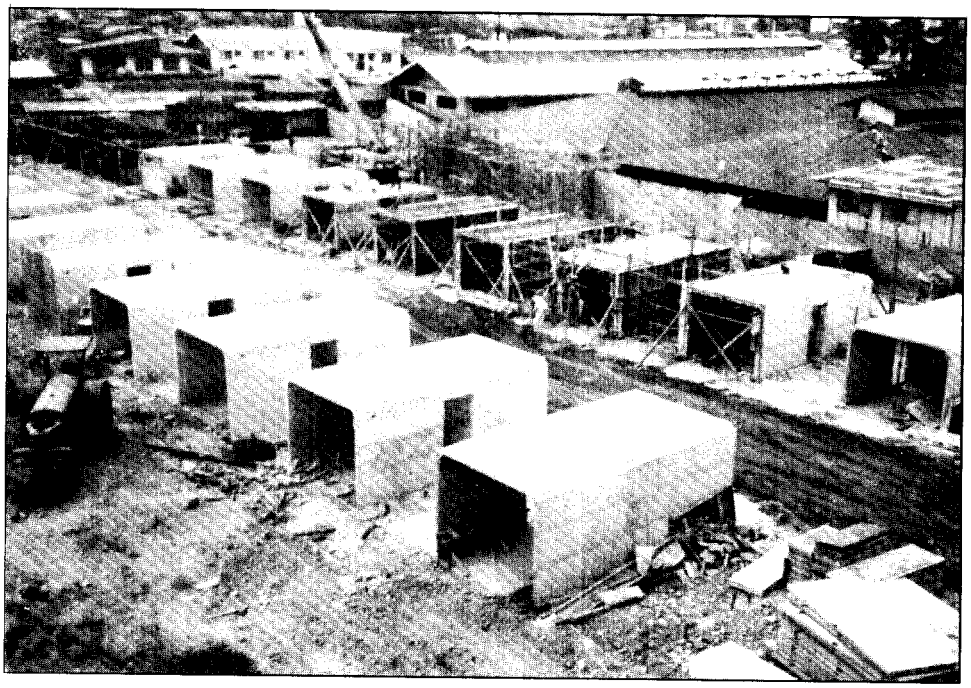


Fig. 12. Cast-in-place structure of apartment units.

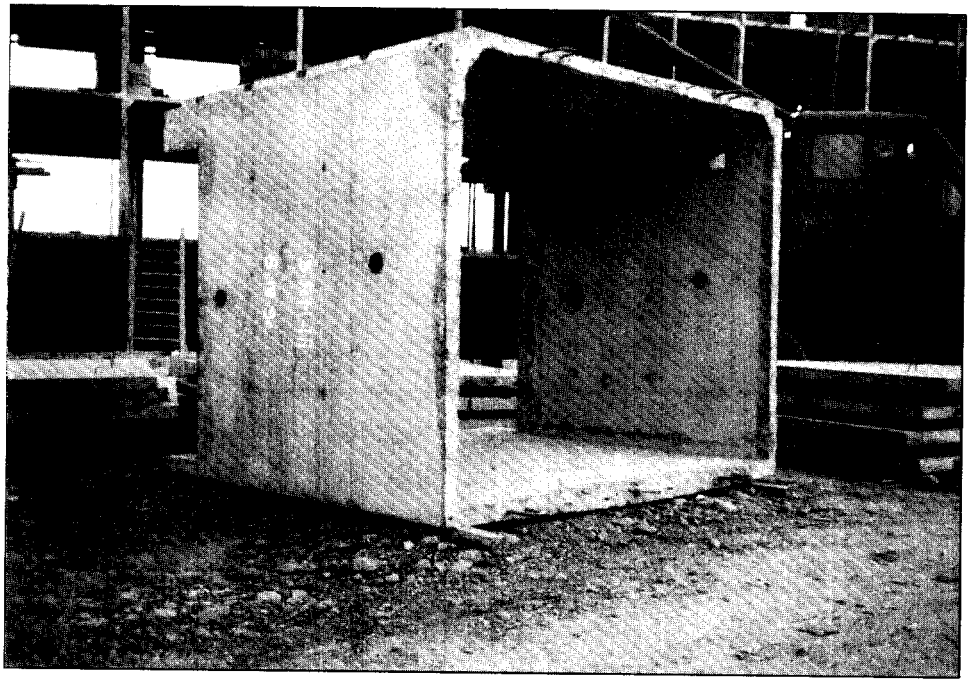


Fig. 13. Precast shelter box component.

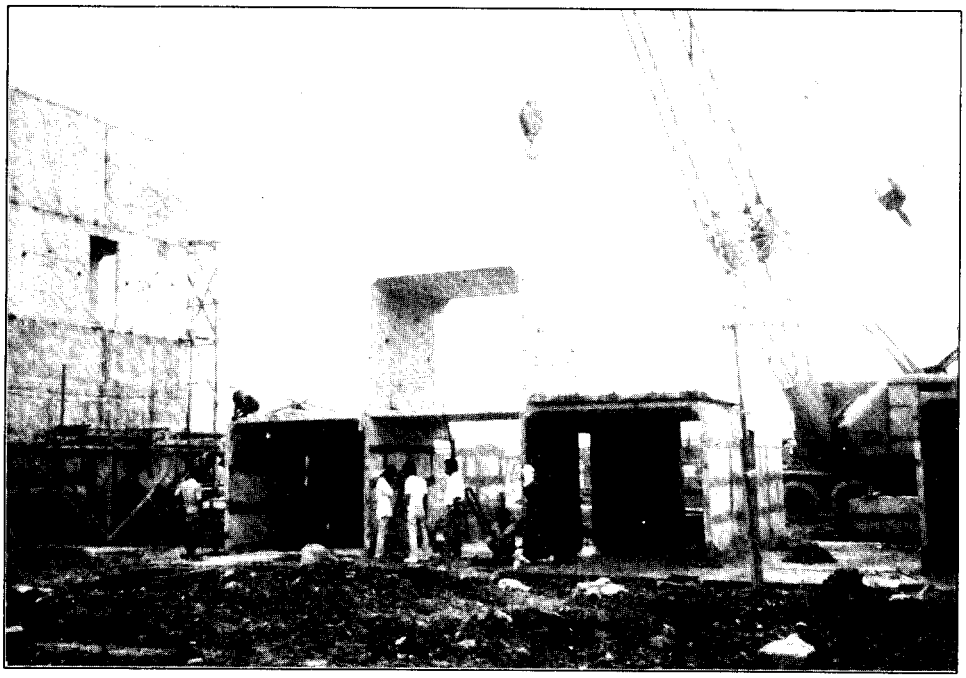


Fig. 14. Start of the stacking process.

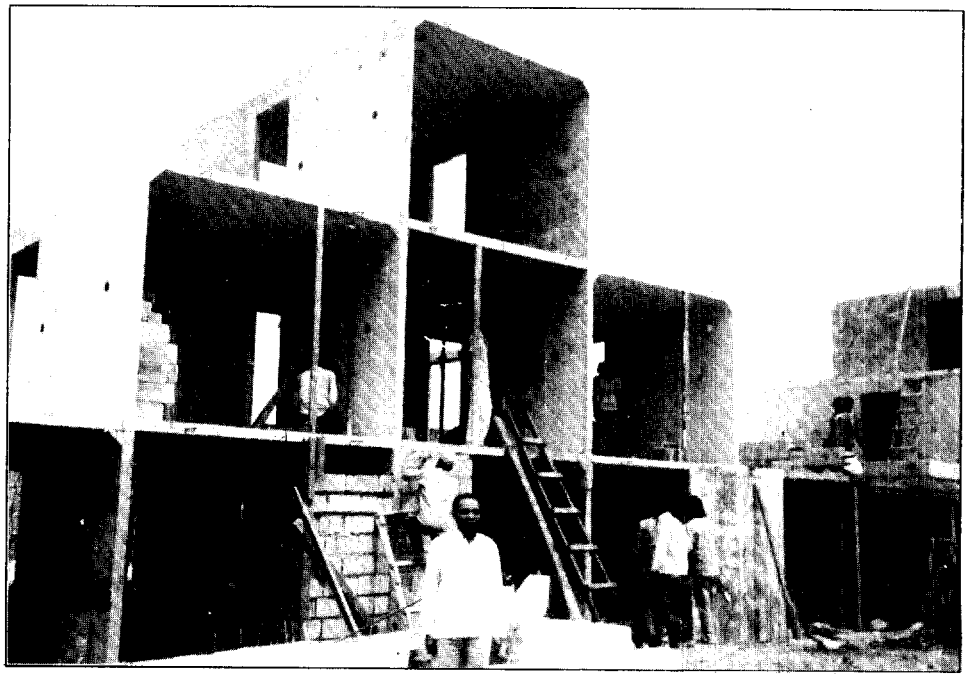


Fig. 15. Stacking process continues to third floor.

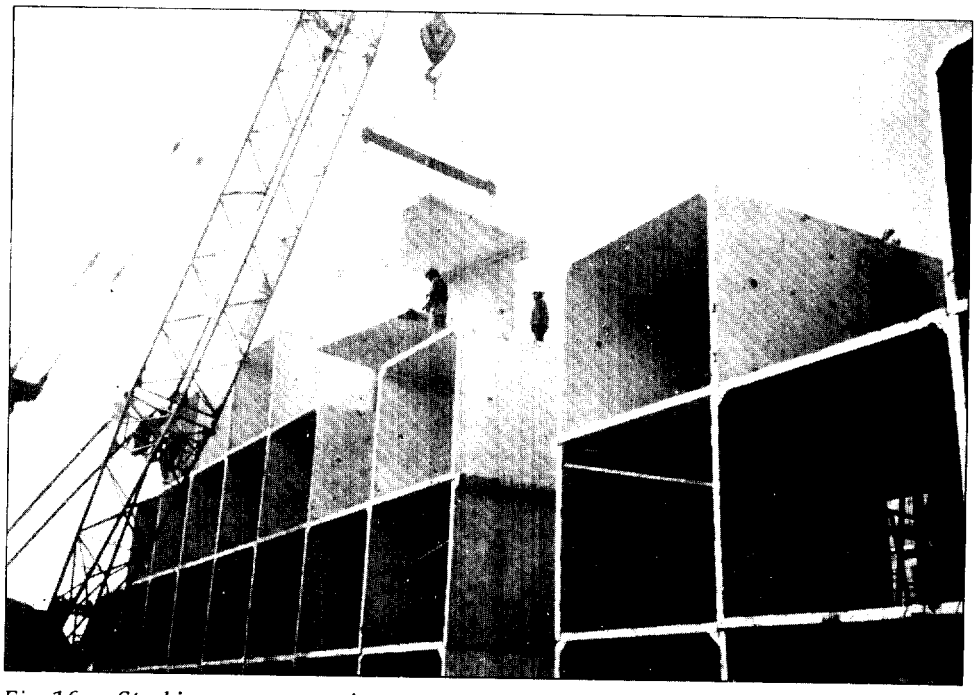


Fig. 16. Stacking process continues up to fouth floor.

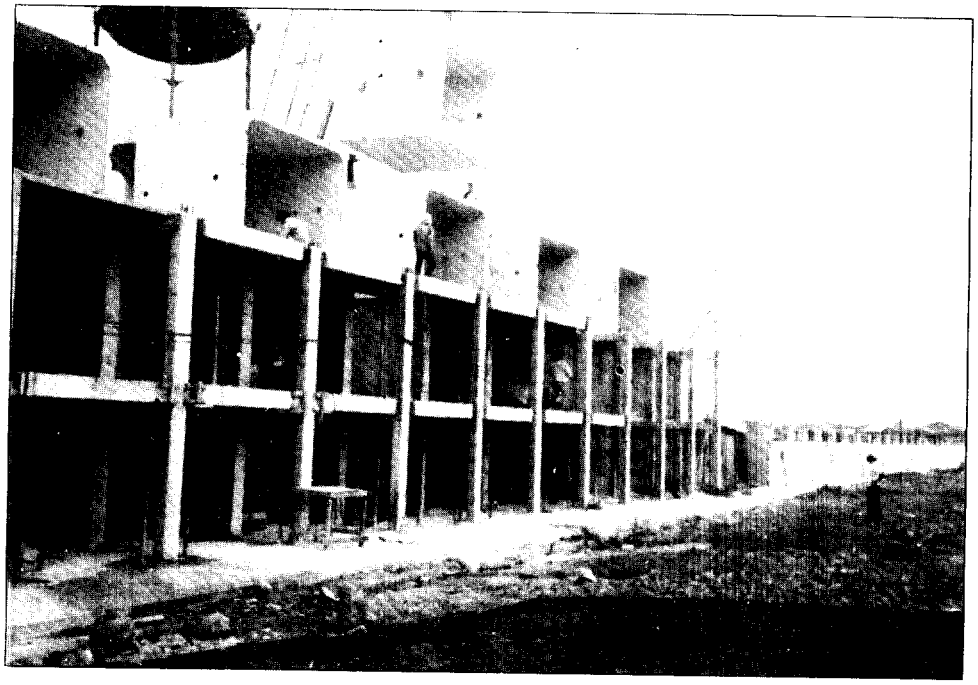


Fig. 17. Corridor component of building.

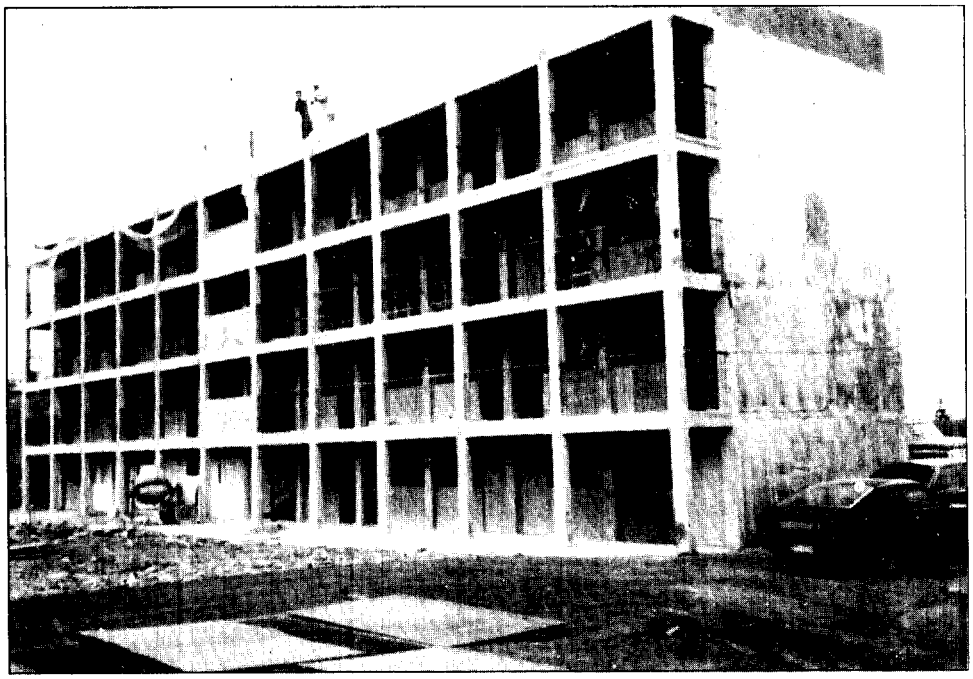


Fig. 18. Four-storey apartment building with roof deck.

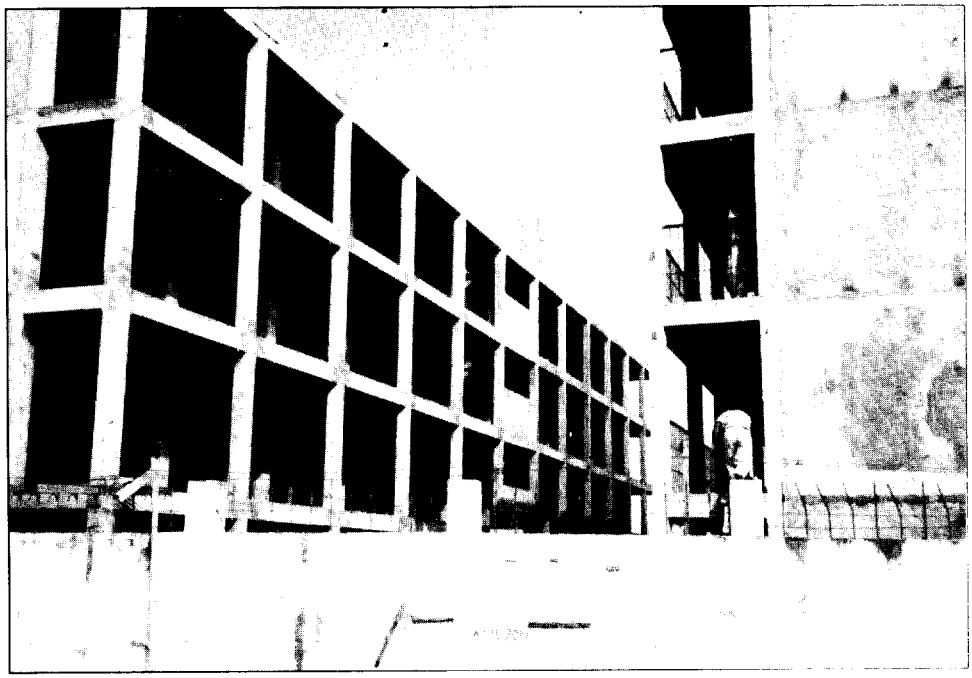


Fig. 19. Two buildings facing street.

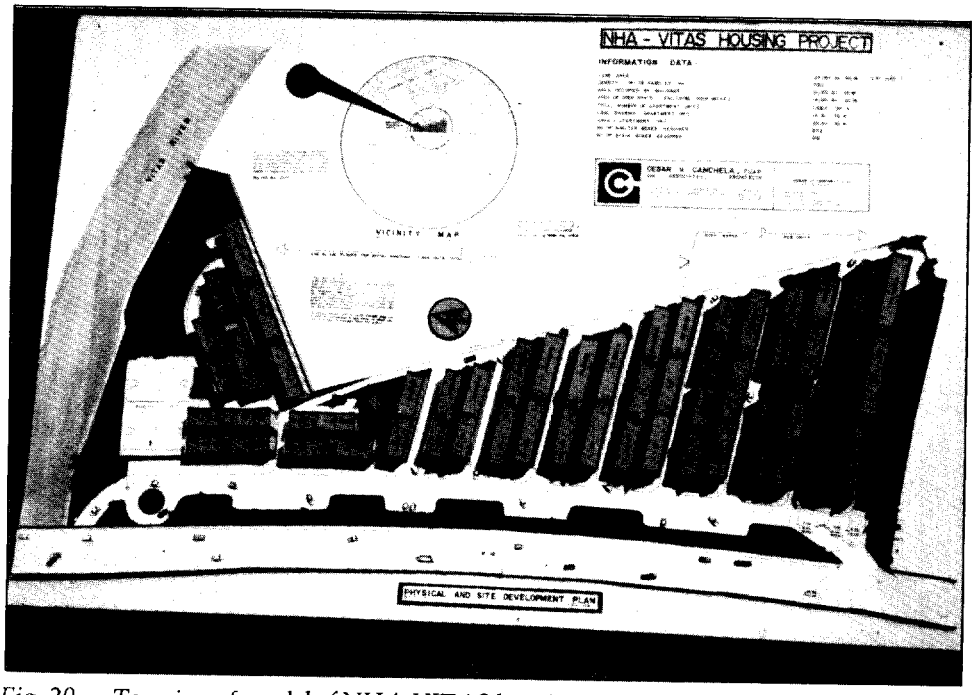


Fig. 20. Top view of model of NHA-VITAS housing project consisting of 27 four-storey buildings with 1,664 apartment units.

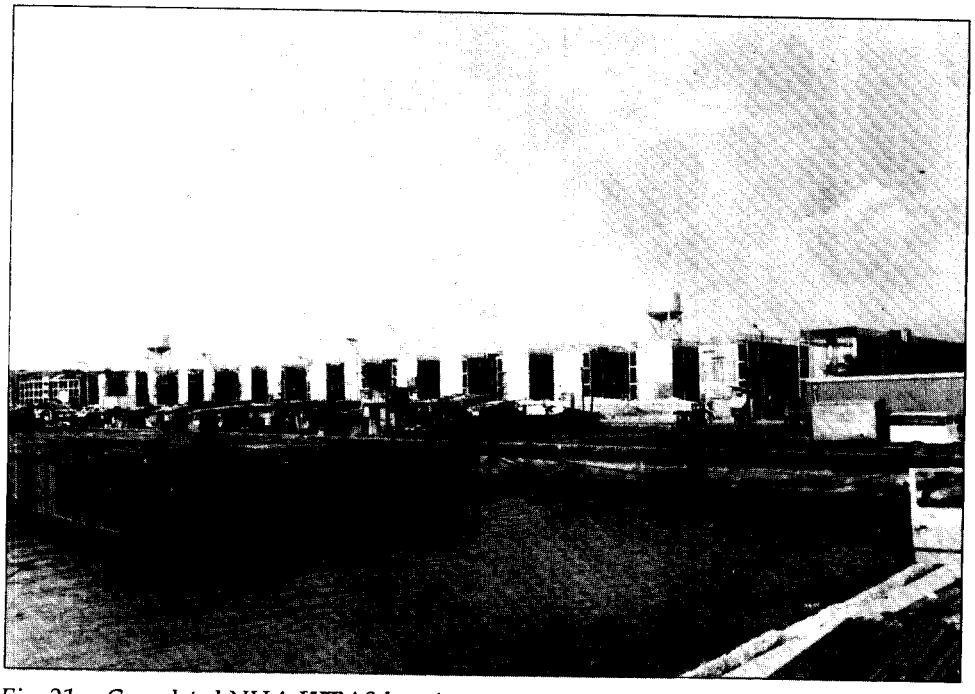


Fig. 21. Completed NHA-VITAS housing project as seen from the Manila Bay.

THE FRENTS HOUSING TECHNOLOGY FOR MASS HOUSING

Serafin G. Aquino, Jr.
President
FRENTS Housing Settlement, Inc.

Introduction

The urgent need for better technology in the production of mass housing is so often obscured by our rush to meet the housing requirements of a fast-growing population. In the process of building big numbers of houses for the homeless at the shortest possible time, little recognition is given to the imperative of enlightened design and prudent use of construction materials.

The frightening possibility that we are running headlong to the point where it will no longer be a question of affordability but of availability insofar as construction materials and resources are concerned seems to be of little import at the moment.

Already dwindling construction materials and resources are still unknowingly being squandered at the expense of present homebuyers and to the detriment of future families. The FRENTS housing technology was developed over several years of research, development and field experimentation with the aim of addressing this serious malady and beneficially redirecting the country's housing effort.

Design and Technological Objectives

Essentially, the FRENTS technology aims to optimize the provision of housing through (1) the intelligent choice of building materials and construction methods; (2) practical design and space-saving approaches; and (3) the prudent use of construction materials and conscientious recycling of construction wastes. Its objective is to produce houses that look good, are safe, comfortable, easily maintained and affordable. The system also focuses on the utilization of unskilled labor to as large an extent as possible.

Why Concrete Masonry Exterior Walls?

A critical evaluation of available house construction materials in the country shows that concrete or concrete masonry houses are characterized by high livability, durability, fire-resistance and maintainability. This is the basic reason behind the

ubiquity of concrete or concrete masonry as an exterior wall material in contemporary house construction. This is the same basic rationale behind the use of a type of concrete masonry for the exterior house walls of all FRENTS houses, most specifically the patented, interlocking concrete hollow block.

Concrete hollow blocks have developed into one of the most important materials in modern building construction, not only in the Philippines but also in most other countries of the world. Statistical figures in many countries indicate a steady increase in production from year to year. Among the major advantages of the concrete hollow block are: (1) economy; (2) durability, especially against tropical weather conditions; (3) resistivity to termites; (4) fire resistiveness; (5) suitability for use as both load-bearing and non-load bearing walls or partitions; and (6) adaptability to diverse architectural styles as well as to a wide variety of surface finishes for both exterior and interior walls.

Another important advantage of the hollowblock is that it can easily be produced anywhere in the country. This is in contrast to other materials that require sophisticated central factories for their manufacture and thus also require high capital investment. Concrete hollow block production on the other hand is a highly labor-intensive process.

For all these reasons and more, hollow block construction has been made the basis of all FRENTS houses.

Basis of FRENTS Technology

The FRENTS technology centers on a patented, interlocking and self-cooling concrete hollow block. This type of hollow block was developed over a 10-year period comprising basic research and development and numerous construction experiments in different parts of the country. Called IHB for short, these interlocking hollow blocks can be manufactured on site wherever FRENTS house models are being constructed with the use of portable electric generators, mortar-mixing machines, locally-fabricated hollow-block fabrication machines, wooden racks, special steel pallets and special individual plastic shrouds. The IHB is covered by Philippine Patent UM-3116 and D-1216. (See Fig. 1 and 2)

In actual construction, the cores of the IHB are left unfilled with mortar except those designated by the architect or structural engineer to contain reinforcing steel bars. This ensures excellent insulation against heat and noise and protection against fire and storm. The unfilled cores also permit the running of electric wires and plumbing pipes inside the hollow blocks. This allows for in-the-wall construction, at no extra cost, for house wires and plumbing pipes in contrast to the often exposed wiring and plumbing commonly found in low-cost housing.

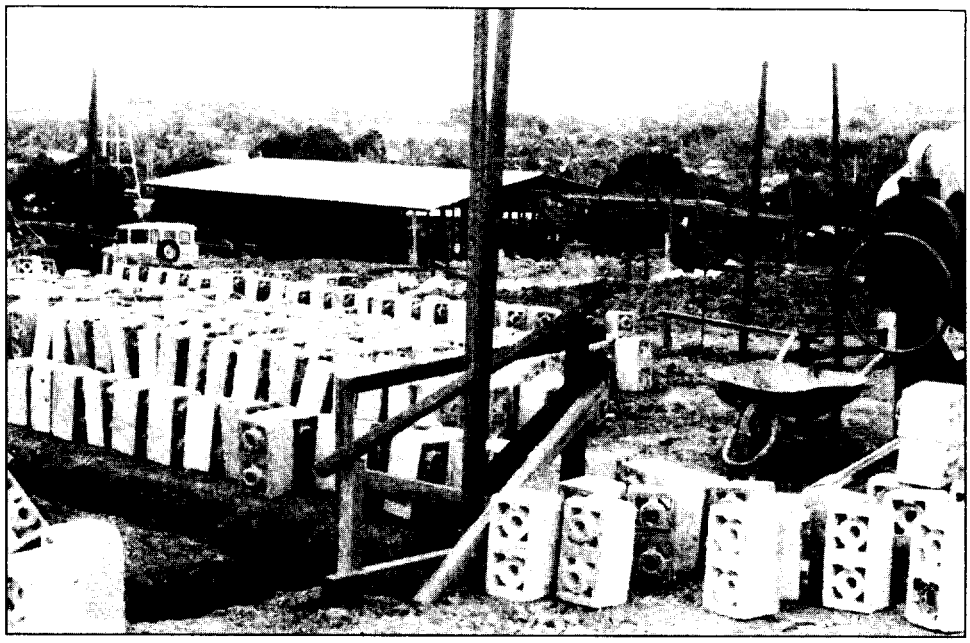


Fig. 1 The patented interlocking hollow blocks.

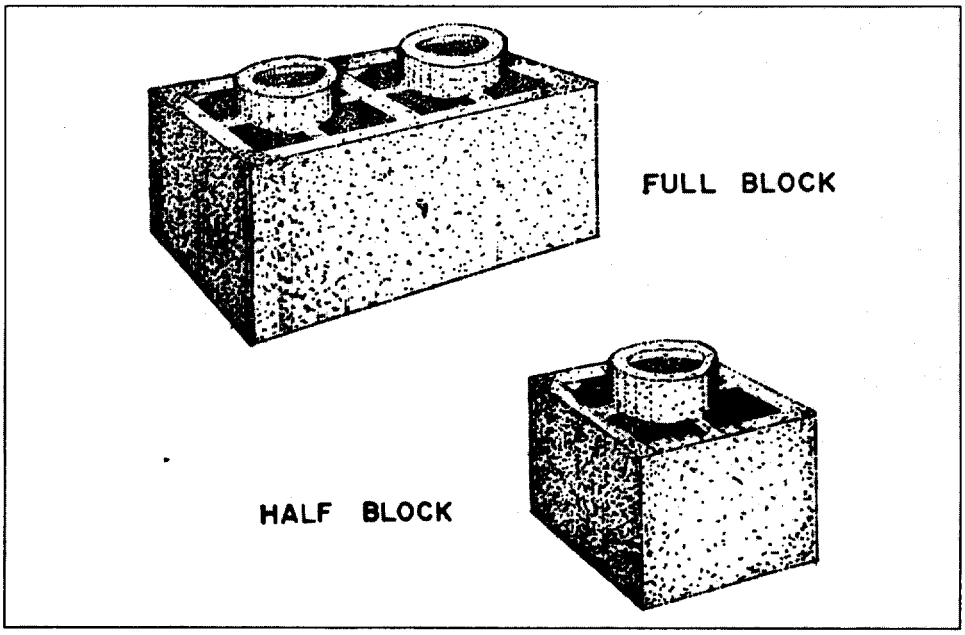


Fig. 2. IHB: Close View

Self-Cooling House

A self-cooling house particularly in the tropics is of great value because of the energy savings it achieves. Self-cooling is one of the primary design considerations in the FRENTS house. Exterior walls are all self-cooling, as is the roof. The use of the patented FRENTS interlocking hollow block, which has three parallel longitudinal walls, five cross walls and ten hollow cores, ensures the reduced penetration not only of heat but also of noise through house wall.

The performance of the interlocking hollow block house wall was monitored for one year and the results show that the inner face of any exterior house wall remained approximately 12°F cooler than the outer face during the hottest periods of the day. This temperature difference approximates the performance of a typical window-type air-conditioner. The phenomenon can be explained by the fact that the cores in the FRENTS hollow blocks are left unfilled with cement mortar up to the very top of the wall. This allows heated air generated by the sun striking the outer face of any exterior wall to rise inside the hollow cores and escape through the attic. Any heating caused on the middle longitudinal wall of the interlocking hollow block is similarly dissipated along the next row of hollow cores. This leaves the inner phase of the house wall virtually unaffected by the incident heat of the sun.

FRENTS houses, regardless of size, utilize masonry walls for all exterior walls and for certain interior walls. The basic reasons for this are as follows: (1) during earthquakes, the masonry partition walls act as shear walls, thereby assuring a structure resistant to damage from seismic forces; (2) research in the southern United States by the University of Texas reveals that the use of masonry walls can maintain lower daytime temperatures by utilizing night air to cool the heavy walls. These then act as a heat sink to keep the house cool longer during the period of high outside temperatures the following day.

The use of natural ventilation for home-cooling purposes is another feature of FRENTS houses. The size and placement of doors and windows are determined in consideration of through-ventilation. A study at John Hopkins University on tropical housing shows that natural air movement coupled with selective use of forced mechanical ventilation can provide acceptable levels of comfort in tropical dwellings without the use of air-conditioning. This has since been corroborated by recent local studies on passive-cooling technology.

FRENTS technology further taps an inexpensive way to cool a house — by cooling its roof. The temperature generated in the attic on a hot summer day can go up to around 150°F. This directly affects room temperatures below. Utilizing a simple and basically traditional energy-saving design technique, the FRENTS house is provided with a self-cooling roof without the use of electric ventilating fans. Efficient no-power attic cooling is achieved with through-ventilation made possible by the use of a low-pitch roof and continuous or wrap-around soffit vents along the

exterior house walls. This method provides a continuous flow of outside air into the attic that replaces or "sweeps" away the heated air under the galvanized iron roofing sheets as well as the heated air coming from the hollow block walls. This lowers the temperature in the attic, in turn reducing ceiling temperature in the rooms below.

Compact Practical Houses

Spiralling construction costs have seen the progressive shrinking in size of houses in the past decade, not only in the Philippines but in the world in general. This trend is evident of the fact that where space was a liberal commodity in yesterday's house, it has become a costly premium in today's dwelling. This is due not only to the initial high labor and material costs, but also to the continuing energy and maintenance costs.

The sensible, compact house is becoming the norm for more reasons than one. FRENTS houses are designed with the aim of being compact in every sense of the word. Efficiency in the utilization of interior space is a prime consideration. Designed to be compact, they nevertheless strive for roominess. This is achieved by (1) practical zoning of interior spaces according to function and (2) carefully-designed room arrangements which seek to achieve a character of liberal space not found even in larger dwellings.

The basic FRENTS technology allows for adaptability to diverse styles of architecture and applicability to a wide variety of do-it-yourself surface finishes for both interior and exterior walls. This characteristic is important in the Philippines where the desire for individuality in housing appearance is pronounced. FRENTS houses have also been designed to be built with appropriate levels of technology and relatively low levels of construction skills. Tolerances for errors related to the utilization of unskilled labor have been built-in to the FRENTS technology so that even the least qualified laborers can be effectively employed without impairing the quality of construction.

Small Bedrooms, Big Living Room

The space constraints in the design of low-cost housing necessitate intelligent and sensible allocation of areas for living, sleeping and service. FRENTS houses feature compact bedrooms designed primarily for sleeping and privacy, taking into consideration the dimensions of bedroom furniture commercially available. Floor area savings from the bedroom design are devoted to making the living-dining areas more spacious. This is obviously aimed at providing for the close family relationships that all too often are the first to fall victim to the battering effects of modern urban life.

Toilet/Kitchen Plumbing Design

One of the most expensive parts of a house is the toilet/kitchen complex. The costliness of this complex becomes more pronounced where the plumbing design is extravagant and inefficient. The FRENTS technology aims to demonstrate that a well-planned toilet/kitchen complex coupled with a simple, well-designed plumbing installation can produce better dwelling sanitation at a greatly reduced cost. Back-to-back toilet/kitchen arrangements are typical of the FRENTS house design. This assures economy in the use of pipes as well as significant savings in interior floor areas. The practice of stack venting of sanitary fixtures, which allows the grouping of the water closet, shower, lavatory and kitchen sink into a single vent pipe, is used in the FRENTS house. This is most economical for one-storey houses. The patented double-line septic tank is so positioned that the shortest possible pipe runs from the fixtures to the septic tank and from the septic tank to street sewers.

Outdoor Laundry Tub

Because of the compact space arrangements in FRENTS houses, laundering facilities have been brought outdoors. This prevents prolonged occupancy or use of a bathroom or a kitchen sink for laundry work. It also prevents wetting of floors inside the house. During the dry season, such arrangement makes practical use of the rear yard. The outdoor laundry tub is connected directly to the patented double-line septic tank. Laundry waste water is thus processed before it is discharged from the house sanitary plumbing system into the community sewer.

Sanitary Venting

Adequate venting is essential to a house plumbing system as it is the only means of equalizing air pressure and ensuring proper circulation in waste water and soil lines. Without adequate venting, flush toilets will not flush properly and waste water from kitchen sinks, lavatories and floor drains will not readily flow into the septic tank. The FRENTS house differs greatly from the ordinary house in plumbing ventilation because one row of the unfilled round cores of the FRENTS interlocking hollow blocks serves as the vent pipe inside the wall. In the FRENTS house, there is, therefore, no vent pipe that protrudes through the roof. This is a big factor in preventing the penetration of rainwater through the galvanized iron sheets into the ceiling below. Such penetration is a frequent occurrence in protruding vent pipes in tropical housing situated in the typhoon belt.

The invisible vent pipe has become known as one of the distinguishing features of the FRENTS house. Because the FRENTS patented double-line septic tank requires a double plumbing system, of necessity, there are two sanitary vents in each FRENTS house. Each vent is about two inches in diameter and runs from the

floor level up to the top of the hollow block wall. The FRENTS sanitary vents end just above the ceiling where free air abounds, constantly being changed and circulated by means of the soffit vents.

Patented Double-Line Septic Tank

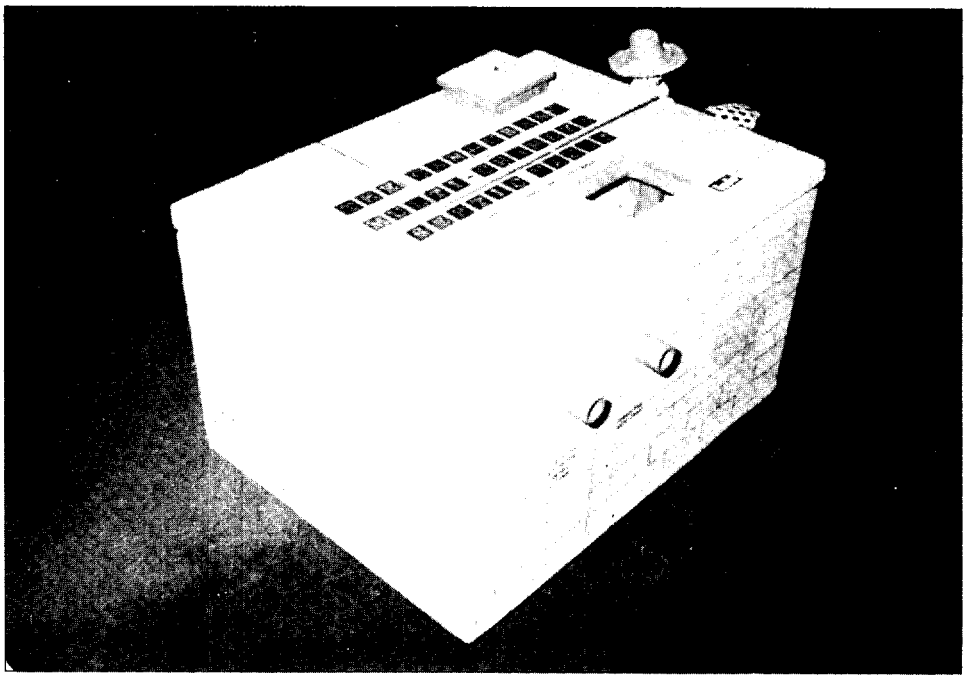
Proper disposal of household or domestic sewage, which is of great importance to the health of people in areas where public sewers are not available, is enhanced by the use of the FRENTS double-line septic tank. Because today's modern detergents, bleaches and lyes can kill the active bacteria that septic tanks need to work efficiently, the FRENTS double-line septic tank segregates the processing of the water closet discharge from the detergent-laden discharges of the kitchen sink, shower, lavatory and laundry tub. This (1) renders thorough digestion of all wastes; (2) conserves the capacity of the septic tank; and (3) results in the emission of much clearer and less odorous effluent. In practical application, the use of the FRENTS septic tank contributes to much-needed economies in sewage treatment through less frequent cleaning of the septic tank and results in the possibility of draining more efficiently digested effluent directly into street gutters instead of through costly underground pipes. (See Fig. 3.)

Double Electric Circuits

Starting from the FRENTS House Model 80 up to the House Model 115, double electrical circuits are standard installations. Twin safety switches and two independent wiring networks comprise this FRENTS system. The twin-circuit method has been adopted so that in case of electrical trouble inside the house, the problem can be isolated and the rest of the house can stay lighted while repairs are being undertaken.

Reinforced Concrete Floor Beams

Because of the diversity and potential instability of our soils from region to region — soils that possibly heave, shrink and swell with the seasons — it becomes necessary to design a floor slab that can adequately support a house over uneven ground pressures. Such a strong but economical slab can be produced with the use of stiffeners in the form of reinforced concrete floor beams. This system was developed by Consulting Engineer Donald Kirk and the local FHA office in the Fort Worth, Texas area. The floor beams are integrated into the continuous wall footing of the FRENTS house and give the slab a rigid waffle structure. Twelve-mm deformed steel bars are used as reinforcement for the floor beams. Stirrups, as experience shows, are not necessary and, therefore, not used.



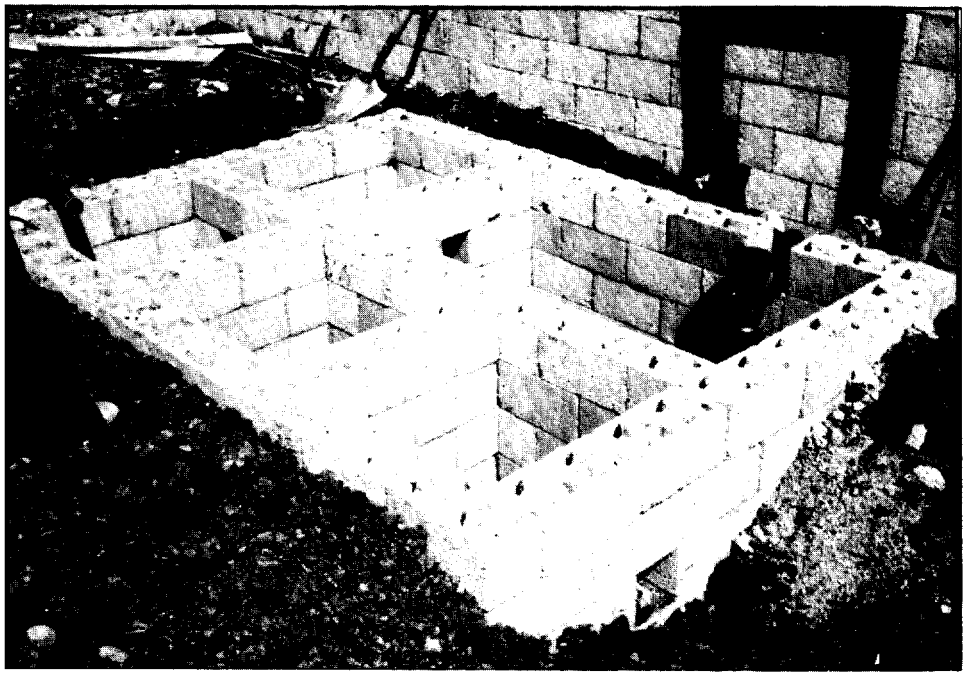


Fig. 3. The patented double-line septic tank.

Fig. 4. Construction of the Frents Roof.

Continuous Vertical Steel Reinforcements

An unusual system of reinforcing FRENTS houses has been evolved to produce a house that is resistant to typhoons and earthquakes. Continuous deformed bars, which offer maximum bonding with cement mortar, start from the wall footings and end at the wood plates above the masonry walls. This differs greatly from the common way of constructing hollow block walls. Under the ordinary method, plain bars cut into several sections are used. As the wall goes up, the sections are spliced together with G.I. wire and covered with cement mortar. By any reckoning, this ordinary practice cannot compare in strength with the continuous reinforcement method used in FRENTS houses. Each vertical steel reinforcement is anchored in place by end-bending and nailing-down over the wood plate. This serves to lock in place all the interlocking hollow blocks comprising the wall below. It also provides anchorage for all roof trusses which are securely nailed with the use of wood cleats to the aforementioned wood plate above the walls. The net result of this system is that the roof is secured to the walls which, in turn, are anchored to the foundations. This provides for an integrated and uninterrupted structural connection between the roof, the wall and the foundations. In theoretical terms, this significantly enhances the structural soundness and disaster-resistance of the dwelling.

Wood Plate Above Masonry Walls

The 3"x4" wood plate specified for installation above all masonry walls in the FRENTS house is an important component of the FRENTS technology. It serves a multi-functional role: (1) to distribute the concentrated loads from the roof trusses along the masonry walls without obstructing the unfilled hollow cores of the interlocking hollow blocks below it; (2) as a plate on which the roof trusses can be firmly anchored with the use of 2"x2" anchor cleats; and (3) to hold the hollow blocks that compose the wall below it in compression and thereby resist uplift.

Hip-type Truss Roof

Truss roofs are generally specified for FRENTS houses. This kind of roof allows the homeowner the flexibility to push walls around without affecting any structural part of the house. FRENTS houses use only the hip roof or *cuatro-aguas* as it is locally called. This type possesses better aerodynamic properties against strong winds and typhoons. Many homebuyers also find this roof design more pleasing and distinguished in appearance. (See Fig. 4.)

Trusses for the Roof

Probably the most economical wood truss is the "W" truss that was designed, thoroughly tested and introduced in 1955 by Purdue University and the University of Illinois' Small Homes Council. It is light and functional and provides a very

strong but economical truss for small houses. Further tests by Cornell University in 1956 showed that the "W" roof truss is good enough to support twice the maximum load requirements for which it was designed. The simplicity of the truss construction allows the truss to be easily mass-produced on-site. The use of the "W" truss in FRENTS houses has greatly simplified roof construction and has served to cut costs dramatically. Where before, in most local house designs, the cost of the roof structure constituted from 30 to 40 per cent of the cost of the entire house, the cost of FRENTS roofs using the "W" truss runs only 20 to 25 per cent of the total house cost. The lightness of the "W" truss system also helps considerably during earthquakes as the destructive moment due to the roof weight is much less than in heavier conventional roofing. The "W" roof trusses, coupled with the butt-joined purlins toe-nailed to each truss, produce a most economical and practical roof that can withstand the stresses from typhoons and earthquakes.

Minimal Use of Critical Materials

At a time when the construction industry is plagued by a highly unstable supply of conventional building materials such as galvanized iron roofing sheets, steel, cement and, especially, lumber, it becomes increasingly necessary to rationalize and orient construction technology to more prudent utilization of such resources. The FRENTS housing technology is oriented toward such economical utilization of critical construction materials. The system imposes disciplined material usage and control to maximize utilization and minimize wastage. The resulting construction is simple, structurally sound and economical.

Ordinary Sand and Gravel

One of the most interesting aspects of the FRENTS technology is its bold and exploitative use of clean ordinary river sand and gravel for all concreting works. This accounts for some of the economy achieved in the system. Although nowhere in the house is expensive crushed gravel or sand used, the resulting concrete works made with these less expensive more readily available materials are comparable to those made with plant-processed aggregates. Natural river sand and gravel abound in the country and are easily available almost everywhere while plant-processed aggregates are not. Such aggregates are available only in the vicinity of rock-crushing plants that are few and far between in the Philippines.

Rough Lumber

In the fabrication of the FRENTS roof and interior partitions, only rough lumber is used for several very important reasons, namely: (1) cross-sectional dimensions nearer to specifications are ensured for the designed structural strength of the roof frame; (2) rough lumber has much better oil-retaining capability than lumber planed smooth on all four sides; and (3) rough lumber is cheaper than dressed lumber.

Non-Metallic Sheathed Electric Cable

Another unconventional feature of the FRENTS house is the non-metallic sheathed electric cable used for its electrical system. In this cable, two insulated conductors are enclosed alongside each other inside a tough cover made of polyvinyl chloride (PVC) compound. The cable is fastened to the building with special staples at specified intervals. Local experience with PDX wire, as this cable is called, shows that it is safe, reliable and easy to install. The choice of the PDX wire for use in FRENTS houses was determined by the fact that PDX was designed for application in exposed or concealed works in air voids in concrete hollow blocks or tile walls not exposed to excessive moisture or dampness. It is, therefore, ideal for the FRENTS interlocking hollow block because, in actual construction, the cores of the IHB are not filled with mortar. Thus, the PDX can go inside the inner row of hollow cores of the IHB without the need for any plastic conduit which, in the ordinary types of wiring, would be critically necessary.

Modern Ceramic Tiles

On kitchen countertops and splashbacks as well as bathrooms, modern 1"x1" mosaic ceramic tiles, glazed or unglazed, are used. This provides a touch of warm color that enhances the interior character of these utilitarian areas. Mosaic tiles also offer brighter beauty, longer wear and a lifetime of cleaning convenience. While other tile sizes ranging from 2"x 2" up to 4"x 4" can also be used, experience has demonstrated that the smaller tile (1"x1") is the most stable and durable. This is because small ceramic pieces are less vulnerable to breakage by virtue of their thorough embedment in cement mortar. Ceramic tiles offer a tough surface that resists mars and scratches, acids, alkalis and other similar corrosive chemicals.

Polyethylene Plumbing Pipes

Hygienic, non-toxic and non-corroding polyethylene (PE) pipes are specified for plumbing use in all FRENTS houses in combination with some G.I. components. Made from virgin polyethylene resin, these offer the superior features of resistance to most common organic and inorganic chemicals plus durability, flexibility, versatility, good flow capacity and reasonable price. Fusion, which produces very strong connections, is used in fabricating PE-to-PE plumbing joints while pipe treading is employed in effecting connections between the polyethylene and G.I. components of the FRENTS house plumbing system. As stated earlier, the PE pipes can be run almost totally within the hollow cores of the interlocking hollow blocks.

Plywood or Lawanit Ceiling Boards

For the ceiling of all FRENTS houses, plywood or lawanit boards are specified. Experience has shown that, properly applied, these boards are durable and less

prone to termite attacks and damage from occasional wetting. They are also attractive, easy to paint and reasonably-priced.

"Placarol" Doors

The relatively thin and lightweight but strong and non-warping "Nalko-Placarol" doors have been selected for use in every FRENTS house. The unique construction of these doors using a large number of close-packed, non-warping, uncrushable wooden spirals glued to the Lawanit doorskins with high-quality resin adhesive offers the advantages of a modern and slim appearance, strength and stability, lightness in weight (which minimizes the load on door hinges) and low cost.

Aluminum Jalousies

From among the various window types commercially available for low-cost housing, the aluminum jalousie window was selected for all FRENTS house models. The reasons for the choice are that it is (1) reasonably priced; (2) non-deteriorating; (3) attractive; (4) functional; and (5) easy to clean, maintain and repair.

Bathroom Locks

In the FRENTS house, bathroom door-locking mechanisms are chosen not for security but simply to provide privacy. Thus, the selected door locking devices are not the usual locksets with keys and door knobs but only modern barrel bolts and door pulls. These make it easy to force open a bathroom door during emergencies especially where there are children or aged members in the household.

Mechanical Mixing of Concrete

Proper mixing is one of the major factors that determine the strength of concrete. Under the FRENTS technology, only mechanical mixing of concrete is allowed. To ensure that the prescribed length of mixing time is achieved, a visual timing aid is employed. This timing aid is in the form of an hour-glass that is calibrated for five minutes. This eliminates the use of human memory or mental effort as when a watch or clock is utilized since all that the mixer operator has to do is watch the hour-glass timer until all the sand has run from its upper compartment to the lower one.

Toe-Nailing Technique

Since a significant portion of a low-cost house is built of wood and since common wire nails are still the popular fasteners in wood construction, it is important that correct nailing techniques are applied. It is true that the strength of any wooden structure depends mainly on how well the parts are fastened together. Nailing, therefore, should be considered as a major factor in producing strong houses. In the FRENTS house, the roof of which is fabricated along the same principle of aircraft construction, toe-nailing is extensively used. Toe-nailing is defined for the construction industry as driving a nail at a slant with the initial surface in order to permit it to penetrate into a second member. The roof purlins in the FRENTS house are not continuous as in most Philippine houses. Rather, they extend only from one truss to the next and are fastened to the trusses by toe-nailing. This produces a rigid and strong roof frame that is capable of resisting stresses from typhoons and earthquakes.

Used Oil Wood Treatment

One practical money-saving method used in the FRENTS technique of homebuilding is the treatment of all lumber components with discarded motor oil from vehicles. This method helps conserve import dollars for foreign wood preservatives and provides a valuable way of recycling used oil, in the absence of commercial used-oil recycling programs. This waste oil has been demonstrated to be a good, low-priced wood preservative with an efficacy reportedly of around five years. Another favorable feature of used motor oil as a wood preservative is its relative non-toxicity to human beings as compared to certain dangerous chemicals commercially available for wood preserving purposes. Used motor oil also is easily available in most parts of the country while imported wood preservatives are not as easily sourced.

Recycling Construction Scraps

An activity that needs to be pursued most seriously and vigorously in the Philippine housing program is the recycling of construction scraps. In the face of dwindling construction materials, every scrap at each jobsite should be effectively utilized to as large an extent as possible. The FRENTS technology even programs the use of scraps from the G.I. roofing sheets, which are carefully cut and fabricated into roofing straps or *lenguetas*. Lumber scraps are also converted into truss anchor cleats, thereby leaving very little, if any, construction waste at the site. The really small pieces of lumber scraps still left are then used as firewood for heating soldering irons during roof installation. The efficiency of a builder's construction technique can truly be gauged by the amount of construction waste left over after completion of the construction work. The less waste there is, the more efficient the builder's technique is. The FRENTS technique leaves practically no waste at the site.

Conclusion

With all its modern, money-saving and material-conserving technological features, the FRENTS house consistently sells at lower prices than comparable construction. It is a house that clearly demonstrates that more can be done with less if people will search with determination. An internationally-accepted mass housing technique for lowering the initial cost of home ownership is to provide a core house that allows for self-help owner participation in its completion. Accordingly, only a habitable basic core house is offered minus all the non-essentials which the homebuyer himself can add later as his finances allow.

The FRENTS house is characterized by the core-house approach. Because of its low purchase price, a homebuyer is able to introduce subsequent improvements, especially those of the do-it-yourself kind, that reflect his personal taste in a home. He is able to undertake home improvement projects that customize the dwelling according to personal preferences whenever he is able to finance them. The end result is a low-cost dwelling that easily meets the basic levels of acceptability with regard to economy, comfort, durability and maintainability.

CEMWOOD BOARD: PROSPECTS FOR LOW-COST HOUSING APPLICATIONS

Wilfrido J. Santiano
President
Cemwood International Industries, Inc.

I. General Information

Wood Wool Cement Board is a wall board material that was developed around 40 years ago in Europe. It has been extensively developed and used as a building material all over Europe, the United States, and Japan. In Germany, buildings built 40 years ago are still in use up to the present.

Composition

The local version of the technology was developed by the Forest Products Research and Development Institute (FPRDI) at Los Banos, with the assistance of the Department of Science and Technology (DOST) who also assisted in testing the material. The resulting material is currently being produced commercially by Cemwood International Industries, Inc. under the product name, "Cemwood." Cemwood boards are mainly composed of cement and shredded wood (wood wool), although recently, shredded rattan has also been experimented on as an alternative material to shredded wood. Other chemical additives are also incorporated to enhance the various working characteristics of the material, as well as its overall quality.

Properties

1. Water/Weather Resistant:

   Cemwood has been proven to be stable even when soaked in water for a long period of time. Wood wool cement boards have also been proven to withstand the temperate climates of Japan and Germany as well as the tropical weather of Malaysia.

2. Lightweight:

   Due to the large number of air cells and excelsior (wood wool), the weight of one cu ft of Cemwood is only approximately 25 lb, as against

105 lb for ordinary brickwork and 150 lb for conventional reinforced concrete.

3. Strength:

   Although light in weight, Cemwood boards have relatively high strength in bending due to the interlocking and tensile properties of the wood fibers. The cement, on the other hand, provides the compressive strength of the material while functioning as the bonding material or matrix.

4. Thermal Insulation:

   The large number of air cells in Cemwood provides good thermal insulation characteristics to the material. Initial data show that a 2-inch thick Cemwood panel has a comparative insulating value to an approximately 14-inch thick concrete slab.

5. Sound Insulation:

   Cemwood also has a high degree of resistance to sound transmission. As such it is well suited for applications in houses, theaters, schools, hospitals, offices and other facilities where reduced sound transmission and noise mitigation is a requirement.

6. Fire Resistance:

   Cemwood does not support combustion and existing test data on the material shows good fire resistance properties. (See Note No. 1.)

7. Fungal Resistance:

   Long term tests have shown that the board will not support fungal growth.

8. Termite and Vermin Resistance: (See Note No. 2.)

   The chemical composition of the bonding agent makes Cemwood resistant to termite attacks. It is also avoided by gnawing vermin such as rats and cockroaches. It has been found unaffected after imbedding the material in termite hills for several months while ordinary hard and soft woods were completely devoured.

9. Dimensional Stability:

   There is a low risk of shrinkage thus also reducing the risk of cracks in the finishing material.

10. Easy to Use:

Cemwood can be cut with ordinary saws; are paintable, plasterable with cement and other materials; and can be attached/connected by nails, screws, glues or cement.

Applications

1. Ceilings: can be used where sound absorptive characteristics are required. Also, where high quality finishes are required.

2. Outside wall and wallboards: 2-inch thick Cemwood can replace hollow blocks for walling and can achieve equal strength after cement-plastering. Its thermal insulating properties provide cooler houses/buildings.

3. Dividing/partition walls: Thinner slabs are available for partition walls which can be plastered or directly painted. Sound absorption properties provide for quieter rooms. It is also fire-resistant.

4. Doors: Good applicability for doors. Does not deteriorate even when constantly wet.

5. Kitchen counters/cabinets: Durable and decorative. Since Cemwood can be plastered and tiled-over, it makes excellent substitute for cement and hollow blocks for kitchen tops.

6. Flooring: Cemwood has been used as flooring of some houses instead of T & G lumber for a very quiet second floor to first floor effect. Its fire-resistant and rot-resistant properties increase the durability and market value of construction when applied.

7. Eaves: Cemwood prevents the occurrence of rapidly deteriorating, distorting and peeling eaves.

8. Fascia boards: Since it is lightweight, rot-resistant, decorative, and weather-resistant, Cemwood makes an excellent fascia board instead of lumber, pre-cast concrete or G.I. sheets.

II. Product Range and Specifications

As per tests conducted by Forest Products Research & Development Institute, U.P. Los Baños:

Properties					
Density	Kg./cu m				400-550
Modulus of Elasticity	x10 MPa				0.58
Thermal Conductivity	m^2.h.oC/kcal l				0.16-0.55
Thickness Swelling (immersed in H20)	%				1.23-1.44
Fire Resistance: (see note #1)					
Average results obtained on the fire tube test of untreated Cemwood boards, 10mm x 19mm x 1020mm					
Original specimen weight	(g)				117.87
Weight loss after removal of burner	(g)				10.67
Final weight loss	%				10.67
Duration of flame after removal of burner,	min-sec				0
Duration of glow after flaming has ceased,	min-sec				4 - 5
Maximum temperature,	°C				235
Maximum rate of weight loss per minute					9.41
Dimensional Tolerance:					
Length	mm				±4
Width	mm				±4
Thickness, above 1/2-inch	mm				±1.3
Edge Squareness	mm				±1.0
Thickness and Weight:					
Thickness	inch	1/2	3/4	1	2
Weight	kg.	8.8	12.5	16.47	29
Standard Board Size: 2 ft x 8 ft					
Sound Absorption Rate					0.5 - 0.9
Specific Gravity					0.43 - 0.50

Comparative Strength

Wood Specie	Modulus of Rupture MPa
Mixed wood species	14.95
Giant Ipil-Ipil	13.65
Kaatoan Dangkal	12.50
Moluccan sau	10.01
Yemane	13.75

Comparative Properties of Cemwood with Foreign Wood Wool Cement Board Standard

	Modulus of Elasti-city	Compression Parallel to Grain, MPa	Compression Perpendicu-lar to Grain MPa	Modulus of Rupture, MPa	Specific Gravity
Cemwood	0.58	0.54	0.54	1.85	0.49
German Standard	-	0.15	0.15	0.50	-
Japanese Standard	-	-	-	1.50	-

At 10% Crushing

Amount of Weight Loss (gm) from Cemwood Exposed to Subterranean Termites

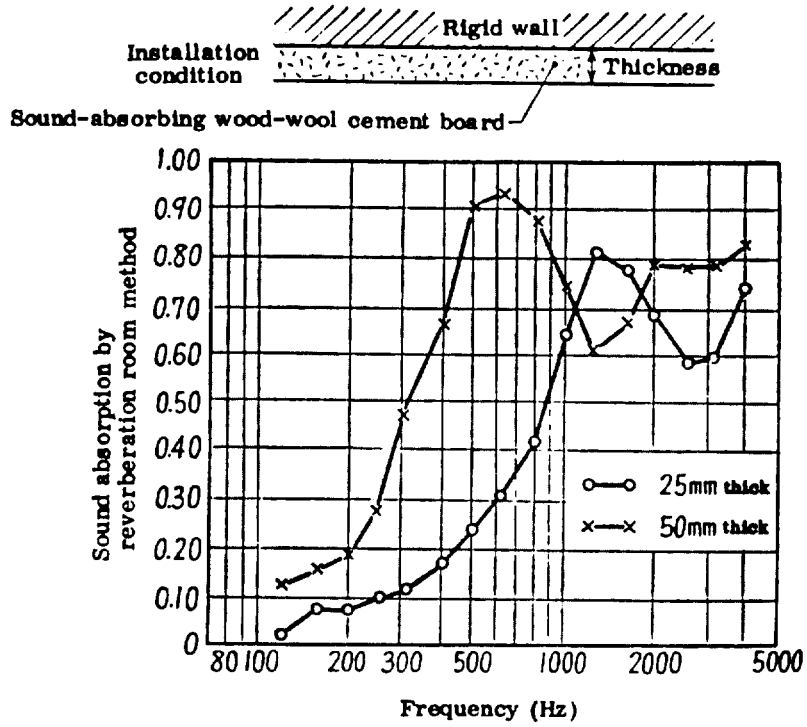
Specimen No.	Initial Weight (gm)	Final Weight (gm)	Difference (gm)
1	9.03	9.02	0.01
2	9.88	9.83	0.05
3	9.52	9.47	0.05
4	9.97	9.97	0
5	9.39	9.29	0.10
6	9.88	9.85	0.03
7	11.85	11.56	0.29
8	12.29	12.28	0.01
9	11.46	11.35	0.11
10	10.19	10.15	0.04
Total	103.46	102.77	0.69
Mean	10.35	10.23	0.07

Amount of Weight Loss (gm) from Cemwood Exposed to Dry Wood Termites

Specimen No.	Initial Weight (gm)	Final Weight (gm)	Difference (gm)
11	9.65	9.64	0.01
12	11.34	11.33	0.01
13	11.22	11.20	0.02
14	9.03	9.00	0.03
15	9.94	9.94	0.
16	9.85	9.85	0.
17	10.01	10.00	0.01
18	10.54	10.49	0.05
19	10.81	10.79	0.02
20	10.67	10.64	0.03
Total	103.06	102.88	0.18
Mean	10.31	10.29	0.02

Reference Figures Sound Absorption Obtained by Reverberation Room Method for Sound-Absorbing Wood-Wool Cement Boards

1. Sound-absorbing wood-wool cement boards, 25 mm thick and 50 mm thick



Testing site: Acoustics Laboratory, Construction Department
Faculty of Science and Technology
Nihon University

Dimensional specification:

910 mm x 910 mm x 25 mm, bulk specific gravity 0.50

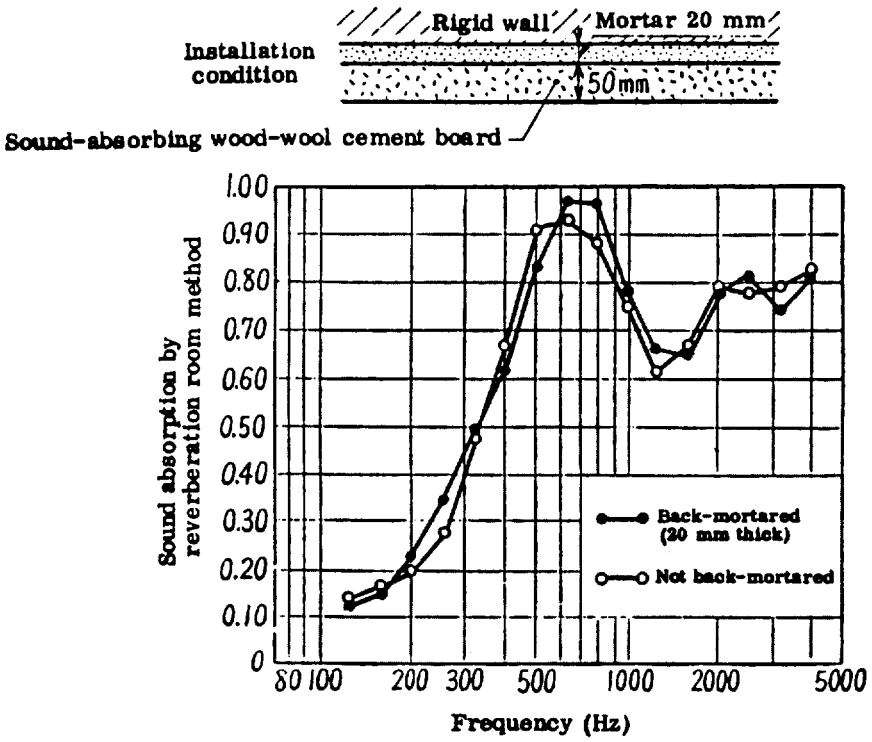
910 mm x 910 mm x 50 mm, bulk specific gravity 0.43

Installation condition:

No air layer

Testing date: 1967-02-24

2. Sound-absorbing wood-wool cement boards, 50 mm thick



Testing site: Acoustics Laboratory, Construction Department
Faculty of Science and Technology
Nihon University

Dimensional specification:

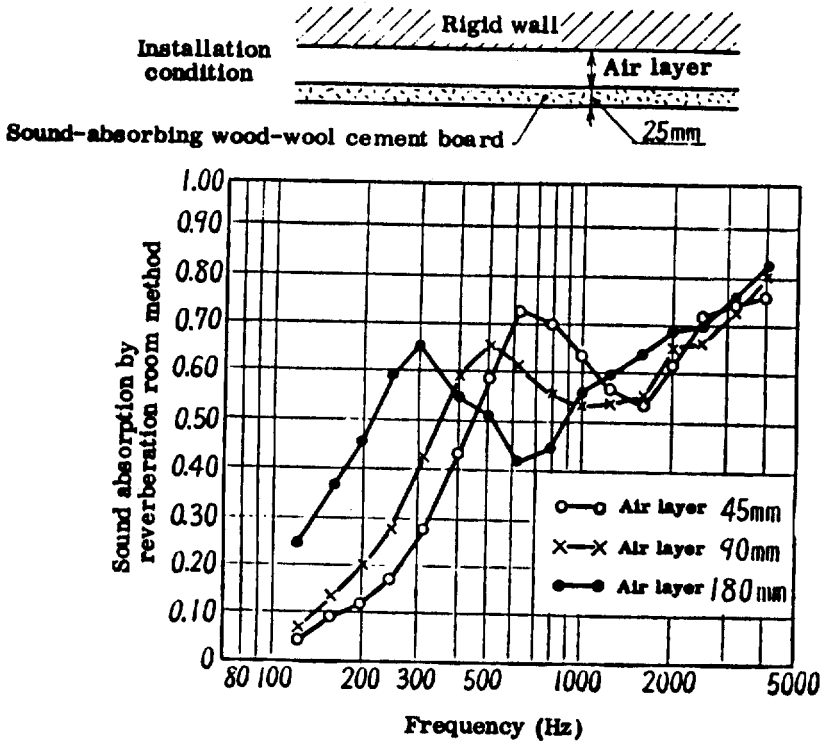
910 mm x 910 mm x 50 mm, bulk specific gravity 0.43

Installation condition:

No air layer; back-mortared 20 mm thick and not mortared

Testing date: 1967-03-30

3. Sound-absorbing wood-wool cement boards, 25 mm thick



Testing site: Acoustics Laboratory, Construction Deparment
Faculty of Science and Technology
Nihon University

Dimensional specification:

910 mm x 910 mm x 25 mm, bulk specific gravity 0.50

Installation condition:

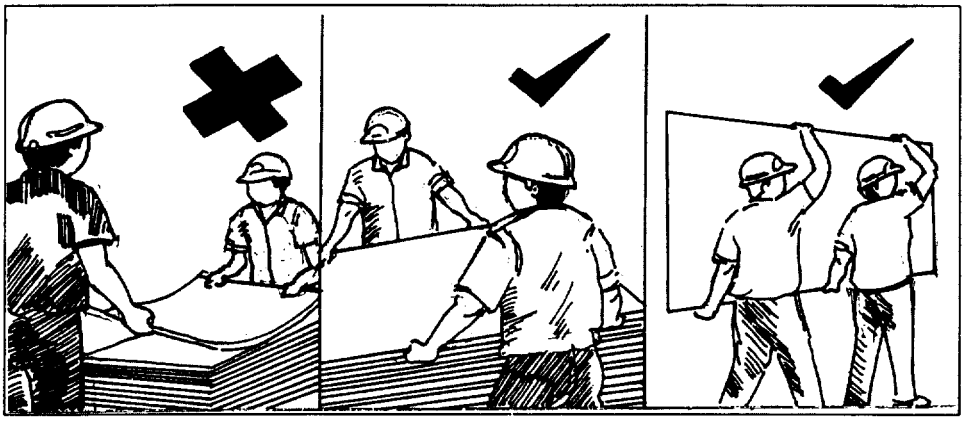
Air layers 45 mm, 90 mm and 180 mm

Testing date: 1967-02-90

III. Storage and Handling

Handling

Avoid lifting the Cemwood from both ends of short edge. To prevent excessive flexing of the board, the board should be lifted by sliding sideways from the stack and lifting on the edge.



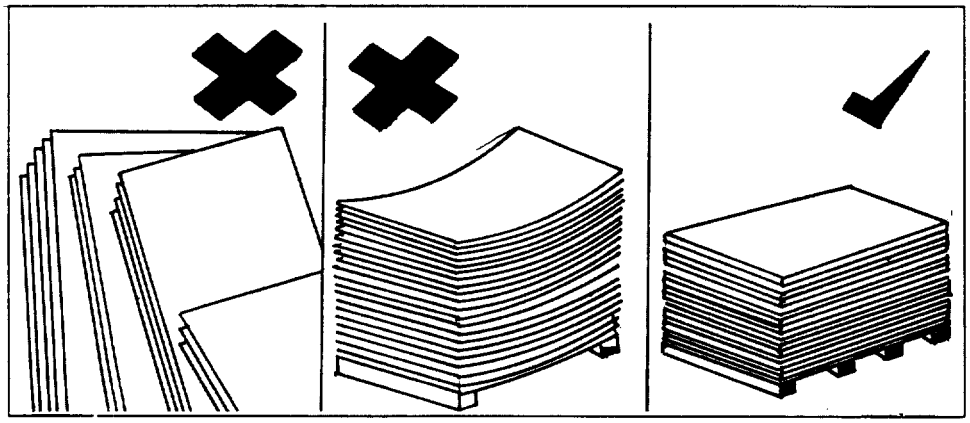
Transportation

The board should be protected against moisture during transportation. This is done by covering them with tarpaulin or canvas sheet.

Storage

Individual sheets should not be transported or stored upright.

The boards should be stored by laying them horizontally on pallets or beams with sufficient supports to avoid sagging.



Handling and Storing of Wood Wool Cement Boards

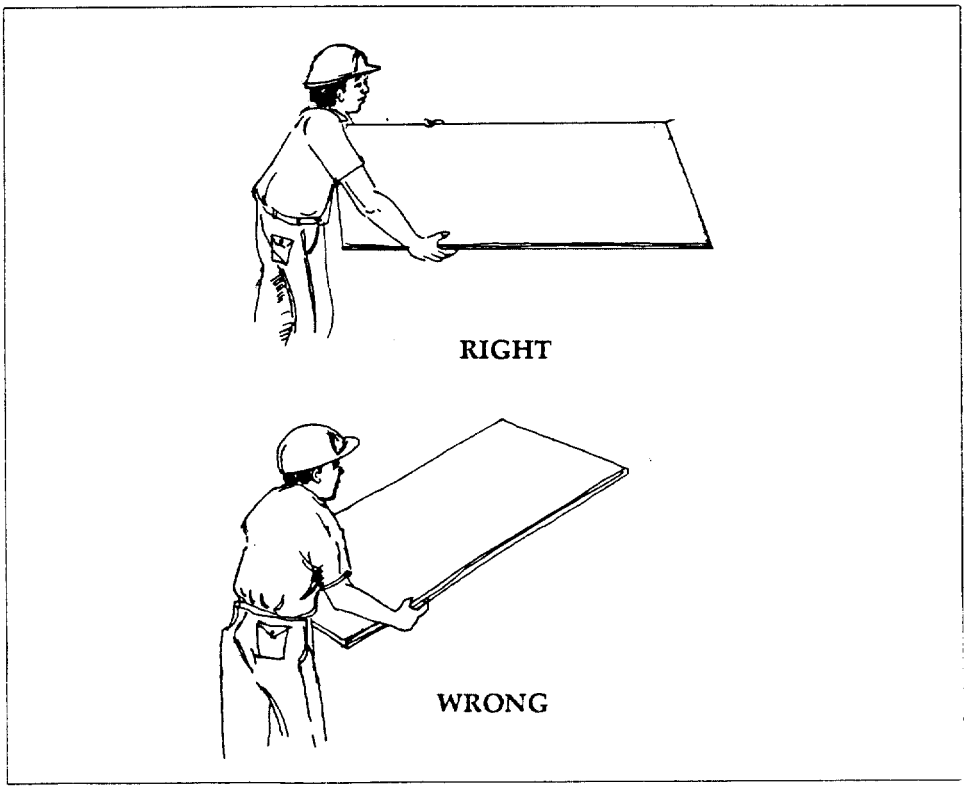
The wood-wool boards which will be used for housing construction should be stacked horizontally in an adequately-shaded area.

If the components of a house have been cut in the factory, they should be stacked according to type of components, and should not be piled together.

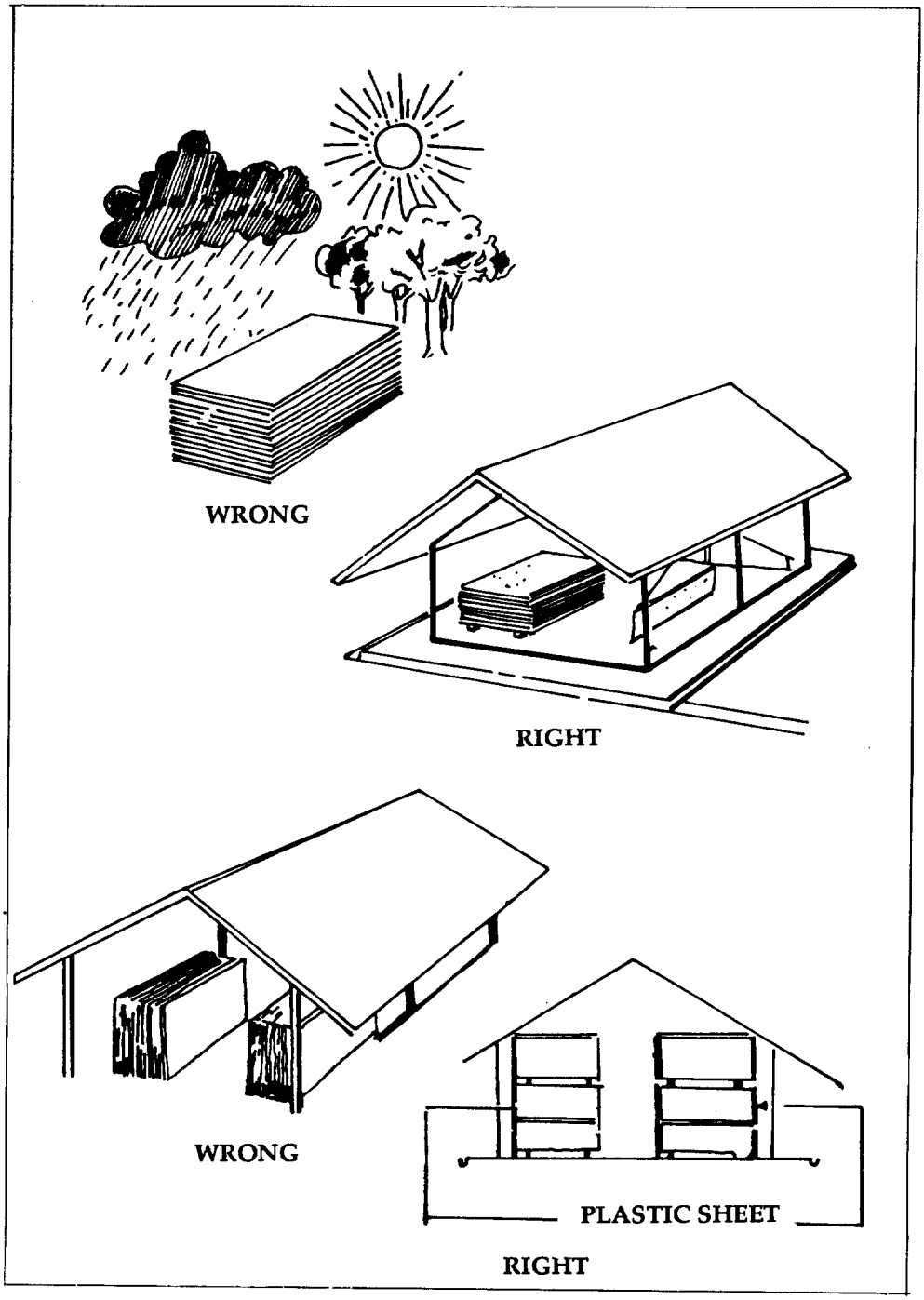
It is also advisable to place the boards on the pallet above a dry and level surface. Plastic sheets should also be used if the wood wool cement boards are stored in the open shed.

The pallets should always be stacked on a firm, level area to avoid twisting or warping the boards. Pallets should not be stacked more than five feet high. For manual stacking, pallets should be placed between each lift of boards and should be aligned with the bearers supporting the previous lift to prevent warping or twisting.

Individual boards should be handled and stacked carefully to avoid damage to the edges and corners. Boards should be lifted from the stack by sliding sideways and lifting by the long edges with the arms spread apart to give even support and to prevent excessive flexing of the boards.



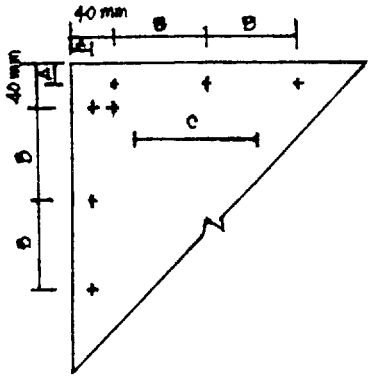
Handling of Boards



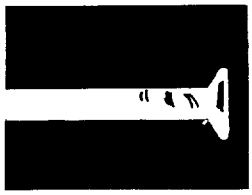
Storing of Boards

IV. Fixing and Mounting

Cemwood can be mounted by using screws, nails staples or adhesives. The recommended fixing centers are as shown below.

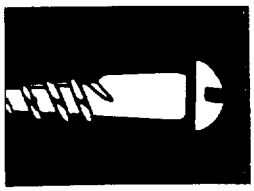


Board Thickness	Recommended Distance		
	A Edge Distance	B Edge Spacing	C Intermediate
1/2"	20 mm	200-300 mm	600-700 mm
3/4" & 1"	20 mm	300-400 mm	600-700 mm
2"	20 mm	400-500 mm	600-700 mm



Nailing:
Length of nail should be approximately 2 to 3 times the thickness of the board.

Stapling:
Cemwood can be fixed to timber frames by using compressed air-driven staples.



Screwing:
The length of the screws should be approximately 2 to 3 times the thickness of the board. Self-drilling, self-embedding head screws can also be used.

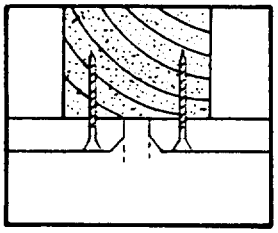
Bonding:
When gluing Cemwood, use only alkali-resistant adhesive. This includes polyurethane or epoxy resin base.

V. Joints

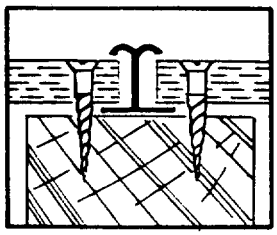
The choice and method of joint details will depend on several factors:

- Application
- Location (internal or external)
- Board thickness
- Surface finishing required

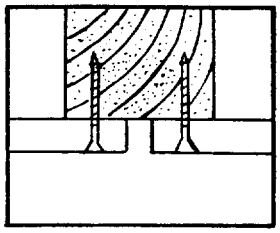
Below are some examples of joint details:



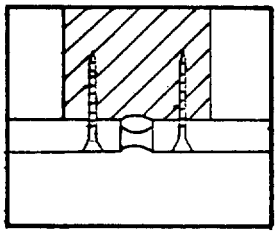
Shadow joint with shaped corner



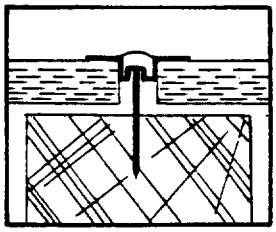
P.V.C. jointing section



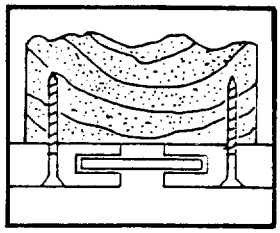
Shadow joint



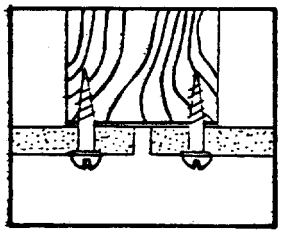
Filling compound



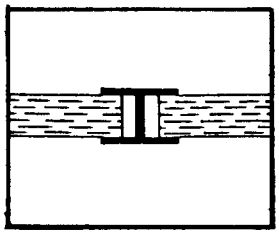
Aluminium cover section with p.v.c. strip finish



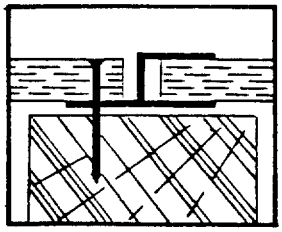
Tongue and groove.



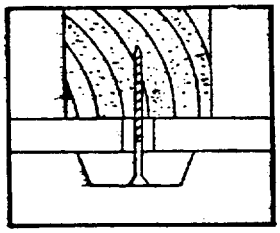
Round head screw with washer



Preformed jointing section

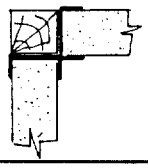
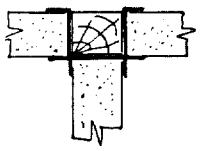
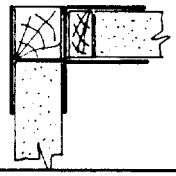
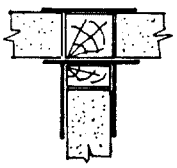
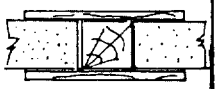
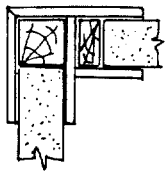
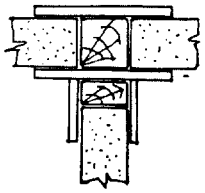


Preformed jointing section



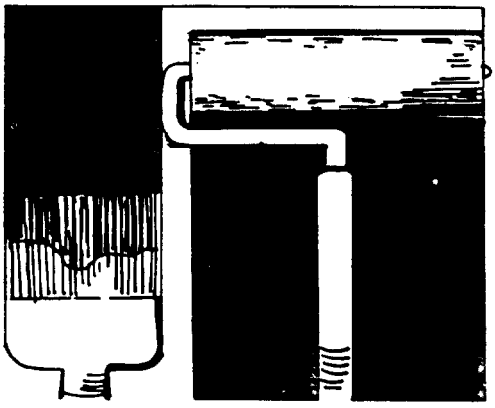
Joint with cap moulding

Examples of joining Cemwood, using wood studs, fabricated G.I. sheet channels, steel and wood plates for a particular house unit.

Type	Line Joint	Corner Joint	Tee Joint	Specifications
				1" x 2" gauge 22 Channel on 2" x 2" wood stud
				4" metal plate (#20) on 2" x 2" wood stud 3" metal plate on 1" x 2" wood stud
				1/2" x 6" wood plate on 2" x 2" wood stud. 1/2" x 2" wood plate on 1" x 2" wood stud

VI. Surface Finishing

Cemwood can be subjected to various types of surface treatment on finishing. However, owing to its alkaline content, it is recommended that the board be primed with an anti-alkali primer, before a finishing coat of paint is applied.



Painting

Cemwood can be coated with a wide range of paint and this includes:

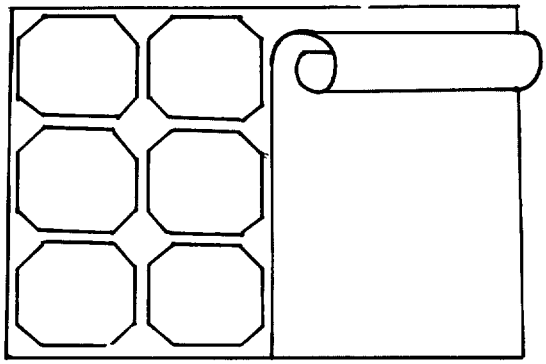
- Emulsion paint
- Gloss paint
- Polyurathane (PU)
- Polyester
- Epoxy

The paints can be applied with roller brushes or spray guns.

Lamination

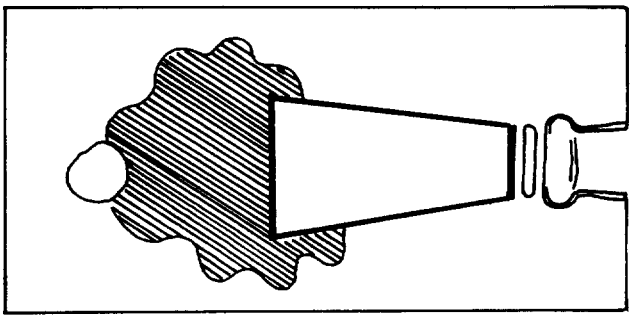
Wall Paper
Cemwood can be decorated with vinyl or conventional wall paper by using appropriate adhesive.

Tiling
Ceramic tiles and mosaics can be bonded to Cemwood using the recommended adhesive.



Filing
Screws and nail holes, damaged surface or uneven joints can be easily remedied with proprietary filler.

Exterior Finishes
Marble chips, pebble stones, cement sand-blasting, *anay* finish, plain cement finish are examples of finishes suitable for application to Cemwood.

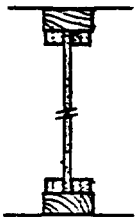


VII. Applications

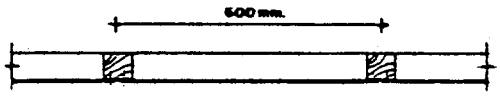
Application	Cemwood Thickness (in.)			
	1/2	3/4	1	2
INTERNAL				
Office partition	✓	✓	✓	
Dry Wall	✓	✓	✓	
Wall Linings	✓			
Ceiling	✓			
Flooring				✓
Duct/Service enclosures	✓	✓		
Toilet cubicles	✓	✓	✓	
Doors	✓	✓	✓	
Kitchen cabinets	✓	✓		
Accoustic panel	✓	✓	✓	✓
EXTERNAL				
Soffits/Eave Lining	✓			
Walls				✓
Wall clading	✓	✓		
Fascias	✓	✓		
Roofing		✓	✓	

Partition

Cemwood is an excellent material for lightweight partition walls in residential, commercial, industrial and public buildings. It is resistant to fire, moisture and termites and has a good sound and thermal insulation. Design flexibility and speed in construction can also be attained with the use of Cemwood.

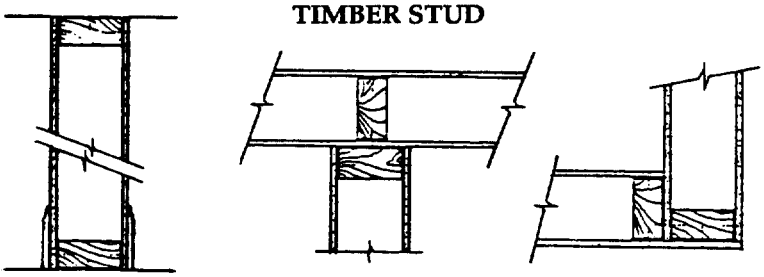


SINGLE SKIN PARTITION

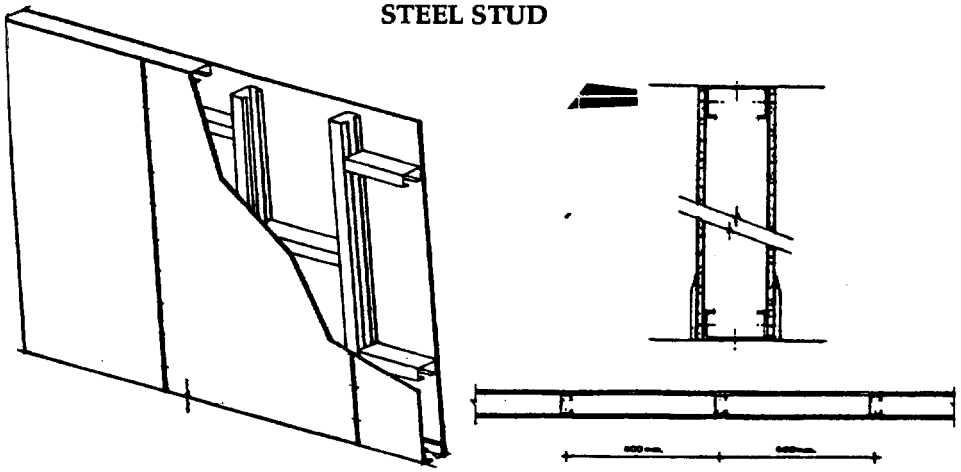


DOUBLE SKIN PARTITIONS

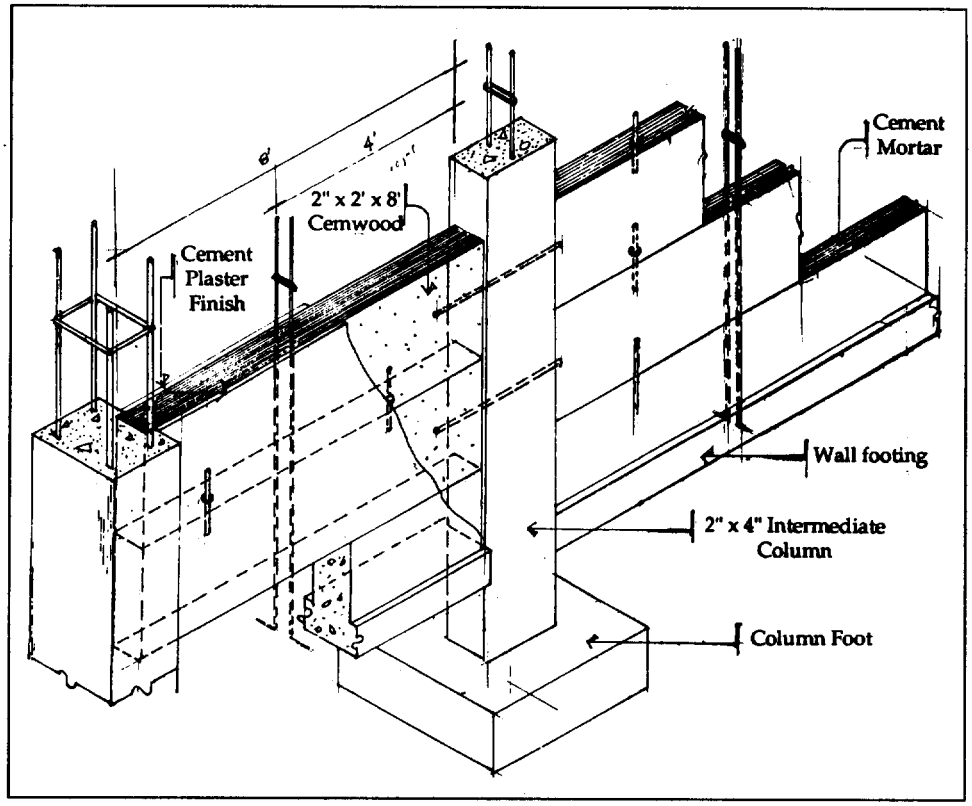
TIMBER STUD



STEEL STUD



External Wall

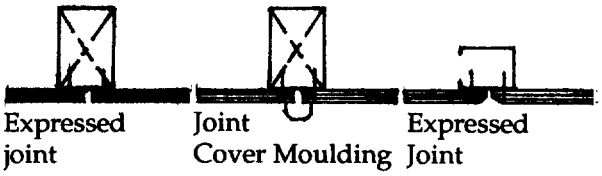


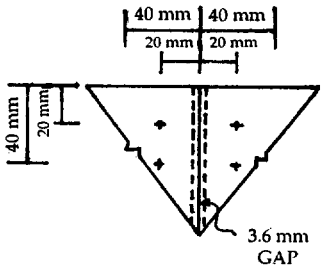
Ceilings

Cemwood owing to its various unique properties is an excellent material for ceiling especially in wet areas or where fire resistance or sound insulation is required.

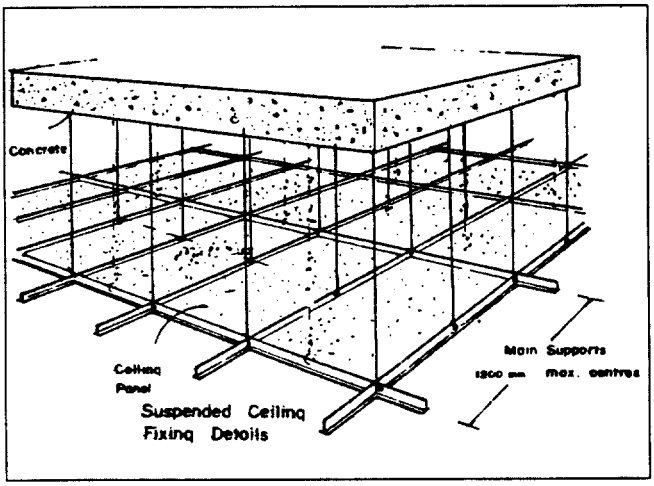
Nailed-on-Ceiling

Cemwood can be fixed directly to timber or steel joist. The joist rafters should be fixed at center not exceeding 600 mm as shown.



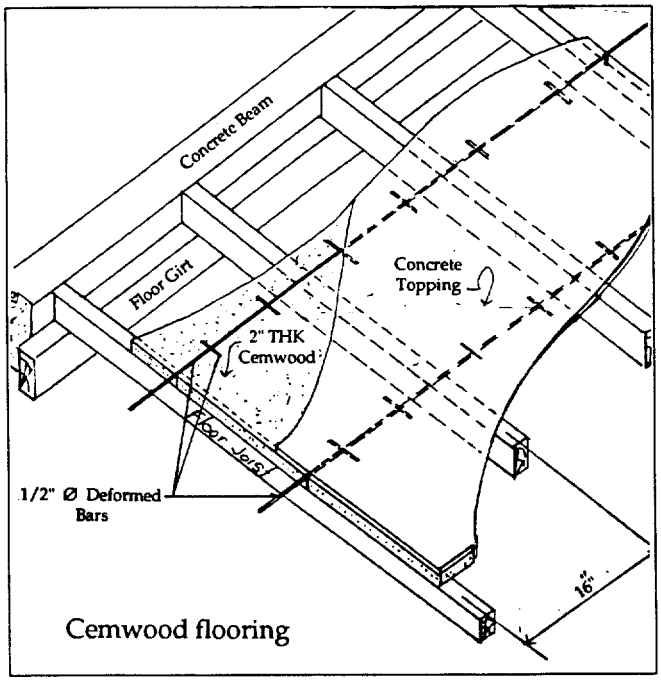


Cemwood can be fixed using galvanized round wire nails or self-drilling, self-embedding head screws. In areas of high humidity, boards primed on both sides are recommended.



T-Bar Ceiling (Suspended Ceiling)

Cut-to-size Cemwood board can be placed directly to suspended aluminum grid. The maximum panel size recommended is m x C of 1/2-inch thickness.



VIII. Prices

The prices of Cemwood are highly competitive with plywood, hollow blocks, mineral boards and fiber boards.

Given the features and properties of Cemwood, together with its prices, its value is excellent.

Standard Sizes	*List Price*	*Some Suggested Uses*
1/2" x 2' x 4'	P46.35/pc.	- ceiling boards
1/2" x 2' x 8'	P90.35/pc.	- eaves - double walls and partitions - doubled walled doors
1" x 2' x 8'	P152.85/pc.	- partition walls - doors - parapets - fencing - dividers - concrete moulds - outside walls
2" x 2' x 8'	P218.70/pc	- outside walls - fence - kitchen tops - parapets - flooring - "cement walls"

Other sizes can be made to order depending on quantity.

Note #1: Tests at FPRDI laboratory show that Cemwood does not support combustion. These results indicate that Cemwood did not burn when subjected to a fire tube test specified by the American Society for Testing and Materials (Designation E69-50). It remained intact after the four-minute standard flame exposure with maximum temperature of 235°C, and even its removal from the fire tube. Only minimal charring occurred. The average duration of glow was four minutes and five seconds and the final weight loss was only 10.67 per cent of initial weight.

Note #2: Tests at FPRDI Laboratory show that Cemwood highly resists termite infestation. The tables indicate that laboratory termites exposure test conducted showed negligible differences between the pre-exposure and the final weights of the specimen, when exposed to subterranean (*microcerotermeaphalus*) respectively. Just because all the termites died after four weeks of exposure, the per cent difference in weight could be attributed to the accidental removal of some particles on the edges of the specimens during handling (i.e. from labelling to the placing of specimens on observation plates).

COMPRESSED EARTH BLOCK: AN ALTERNATIVE BUILDING MATERIAL

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Housing and Construction Consultant

The compressed earth block (CEB) is designed as an alternative material for use in masonry construction as load-bearing walls. The square type CEB can also be utilized for the construction of box-type masonry columns systems. The block itself is simply produced from soil that is pulverized and sheaved dry, mixed with specific proportions of portland cement and then compressed.

The CEB attains its maximum effectivity as a building system rather than as merely a building block since the strength of a building is the result not of the individual blocks but of the structural system as a whole. The comprehensive building system based on compressed earth blocks also utilizes natural fiber such as abaca and portland cement for the production of fiber-cement roofing tiles and treated coconut lumber for the structural framing components of the roof. The system also promotes the use of bamboo for horizontal reinforcement in walls, lintel beams and slabs and continuous steel bars for vertical reinforcement.

Advantages of CEB

CEB is comparative in strength and durability, and competitive in cost with conventional concrete hollow blocks (CHB). Depending on the actual soil conditions, the compressed earth block system has the potential capacity to reduce if not eliminate the need for conventional concrete footings, since the blocks themselves can act as the actual footings. As a whole, the technology itself uses less portland cement for the foundation, the walls and even the floorings.

The usual proportion of portland cement used for CEB is only six per cent depending on the type and quality of soil available for mixing. In effect, this translates to a requirement of one bag of cement per six sq m of a compressed earth block wall, as against one bag of cement per one sq m for a conventional concrete hollow block wall.

As stated earlier, footings are non-conventional, with a very low requirement for cement. This cement-saving feature applies from the foundation (which is generally characterized by a cyclopean-type aggregate mixture*) to the walls, mortars and flooring. CEB can be classified as an artificial cement stone in itself.

**A style of stone construction marked typically by large irregular blocks without mortar.*

In the past, builders utilized boulders and large stones as foundations, without cement. In earth construction there is, theoretically, the possibility of prectically eliminating the need for cement. Compressed earth blocks can in fact be produced from a mixture of clay and water without cement. In contrast, conventional construction relies significantly on the use of portland cement. Thus, shortages and instability in the supply of cement takes a heavy toll on the construction industry that relies heavily on conventional building techniques.

The compressed earth block system easily integrates its own reinforced concrete roof and lintel beams. The nominal spacing between blocks and the standard mortar joints (ranging from 1.5 to 2.0 cm) is sufficient to allow for the continuous penetration of steel reinforcing bars, thus requiring no additional holes for installing these reinforcements.

The system is mainly intended to be used for housing the very poor since it lends itself quite easily to community-based production and reduces the reliance on commercially-supplied cement products. As such, the system has not yet been tested in the commercial market. Limited laboratory tests, however, show that it can sustain a maximum bending load of 30 kg. Though compressive strength tests have not been undertaken locally, tests done in France have resulted in comparable compressive strenths to concrete hollow blocks.

Other possible uses of CEB are presently being explored, e.g., as partition walls and flooring, among others. It is potentially marketable in more urbanized areas, where aggregates are getting more expensive and scarce.

Origin of the Technology

Though only two years old in the Philippines, the CEB technology is a traditional building technology in many parts of Europe and even Africa. It is a result of a 40-year research in earth construction technology by the International Research for Earth Construction program of the Grenoble School of Architecture in France. With the initiative of the Mindanao-Sulu Social Action Secretariat (MISAS), which is affiliated with the Catholic Bishops Conference of the Philippines (CBCP), four Filipino engineers, including the author of this paper, have undergone intensive training on the technology. The technology first saw application in Digos, Davao del Sur and from then on other architects from Visayas and Mindanao have come forward to be trained.

CEB is produced by a machine called the GEO-50, a manually- operated double compression machine designed in Europe. After the soil is processed by pulverizing and sheaving dry through static compression, the soil is mixed with portland cement at a proportion of approximately six to eight per cent by weight. The silica or sand contained in the soil reacts with cement in the presence of water. It is then hardened by curing at room temperature. A solid compressed earth block is then obtained through stabilization and compression. The cement stabilization is done with the use of ordinary portland cement. The proportion of soil, cement and water

is the main criteria of defining soil ratio which varies between 1:10 and 1:17. The average compressive strength, at 15 to 28 curing days, varies from 40 to 70 kg per sq cm. A full-size block weighs between seven to nine kg.

Earth and soil are basically the same. During the past regime, housing projects of the Ministry of Human Settlements used soil or surface soil. It was learned, however, that top soil is a poor material for compressed earth blocks because it contains organic substances attractive to termites. Soil block will not last long if top soil is used.

As a whole, the technology is still in its infancy here in the Philippines. There is an obvious advantage traceable to its reduced reliance on conventional building materials and its potential for community-based production and appropriate levels of technology. The simple machines used to fabricate CEBs, although designed in Europe, can just as easily be fabricated locally. Although the basic material is a simple 4" x 4" x 8" square block, other configurations and designs are possible. In the light of these basic characteristics, compressed earth technology has an excellent potential for utilization in the context of low-income housing.

E. PLANNING LOW-INCOME HOUSING SUBDIVISIONS

LIVELIHOOD IMPERATIVES AND SOCIAL CONCERNS IN THE PLANNING OF LOW-INCOME HOUSING

Arch. Danilo A. Silvestre
Principal
D. A. Silvestre & Associates

"Low-cost" or "Low-income"

It is interesting to note that in current contexts the terms low-cost housing and low-income housing are becoming less and less synonymous and thus not as interchangeable as they once were. Though the term "low-income housing is probably just as valid as ever, the prevalent situations are probably more aptly described by the term "no-income housing." In view of the current accelerated inflationary trends in the costs of construction materials, and the soaring land prices brought about by a highly speculative real estate market, the term low-cost housing becomes increasingly withdrawn from reality. On a simplified per-square-meter estimate of costs, it is not surprising to hear estimates of P3,000 to 4,000 per square meter for low-income housing. Neither is it unusual to hear market values for undeveloped urban land in Metro Manila starting at lows of around P1,500 per sq m and far surpassing even this benchmark for sites within the city center. As of the last quarter of 1992, developed land costs start at lows of around P1,800 per sq m. At these cost levels housing remains affordable to a rapidly decreasing segment of our population.

In 1988, the National Economic Development Authority (NEDA) defined the so-called "poverty line" or "subsistence level" for average monthly income for a family of six as P2,709 and below. What is noteworthy is that this figure works out to little over the basic minimum wage for that period. The NEDA also estimated 31.8 per cent of the population of Metro Manila as being at or below the poverty line, while the figure for the national population was a staggering 49.5 per cent. Though as of this writing, the NEDA figures for 1992 are not yet out, high inflation rates coupled with the normally lagging increases in wage earnings will in all likelihood reinforce if not further exacerbate this situation. The so-called "poverty line" is not directly correlated with the status of home ownership or tenure. If we define squatters loosely as those who hold no legal title to the land they occupy, it is not possible to directly correlate or classify squatters as those living at or below the "poverty line." In fact, it is not unusual to find squatters with monthly incomes significantly higher than the "poverty line." Nevertheless, in its simplest sense, squatting occurs simply because ownership of safe, decent housing is beyond the affordability of most squatters. Even if we were to make the unqualified assump-

tion of applying the 1988 NEDA percentages to a current estimated Metro Manila population of somewhere in the vicinity of eight million people, this puts close to two million people or say three hundred thousand families at or below the poverty line. The concept of the urban poor population is possibly more expansive and again not strictly related to the NEDA definition of "poverty." Thus, estimates for urban poor probably will exceed the three hundred thousand families at or below the poverty line.

"The Shrinking Dwelling"

For purposes of discussion, let us take a family at this "subsistence level" with an updated average gross monthly income of say P3,000. This, in itself, is not uncommon, even in 1992. Let us then assume that this family has access to home financing through the Unified Home Lending Program (UHLP), via SSS, GSIS, Pag-ibig or the Community Mortgage Program (CMP) of the National Home Mortgage and Finance Corporation (NHMFC). Under the UHLP, the family can borrow up to 36 or 48 times the average monthly income, depending on whether there is a counterpart contribution on the part of the employer (under the CMP the multiplier is in fact only 30). For our purposes, let us assume the lower factor of 36. Thus, at the average gross monthly income of P 3,000, the family can borrow up to 36 times its monthly income or P108,000. Of this amount, a ceiling of 50 per cent or P54,000 can be allocated to the cost of land. The remaining P54,000 can be allocated to the cost of the dwelling unit. If we take into consideration the bench mark unit cost for urban land at P1,500 per sq m, and low-cost house construction at P3,000 per sq m as discussed earlier, then we arrive at a lot size of 36-sq m and a dwelling unit of 18-sq m. It should be understood however that these assumptions are on the liberal side and that, realistically, cost of land and construction would in all probability be higher.

Interestingly, the resulting 18-sq m dwelling unit on a 36-sq m lot is exactly the basic minimum limit for row houses specified by Batas Pambansa 220 which establishes alternative standards for economic and socialized housing. There are already a few low-income housing projects completed within this minimum threshold. A ramification of this approach is the Canchela prefabrication system used in the Vitas housing project of the National Housing Authority (NHA) in Tondo. This system developed four-storey walk-up buildings housing dwelling units at this 18-sq m threshold. It is not surprising to find families of four to even six members inhabiting these dwellings. It should be pointed out that as recently as 15 to 20 years ago, low-income housing projects were still working within a floor area range of 75 to 100 sq m per dwelling unit. A few years ago, the case of the proverbial "shrinking *pan de sal*" was consistently being editorialized. It is obvious that a similar syndrome is also becoming increasingly manifest in the low-income housing situation.

Even assuming that our already liberal cost estimates are correct, nevertheless it can be seen that as we approach the threshold limits of affordability, we also

approach the threshold limits of acceptability and livability. At a floor area of 18 sq m, it is highly improbable that any further reduction is possible within our existing concept of acceptable human habitation. It is becoming increasingly evident that architectural solutions can really go only so far in alleviating these conditions. Even if some new technology were able to reduce construction costs by half, so that a family could afford 36 sq m instead of 18 sq m, the question remains as to how long such a solution would remain effective before some new round of inflationary events erodes whatever cost margins were attained. Moreover, even if by some miracle, construction-oriented costs were stabilized, the volatile character of a highly speculative urban land market would ensure continued inflationary land price structures.

Livelihood Imperatives

Repeated experiences in the housing of low-income groups have shown more and more the need for approaches that go beyond the simple provision of physical shelter. It has been realized that for any approach to have a reasonable chance at success it must address a wider range of concerns beyond those dealing with basic shelter. Primary among these concerns is livelihood and employment. In an ideal situation, housing is within close proximity to sources of income and employment. Case studies of unsuccessful low-income housing projects show that quite often, failure can be traced to unavailability of employment opportunities. This is most especially evident in resettlement schemes wherein residents are relocated with no regard for proximity to places of employment or potential sources of livelihood. As discussed earlier, the situation has already reached its threshold levels as far as construction and land-related variables are concerned. The dwelling cannot be shrunk any further to make it affordable. The efforts must again focus on the other side of the problem.

In the realm of physical planning of communities, this is most directly addressed by allocating land specifically for livelihood generation. Very rarely are "enlightened" approaches developed that purposefully allocate land use with the aim not only of augmenting but also of generating adequate livelihood for the beneficiaries. More often than not, the allocation of land for livelihood is overlooked, or simply discarded in the interest of maximizing residential land allocations. In most cases, this can be traced to basic economic and/or financial exigencies such as those relating to the high cost of land and land development. Thus, this relates directly to the immediately determinable affordability levels of the low-income residents.

Understandably, it is very seldom realized during the early planning stages that the generation of adequate livelihood will in fact increase the affordability levels that constrain the initial situation. It is altogether too easy to be so constrained by the current depressed socio-economic lot of most low-income communities that the resulting community plans provide scarce potential, if any at all for the progressive long-term improvement of life.

Efforts must be refocused on long-term, self-sustaining solution of the low-income aspect of the problem rather than on the myopic and simplistic low-cost aspect. When Batas Pambansa 220 was promulgated in 1982, its aim was to "establish... different levels of standards and technical requirements for the development of economic and socialized housing projects and...housing units in urban and rural areas," from those provided in Presidential Decree 957, otherwise known as the Subdivision and Condominium Buyers Protective Decree; PD 1216, Defining Open Space in Residential Subdivisions; PD 1096, otherwise known as the National Building Code of the Philippines; and PD 1185, otherwise known as the Fire Code of the Philippines. As such, the intent of BP 220 was to relax certain provisions to allow greater flexibility and economy in the development of economic and socialized housing. Whereas PDs 957 and 1216 required a fixed ratio of 70 per cent residential allocation (or salable area) to 30 per cent open space allocation (or non-salable) in regular subdivisions, BP 220 relaxed this requirement by not requiring any fixed ratio between the salable portion to the non-salable portion of the project. Furthermore, areas for community facilities was stipulated as a percentage of gross subdivision area in a graduated schedule according to residential density:

Density **No. of lots and/or living units per ha**	**Required Area for Community Facilities % of Gross area of Subdivision**
150 and below	1%
151 to 225	1.5%
above 225	2.0%

It is interesting to note that community facilities as defined in BP 220 include "facilities or structures intended to serve common needs and for the benefit of the community, such as... neighborhood/multi-purpose center, health center, drugstore, school, livelihood center, etc..."

BP 220 further went on to stipulate the required area for parks and playgrounds in another graduated schedule relating to residential density:

Density **No. of lots and/or living units per ha.**	**Required Area for Parks and Playgrounds % of Gross area of Subdivision**
150 and below	3.5%
151 to 225	7.0%
above 225	9.0%

Comparing the above tables, the relative significance imputed to livelihood concerns against considerations for parks and playgrounds is easily discernible. This does not mean that the stipulated requirements for parks and playgrounds are considered in a negative light. In the high residential densities found in most economic or socialized housing projects, open spaces for recreational and social use are without doubt an essential factor in the life of a community. What should be emphasized, however, is that livelihood concerns are as equally pressing a consideration as recreation and social activity, most especially in the context of low-income housing projects.

At this juncture, it should be noted that where such considerations are physically translated in the planning stages, adaptation is generally the rule rather than the exception once the community establishes itself in residence. And most low-income communities will manifest this directly in the way they adaptively utilize space. As is often seen in the absence of better-planned open spaces, streets and sidewalks become not only the parks and playgrounds, but spaces for commerce as well. Vegetable gardens thrive in almost any unoccupied plot of land. What is sad is not the adaptive utilization of such spaces, since such adaptation often reflects the richness of a community's life and the complex social, cultural and even economic interrelationships that develop within its structure. What is truly tragic in such situations is the inability or unwillingness of planners to recognize the validity of such concerns and provide for them in the development of relevant community plans.

Social Concerns

Planning approaches are generally geared around the satisfaction of minimum aimed at maximum utilization of limited resources. There is basically nothing wrong with this except when such approaches fail to focus on some of the more critical concerns in the life of a low-income community — those relating to the day-to-day relationships, shared hardships as well as the shared effort in alleviating these hardships. The life of a community is manifested in the rich variety of social relationships that bind it together. These varied and complex relationships in themselves form a hierarchy that has to be provided for. Such complexity is the manifest image of any community, and one that must necessarily be addressed in a responsive design process. Even before attempting to decide on materials or the most cost-efficient construction system to use, the planner must be willing to work with a community to determine what its primary concerns and goals are; and to determine how much effort they themselves are willing to undertake in achieving those goals.

These more often than not are what will spell the difference between the success and failure of a project, even more so than the technical considerations or a low per-sq m-construction cost.

Spatial Hierarchy in a Community

The concept of spatial hierarchy in a community is equally valid as in a home. A spatial hierarchy that articulates private, semi-private, semi-public and public spaces is just as relevant to a community as it is to a single-family dwelling. In many a community or neighborhood, this hierarchy is not necessarily clear-cut on all levels. Though private spaces such as single-detached dwellings or private lots are generally well-defined, the succeeding levels in the spatial structure of a neighborhood are often more ambiguous. The character of public spaces such as parks and playgrounds will often vary, depending on the dominative influence or extent of territorial rights exerted by certain groups. Similarly, public streets become impromptu playgrounds, basketball courts or simply hangouts and *tambayans,* especially when there is a lack of spaces designated for these uses.

The ownership of common spaces does not necessarily require a legal basis. In a social context, implied or symbolic ownership can be just as real and binding as legal ownership. An articulated spatial hierarchy in the community is necessary for the proper evolution of that community, because it allows for the spontaneous development of collective-symbolic ownership. And collective-symbolic ownership is the prerequisite for a form of common effort to be initiated and nurtured in a community. Spatial hierarchy in the community is a direct manifestation of complex and oftentimes contradictory expressions of its social character. If the hierarchy of social relationships is not provided for or adequately expressed in the physical structure of a community, then the most immediate social consequences will be a lack cohesiveness and the unsustainability of collective effort on the part of its residents.

The major problem in validating any design is that this can only be undertaken once it is complete and in use or disuse by the user. Design intent can only be tested at this point. Often design dysfunctions only become evident at this late stage. Even from a quick observation of our surroundings we can learn that spaces are often put to unintended uses. This is especially so in low-income communities. Since usable space is at a premium, a variety of uses must compete for a usually limited supply.

It cannot be overly emphasized that the members of a community or neighborhood are essential to the decision-making as well as the "decision-unmaking" process in community planning. Intensive user-involvement in the planning process generally results in community space elements that are affordable, self-sustaining, appropriately-scaled, user-oriented, user-friendly and relevant.

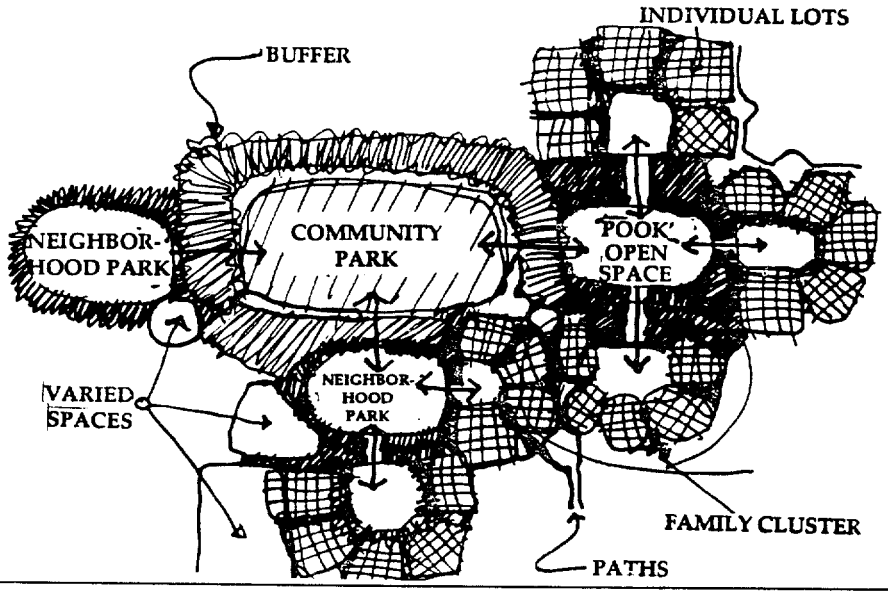
The intrinsic goal of housing, after all, should be the eradication of poverty and the improvement of life as a whole. However naive this may sound, nevertheless, it is the most critical conceptual step that must be taken in planning for hope. Hope for the future is, after all what a home embodies most.

Graphical Planning Concepts

The following graphical planning concepts are reflective of the some of the ideas discussed in the preceding text. They are by no means definitive and are presented simply to illustrate possible approaches.

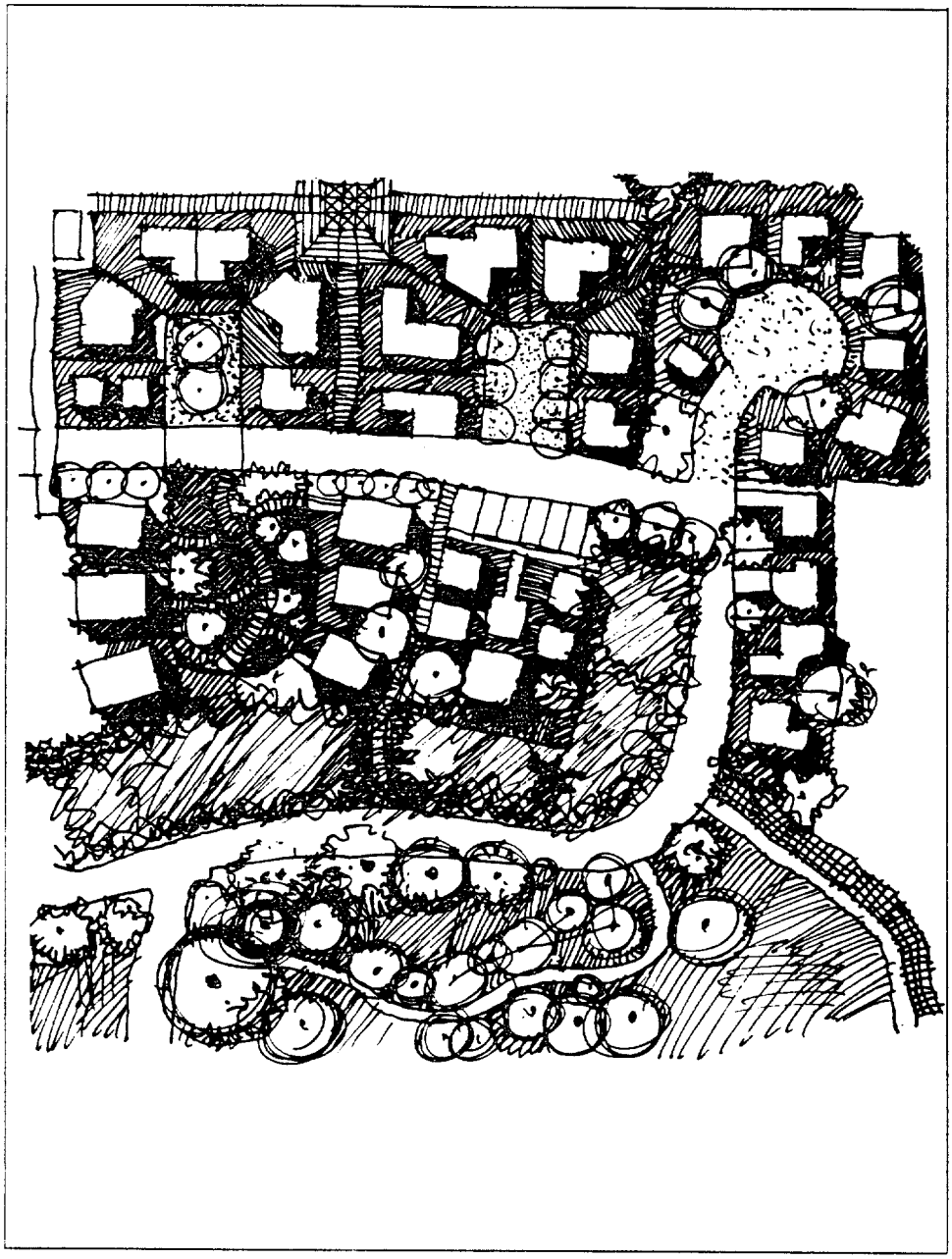
In simple terms, providing a hierarchy of spaces entails developing a variety of spaces differing in size, character and function but with a built-in flexibility and adaptability to differing activities. As a rough guide to quantifying these — the cumulative area of these open spaces should probably fall within 10 to 15 per cent of the gross site area which, when added to the usual 20 per cent allocation for roads and circulation network, will meet the minimum 30 per cent open space requirement originally stipulated by PD 1216, Defining Open Space in Residential Subdivisions. Of course, B.P. 220 has since relaxed this requirement, but for initially estimating open space allocation, the 70:30 ratio is nevertheless a good jumping-off point. As a whole, it is suggested that emphasis be given to providing as much open space as possible, perhaps by decreasing the area allocated to roads or simply increasing the gross ratio of open space.

PUBLIC	COMMUNITY	COMMUNITY PARK COMMUNITY FACILITIES
SEMI-PUBLIC	'POOK' NEIGHBORHOOD	'POOK' OPEN SPACE/FACILITIES.
SEMI-PRIVATE	GROUP OF FAMILIES	COMMON GARDEN SHARED FAMILY SPACES
PRIVATE	FAMILY	PRIVATE FAMILY LOTS



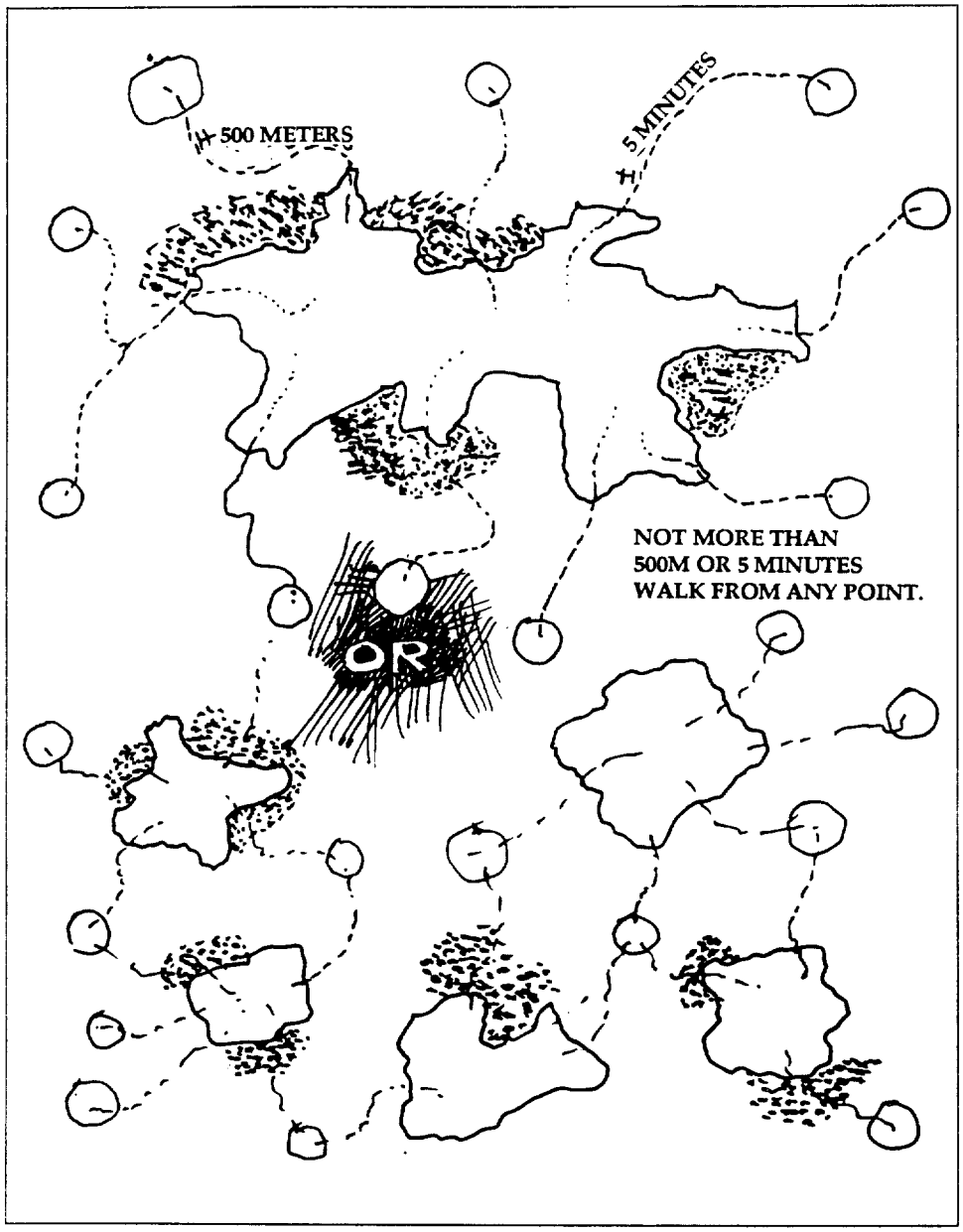
increasing the gross ratio of open space.

As stated earlier, the wider the variety in size and character of these spaces, the greater the potential for accommodating diverse activities. Variations in area should relate to the number and kind of users who intend to use them. The smallest planned open spaces would be those shared by groups of perhaps three to six



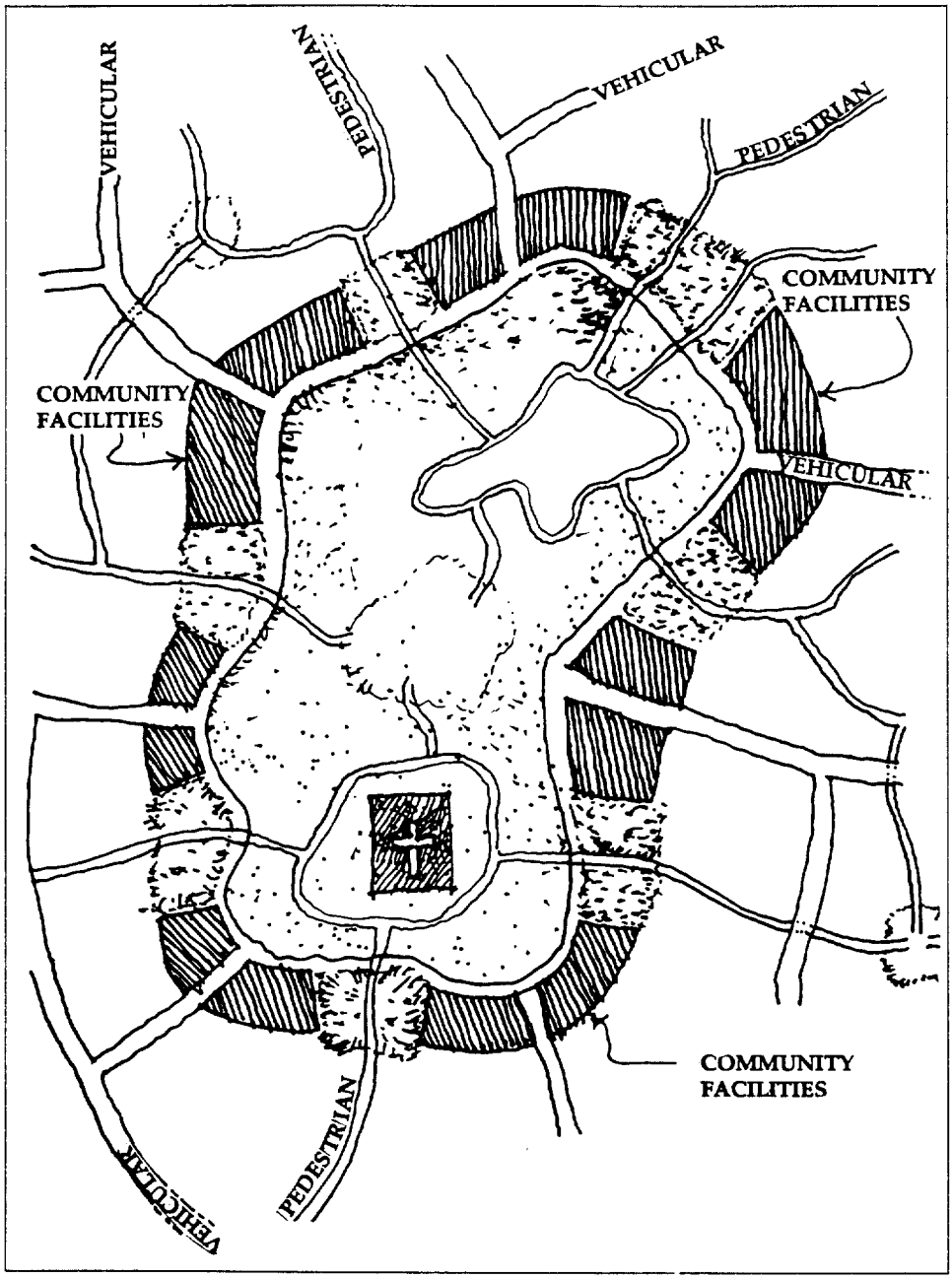
families, while the largest would be those shared by the community as a whole.

Community parks should occupy at least three to four per cent of the total gross site area. The park should ideally be located centrally. This of course would also depend on other factors such as topography and site configuration. Should a central location not be feasible then the park should at least be more than five minutes walk or more than 500 meters from the farthest residential areas. If this distance is



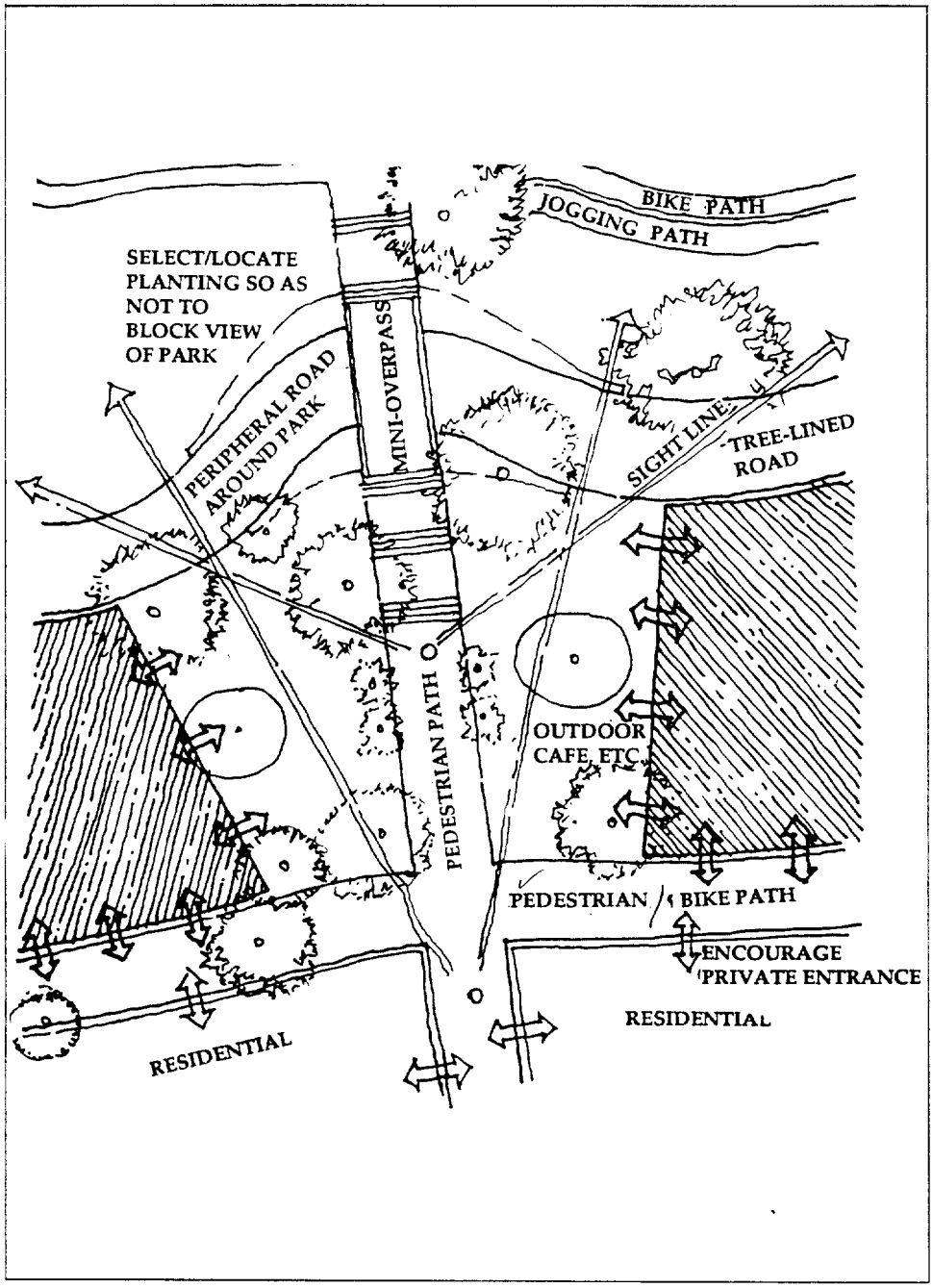
exceeded, then it may become advisable to provide more than one park.

Community facilities such as a health center, community center, chapel, etc. would ideally be located at the periphery of the parks rather than within them. This would allow for a feeling of greater spaciousness as well as preclude the formation of prime residential lots directly bordering the park, thus providing a more



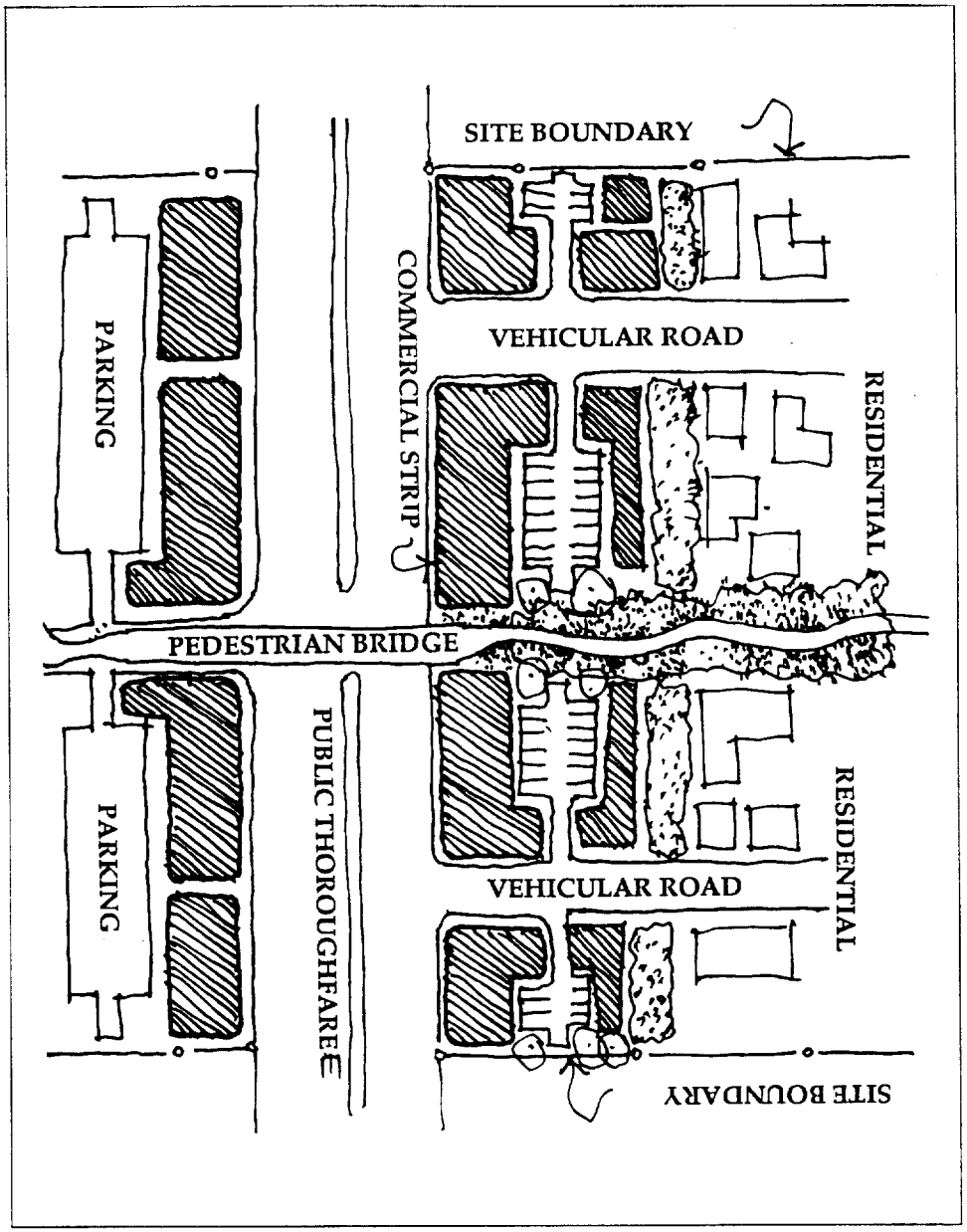
equitable distribution of residential areas.

These zones peripherally located in relation to the park should be interspersed with pockets of open spaces to provide immediately adjacent residential areas with



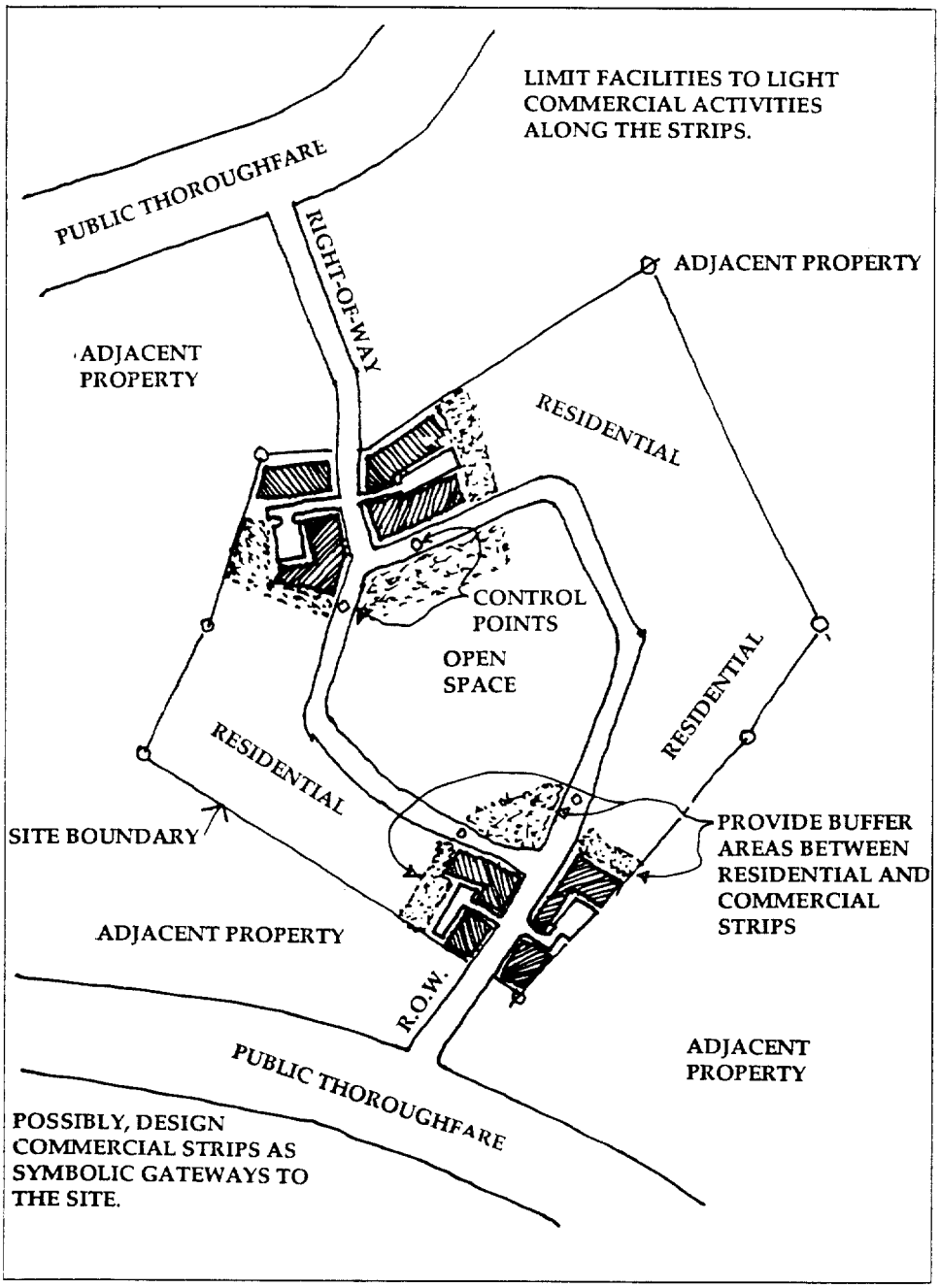
framed vistas of the community park.

A commercial strip can be provided along any main thoroughfare that the site may abut or have a frontage on. Should the public thoroughfare traverse or bisect the site, a commercial strip can be developed along both resulting frontages. The commercial strip will function as a suitable buffer for the adjacent residential areas and, more importantly, provide a source of income or livelihood to the community,

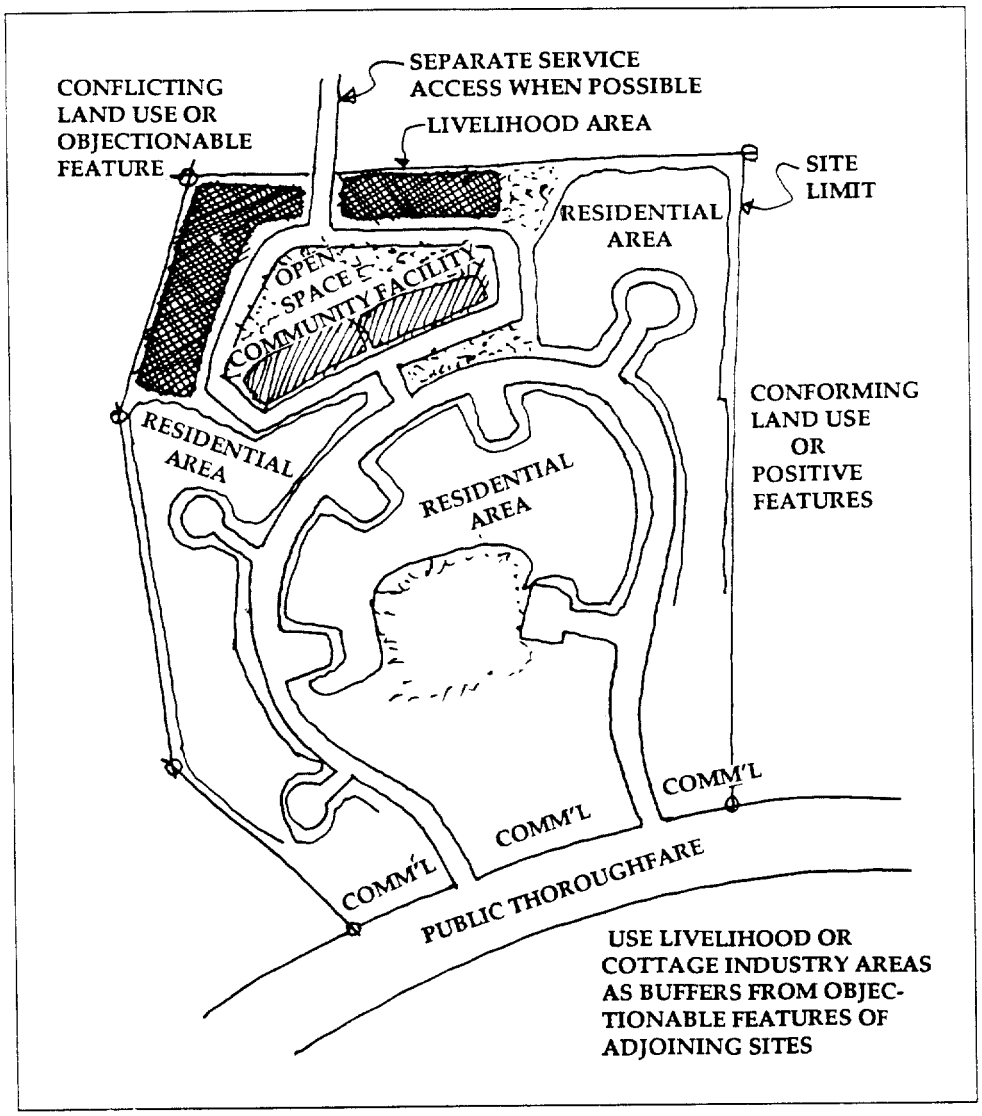


by taking advantage of the prime locational potential.

Should the site have no frontage along any main public thoroughfare, the commercial strip can be located at the peripheral points of the site near the main vehicular access points. Thus, the commercial zone can still act as a buffer while exploiting the prime commercial location.



Livelihood areas or areas for cottage industries should be provided along the periphery of the site, in marginal areas such as low-lying portions of the site or in areas where the facility can serve as a buffer between the community and possible objectionable features of adjacent sites, such as factories, dump sites, etc. When feasible, a separate vehicular access can be provided for this area of modulated development. If this is not feasible, the access should be planned to avoid causing nuisance to adjacent residential areas by the movement of service vehicles and the like.



(Note: *The preceding graphical illustrations are excerpts from the book,* **Housing Cooperativism and Society** *by Virginia A. Teodosio, Melisa R. Serrano and Danilo A. Silvestre, and published by the UP Employees' Housing Cooperative, Inc. in 1991.)*

III. OPEN FORUM DISCUSSIONS

OPEN FORUM DISCUSSIONS

I. ON GOVERNMENT POLICIES, PROGRAMS AND PROCEDURES

The role of the government as a potentially strong partner and facilitator of the private sector in shelter assistance and development was underscored during the open forum. The group cited a number of praiseworthy features of government's housing performance both in its programs and methods of implementation. The good reviews include the following:

1. **Encouraging private sector participation**

   Rather than continue to be a direct producer of housing units, government has phased out production activities in favor of supporting the initiatives of the private sector in providing housing for the poor. Of late, NGOs, in particular, are being encouraged to act as conduits for the shelter assistance programs of government. The dialogues frequently taking place between government and NGOs are healthy for the low-cost housing sector and should be institutionalized.

2. **Giving increased flexibility to developers**

   The government, particularly the NHMFC, has allowed developers to be their own mortgaging agents, giving them greater flexibility and freedom to implement their own programs.

   Batas Pambansa 220 has also given a lot of leeway for private-sector groups implementing low-income housing projects by liberalizing prescriptions and restrictions in terms of social space, street width, lot size, floor area, etc.

   It was also mentioned that while government lands cannot be sold without authorization from the President of the Philippines, such land can be leased for 50 years. The HDMF and the NHMFC are willing to accept mortgages on this basis.

3. **Efficiency of UHLP**

   The Unified Home Lending Program of NHMFC was cited for its high level of efficiency, promptness of service (including releases) and abundance of funding. Moreover, it was considered to be a "clean" program, scarcely tainted with graft and corruption. In fact, other programs are urged to match the UHLP in terms of level of service.

On the other hand, some negative feedback regarding the performance of government in low-income housing surfaced. These include the following:

4. **Bureaucratic red tape**

Red tape in the government bureaucracy emerges to be a burning issue among organizations involved in delivering housing services to low-income people. Processing of housing applications and documents is fraught with delays, often resulting in losses on the part of the developers and individual home owners not only in terms of time but also money.

Bureaucratic delays arise for a number of reasons, including:

a. *Centralization of services in Metro Manila and other urban areas.*

Even if regional and provincial branches are available, these offices are not fully empowered to make major decisions and final approval.

It was suggested that it is not decentralization alone but decentralization with power which will help eradicate red tape. Normally, the central office makes the policies which then go down to the regional offices for implementation. However, the reverse process must also take place, where the regional offices — with their rich, field-level experiences in dealing with clients and their problems — influence the policies being formulated at the top.

Although at the moment there are only task forces present in the regions, both HDMF and NHMFC will eventually decentralize. Other agencies like HIGC and HLURB are also expected to follow suit. At the moment, the agencies are still working out the mechanics of decentralization. The extent of authority that the regional offices will eventually wield is not yet known. It was also hoped that decentralization will not mean that originators have to deal with two offices —the head office and the regional branch — instead of one, and consequently incur more expenses.

However, as far as developmental loans are concerned, NHMFC and HIGC is in a sense already operating on a decentralized system whereby the evaluation and processing of loans are already being done in the regions.

b. *Inflexibility in loan requirements and processing.*

Some government agencies refuse to bend requirements and procedures and insist on enforcing them to the letter. Minor flaws in accomplishing loan applications (e.g. misspellings, mistyping, etc.)

can trigger an inordinate amount of delay. Moreover, the various departments involved in processing the papers in a given agency do not coordinate with each other in making a common examination of the papers as to their completeness and accuracy before sending them back to the originators or applicants. As it is, it sometimes happens that applications are sent back as many times as there are departments examining and processing them.

It was acknowledged that government has begun to take steps to minimize this problem through an origination warranty scheme of the HUDCC, the details of which are being worked out. The scheme is expected to take care of minor flaws in accomplishing applications forms and other loan documents.

c. *Lack of care and accountability in handling documents*

Cases of documents lost, MRI checks misplaced, etc. while being processed by a government agency were cited.

d. *Uncommitted public servants*

Sound policies and viable programs are undermined by some government employees who are inefficient, slow and uncommitted. Government people have also come to be associated with graft and corruption. Employees must develop better work ethics and habits.

Government personnel involved in low-cost housing need training to make them more development-oriented and to encourage them to be flexible about certain requirements that may be liberalized to speed up processing.

On the other hand, the quality of service may tend to be higher in the private banking sector. A cooperative bank (Cooperative Bank of Davao) asserts that its objective is to serve rather than to make money. The investment that it has made in people is the secret of its success in implementing housing financing programs, it was claimed.

As a reaction to the issue of dishonest public servants, it was pointed out that graft and corruption is not a monopoly of government agencies. The problem also plagues the private sector, including NGOs. Therefore, in addressing the problem, action programs must be formulated to take account of both GOs and NGOs.

5. **Government at Cross-Purposes**

While government policy professes to assist and facilitate private sector efforts at delivering low-cost housing to the poor, the efforts of

government housing agencies are often negated or slowed down by the policies and practices of other branches and instrumentalities of government. Examples cited that contribute to the perception of a government at cross-purposes are: a Department of the Budget and Management that is slow in releasing even already allocated funds; city or municipal governments enforcing restrictive zoning rules; a Department of Agrarian Reform which does not make it easy to convert agricultural lands into residential use; etc.

With regards to land titling, pilot computerization of the Land Management Bureau and the Land Registration Authority is about to take place and is expected to speed up the process. On a much broader scale, a law is about to be enacted (House Bill 23093) creating a Department of Housing which will absorb the HUDCC and other housing agencies. The proposed Department of Housing is expected to be invested with greater power to negotiate with the DBM and other agencies in addressing the national problem of housing.

6. **Barriers to land conversion**

Converting agricultural land for residential purposes is a trying process, it was maintained. One has to contend with a Department of Agrarian Reform which makes conversion difficult, prolonged and painstaking; a Land Registration Authority that is slow in processing land titles; and a Bureau of Internal Revenue that imposes heavy taxes on landowners who are otherwise interested to donate land for low-income housing.

Land conversion problems may, however, be resolved by implementing a low-income housing program as an agricultural settlement rather than as an urban poor housing project. Under the newly-approved Local Autonomy Act, local governments will be allowed to convert agricultural land to home sites within given limitations. Regarding land donor's taxes, it was pointed out, landowners who sincerely desire to donate their property can channel their donation through a conduit government organization and avoid paying taxes. For instance, the National Housing Authority can accept the land from a private donor and in turn re-donate the land to low-income beneficiaries.

Land conversion, however, is vulnerable to abuse by unscrupulous landowners who might use conversion as an excuse to circumvent the Comprehensive Agrarian Reform Program or to avoid paying taxes. Those involved in housing projects for the poor must guard against this danger of being used by exploitative landlords for their selfish ends.

7. **Apparent bias against private developers of social housing**

The Home Development Mutual Fund (HDMF) was particularly cited for being out of touch with the needs of private developers of social housing. These developers are constrained by what is perceived as the extreme security-orientation of the agency, so much so that most of the funding goes to professional developers who overprice the houses and make inordinate profits for themselves. Social housing developers also ask for more streamlined processing, clearer loan guidelines, loan procedures and releases that are more synchronized with the rhythms of timing that developers need.

It was also noted that NGO originators are frequently well-organized, with a lot of healthy dialogues taking place between NGOs and government. By contrast, the developers of social housing have not been similarly organized.

Government was urged to take the initiative in getting social housing developers together to dialogue with government. A forum was envisioned whereby heads — rather than minor officers — of government agencies may be invited to listen to the developers' suggestions on how the agencies can be more service-oriented.

8. **Inaccessibility of the program to the masses**

To the ordinary low-income earner, especially in the rural areas, the programs seem to be inaccessible. It was opined that decentralization of programs should go down not only to the regional level but also to the provincial and even further down to the municipal levels.

Such a move merits consideration in the implementation of the New Local Government Code.

Other issues that were discussed on the floor that has to do with government policies and programs include the following:

9. **Advantages and disadvantages of bridge financing**

Conduit banks of government housing assistance programs provide interim financing or bridge financing. Such financing is generally considered disadvantageous for borrowers since bridge financing carry interests at commercial rates. However, it was pointed out that since banks providing interim loans release funds very promptly and often in lump sum, borrowers are able to take advantage of the economies of cash and volume purchases. Moreover, the difference in interest rates may be neutralized by the expenses borrowers will otherwise incur if they have to travel to the regional offices in the cities to file and follow-up loan papers. The short-

term life span of interim financing was noted, too, since construction of low-cost houses normally takes only one to two months. For these reasons, availing of bridge financing rather than borrowing directly from HDMF or some other housing agency may turn out to be more economical for borrowers in the long run, it was suggested.

10. **Role of local governments in implementing shelter programs**

Doubts were raised as to the capability of local government units to deliver the required housing programs and services in the light of the imminent implementation of the Local Autonomy Act. While decentralization is a sound concept, local government units must be given time to develop their capabilities in terms of the various line functions they have to perform, including shelter provision activities. Turnover of functions must be done efficiently and clear guidelines must be formulated carefully.

11. **Collection problems, foreclosures, alternative to foreclosure, etc.**

Government is generally regarded as a poor collector of amortization. Of late, government has made it a priority to systematize the collection process for both the CMP and UHLP. While it is easier to foreclose property under CMP since the one-year redemption does not apply to the program, foreclosure will always be the last recourse. An alternative to foreclosure is buying back of delinquent mortgages by the originators under a deferred payment scheme. This scheme is at present being discussed with NHMFC. Moreover, foreclosed CMP property may be unitized, i.e. broken down into individual titles which may then be transferred to UHLP and processed into individual loans.

II. NGO EXPERIENCES IN BUILDING HOUSES FOR THE POOR

Other lessons and insights relating to NGO participation in shelter production emerged from the floor. These include:

1. **Screening and selection of beneficiaries**

Most NGOs report a screening rather than a marketing problem, since many people are truly eager to own houses. Questions were raised regarding the criteria used in screening and selecting beneficiaries of the housing packages.

DIHo replied that the units were first offered to beneficiaries of organizations and companies which sponsored the housing project. The rest of the units were then put up for sale in the open market. On occasion,

however, DIHo had to concede to cash-flow realities and therefore was forced to sell to those who could afford to pay for the units. However, with its USAID-financed housing project, an income ceiling of P5,000 was imposed for would-be beneficiaries.

F to B checks on the eligibility of beneficiaries for UHLP- financing, distance to place of employment, and inadequacy of present housing conditions. Family income should range between P3,000 to 5,000. F to B also reports a bias for young families. Another dimension of screening is a two-day pre-occupancy seminar explaining the implications of home ownership in terms of personal, family and community responsibility which sometimes weeds out people with speculative intent and should not get a house. Working with a group also helps in the screening process since members can give useful information about other members of the group.

2. **Keeping a lean organization**

It was suggested that keeping a lean staff is not always recession-proof. "Unitizing" operations may offer better security against crisis conditions. A unitized operation involves two or three core personnel, with much of the work being done through established relationships with engineering offices, surveying offices and other agencies.

3. **Profitability**

There is a danger for NGOs and private developers to miss the essence of development. They should be less concerned about profit than about building up capability of people to pay for the houses and to work with them in the context of development.

The question of what constitutes a reasonable margin of profit for NGOs was discussed in a lively debate. It was asserted that in the field of social housing, rationalization must not be confused with maximization of profits. It was maintained that the function of profit is to build up a capital base that will enable the NGO to deliver services on a sustained basis. It is, in fact, needed to ensure the long-term survival of the organization; for the organization to take risks; for its people to grow. On the other hand, run-away profit is not consistent with social housing. DIHo, for example, began with only three to four per cent profit margin which had to be increased in order to maintain a five – to six month cash flow. It was also pointed out that NGOs who find out that they have made undue profit could always use the money to further improve the housing project through infrastructure grants like paving roads, improving drainage systems, or building a chapel, a community center or sports facilities. Information was also offered that during the last CREBA consultation meeting, it was agreed that 15 per cent mark-up is considered reasonable for socialized housing.

Another idea put forward is that pricing must be as close to the market as possible and that producing cheap should result in selling cheap.

Corollary to this, the taxability of big NGOs like F to B was discussed. There are two sides to this issue. The contention of the Bureau of Internal Revenue is that taxability follows from profitability. On the other hand, F to B insists on tax exemption because its board of directors do not take profit and because the organization is rendering social services supportive of government's own objectives.

4. **Working capital requirement**

Building houses for the poor requires a lot of money. An NGO needs five times the selling price of the house to keep a continuous flow. For example, if a unit costs P 100,000, a developer needs P500,000 a month to build one house a month on a sustained basis. A five-month cycle is usually involved, which includes buying inventory, building the house, chasing after the documentation, putting mortgage papers into NHMFC and waiting for the take-out.

5. **Housing density**

Several years ago, a hundred families per hectare was considered over-populated. Today, 200 houses or more to the hectare has been programmed in some projects. Over the years, the law has been increasingly liberal regarding housing density. Batas Pambansa 220 allows salable private space of up to 82 per cent of the total project area. However, the stretching of space up to its limits may take its toll on the quality of life of the people who will eventually live there. Developers are reminded that allocating more social space does not necessarily mean less profit since the developer may charge a little bit more for the private home sites. Making this trade-off will make a housing project more socially acceptable.

6. **Building restrictions**

Many low-cost housing projects for the poor feature a self-help building component. However, this should be controlled. Some beneficiaries get carried away and construct beyond prescribed limits. Restrictions are an important part of housing projects. Restrictions are imposed, for example, on the way the houses may expand. Creative ways have to be explored to counteract the boundless energy of people to circumvent reasonable restrictions.

DIHo, on the other hand, does not impose specific restrictions. The families are allowed to build up to the setback of two meters and up to the property line if there is a fire wall.

Hermana Fausta, faced with the problem of over-energetic beneficiaries, decided to do away with the self-help feature and to go for uniform dwellings.

7. **Banking/Mortgaging Function**

The government has allowed originators, including NGOs, to be their own banking and mortgaging agent. Learning the system is not necessarily difficult but takes time. F to B, in addition to developing this capacity with its own people, has trained the staff of Negros Economic Development Foundation on the intricacies of banking and mortgaging and is willing to render the same service for other NGOs.

8. **Community involvement**

It was observed that where residents do not have some kind of input, ownership or a sense of belonging to the community is more difficult to establish. This results in lack of concern for maintaining their own houses and community facilities.

A case in point is an employee – housing project of a large company where it has been observed that employees tend to be complacent and indifferent. Since the company provided for everything, the employees did not have to contribute any input. A further disincentive to involvement was that the employees felt that they will eventually lose their homes when they would have retired.

9. **Cooperative approach to housing**

The cooperative approach to low-cost housing has been used with good results. Organizing themselves into cooperatives will make it easier for beneficiaries to approach sources of financing such as NHMFC, HIGC and HDMF whose programs have lately been geared towards housing cooperative types.

Housing cooperatives are also promising in terms of setting up and running income-generating activities for the community. Food production, building materials manufacture, and franchise manufacture of building systems are some examples of potentially viable livelihood projects that may be started and managed by a cooperative. Joint venture projects and sub-contracting relationships with private companies are also worth considering.

10. **Attitude towards beneficiaries**

It was suggested that in lieu of the term "beneficiaries," NGOs use "customers" or "clients" to refer to the users of the housing products.

"Beneficiaries" tends to imply a condescending attitude while "customers" or "clients" sounds more professional and businesslike.

III. DISASTER-RESISTANT HOUSING

The presentation of building low-cost houses for disaster resistance elicited much interest. Questions and comments raised include the following:

1. **Replication of Core Shelter technology**

   Interested parties — NGOs, GOs, and LGUs — may avail of the Core Assistance Shelter Program technology through collaboration with DSWD. However, a mechanism that will ensure proper use of the technology has yet to be designed by DSWD. Housing models under the CSAP can be modified or upgraded, depending on the financial capabilities of the beneficiaries and availability of construction materials, provided that the basic disaster-resistant features are maintained.

2. **Security of tenure of CSAP beneficiaries**

   The essence of core shelter program is providing temporary but safe housing for disaster victims. CSAP is, therefore, different from other housing projects where beneficiaries eventually acquire title to the units. In view of the urgency of the need for shelter by the victims, availability of shelter rather than security is the more critical concern.

3. **Planning for disaster-resistant construction**

   The importance of planning was reiterated with reference to the collapse of buildings in Mindanao due to a recent earthquake. Malpractice in the construction industry is blamed for structural failures. There is a need to go back to safety basics.

   A challenge was posed to policy makers, NGOs, GOs and other groups concerned to take initiatives in inculcating the importance of disaster-preparedness among the general public.

4. **Comparison of building materials in terms of disaster- resistance**

   Various construction materials were reviewed and compared relative to their affordability and suitability for disaster-safe construction.

   Both bricks and hollow blocks are brittle; flexibility and elasticity are not provided. Hence, utilization of either should be founded on disaster-resistance techniques.

Shed and gable roofing were likewise compared. Proper anchorage can protect both types of roofing.

Choice between rafter or trusses is dependent on one's preference. On the other hand, galvanized iron is recommended over roof tiles. Roof tiles are composed of individual pieces and offers little protection from being blown away. On the other hand, galvanized iron may be secured and tied down in the right manner.

It was concluded that almost any material is acceptable as long as it is used with proper disaster-resistant techniques and designs. Durability and disaster-safety of a structure depends on its design, the implementation of the design and workmanship.

5. **Improvement of disaster-resistant structures**

Dagat-dagatan, a government resettlement area, sits on a reclaimed area. In the face of the possible activation of the Marikina fault, it is vulnerable to liquefaction. The site should be investigated and if found susceptible should be strengthened to avert possible collapse of the houses.

6. **Fire-proofing**

A possible aftermath of an earthquake is the outbreak of a fire. It is therefore contingent to provide for spaces between structures with consideration for gas supply connections. It was recommended that zoning ordinances be provided by cities and municipalities with pronounced fault lines. To support this measure, a comprehensive study of the fault lines should be conducted, the findings of which should be included in the building code and zoning ordinances.

7. **Critique of a specific housing design**

The design of a certain housing project visited by the group was analyzed in accordance to disaster-resistant features and the following observations were made:

a. The structure is concentrated on the top storey and supported by four columns on the ground floor. The earthquake force is likely to act on the columns. Its capability to withstand the force is questionable. The open space also poses a hazard. Other disaster-resistant features, such as bracings, are missing.

b. The different materials used, including hollow blocks and timber behave differently in disasters.

c. The lightness of the structure will help guard the house against typhoons.

The above observations are, however, tentative and incomplete since they have been made without benefit of building plans and calculations.

8. **Exploring new materials for disaster-safe construction**

The use of new, non-traditional materials in disaster-resistant housing was explored. This raised the possibility of building pre- fabricated plastic houses in the future.

9. **Use of A-bomb for dissipating the energy of typhoons**

Regarding the theory that dropping an atomic bomb can dissipate the energy of typhoons, experiments were cited giving contrary evidence. A bomb reduces the energy by 10 per cent and within 15 minutes the energy from the ocean returns. However, researches on dissipation of earthquake energy with the use of a bomb are ongoing and promises to be a solution to this disaster.

IV. TECHNOLOGIES, MATERIALS AND DESIGNS

The following discussions took place in reaction to the various presentations on low-income housing technologies, materials and designs:

1. **Role of the commercial sector in low-income housing**

Competitive pricing in building materials and construction system works to the advantage of low-income housing programs. Healthy competition tends to bring down production cost, making the units accessible to the homeless poor.

The participation of the commercial sector in housing programs may be promoted through arrangements with government shelter agencies. They can supply technologies, systems, materials and designs that will effectively bring down the cost of constructing housing packages.

2. **High-density vs. single-unit housing**

Doubts were raised as to the acceptability of condominium – type or medium-rise housing, especially in the rural areas. Owning a piece of land is a deep-rooted Filipino value. In Metro Manila, where the cost of land is very high, this aspiration is almost impossible to attain for an ordinary wage-earner. Lack of water facilities also poses a constraint to medium-rise building.

Medium and high-rise construction also poses the danger of vandalism, public violence, crime and addiction. There is a need to educate the community on social responsibilities implied in high-rise living. A study was cited which found that vandalism rate is lowest where there is ample landscaping.

3. **Approaches in housing technology adoption**

There are two basic approaches in adopting construction technology and design in housing, namely:

a. Filter-down approach whereby housing models are used by families of certain income levels. As these families improve their economic lot, the systems and technologies filter down to the lower-income levels. This is typical in Western countries.

b. Filter-up approach whereby housing models used by urban low-income families end up being adopted by those belonging to relatively higher-income groups. This approach is more prevalent in the Philippines and exemplified by the Dagat-Dagatan (Tondo, Manila), Dasmarinas, Cavite and Sapang Palay housing projects for resettled squatters.

4. **Quality of the houses**

It was maintained that an NGO or developer need not put up with inferior housing in spite of a tight budget. A lot of effort must go into making the houses sturdy. Aside from the housing structures themselves, related infrastructures have to be responsive to typhoons, including a well-designed drainage system and good roads. The key here is respect for the people who will occupy the units.

5. **Barriers to the adoption of housing technology**

Questions were raised regarding barriers to the adoption of some of the technologies presented.

Some of the construction materials and building systems are patent-protected and groups interested to produce these need to approach the patent-holders and be prepared to pay royalty fees.

Another building material, Cemwood (wood-wool cement boards), is not yet available outside Luzon, although the manufacturer is open to joint venture projects with suitable partners in the other regions.

High-capital intensity of most of the technologies constrain their propagation to places where they could be used.

Among the technologies presented, the compressed earth block is among the few that may readily be transferred.

V. PLANNING LOW-COST HOUSING

From the floor, the following issues were raised relative to planning aspects:

1. **Functional use of streets**

   Using streets for functions other than for vehicular passage and pathways is compatible with Filipino culture. Hence, bigger spaces should be allotted for streets to accommodate these other uses. Measures to ensure safety of the residents should, however, be put in place.

   In low-income housing, roads are usually spaced 20 to 30 meters apart and this makes development more expensive. Spacing roads 50 to 60 meters apart, with corresponding use of foot paths, will be more economical. Some open spaces may be made parallel to roads. Specific prescriptions on providing for roads are stated in Batas Pambansa 220.

2. **Community involvement in planning and implementation**

   Linking up community organizing with planning and development is a sound albeit expensive approach.

   In the Pagtambayayong housing project, members of the community are involved in paving the roads. Such participation instills the spirit of oneness in the community and makes repair and maintenance easier and faster. In this sense, too, the community becomes its own developer.

3. **Support programs for livelihood activities**

   Again, in the case of the Pagtambayayong project, loans are given out for income-generating projects, especially those generating building materials for the community.

4. **Other issues relevant to planning**

   a. There are advantages in limiting the community to a manageable size.

   b. There is danger that some income-generating activities may disrupt order in the community.

IV. WORKSHOP OUTPUT

WORKSHOP OUTPUT

Each consultation-workshop concluded with break-out sessions where groups of participants discussed the following critical issues:

1. Development goals of a low-income housing program

2. Target beneficiaries

3. Areas of concern

4. Options, approaches and strategies to address the areas of concern that have been identified

5. Specific roles of concerned sectors and institutions, namely:

   * non-government organizations (NGOs)
   * peoples' organizations (POs)
   * government organizations (GOs)
   * planners/developers/contractors/builders
   * financing institutions
   * target beneficiaries

The output of the workshop groups are summarized below:

I. MANILA (LUZON) CONSULTATION WORKSHOP

GROUP I

Group 1 defined the development goal of low-income housing program to be the provision of affordable housing for households with income of P2,000 and below as well as the involvement of such households in the planning and implementation of the program. The basic concept was the development and delivery of an integrated package made up of housing, livelihood, and land.

Identified as critical areas of concern are: financing; access to land; support systems; livelihood and income generation; construction materials; technical aspects; and security of land tenure.

To address these critical areas of concern, the group identified "twin" strategies, namely: on-site development assistance and resettlement to rural areas.

On-site development assistance will necessarily involve organizing the community into a power group that will be able to negotiate with government, non-government and other organizations for the purchase of the land that they are living in.

On the other hand, the urban poor may also be encouraged to leave the cities and move to resettlement communities in rural areas through the provision of livelihood opportunities and income-generating projects. Big businesses, foundations and other private groups may in turn be invited to come in as sponsors of livelihood and income-generating projects with incentives like tax deductions. Here, local government units can also play a crucial role in the light of the imminent implementation of the new Local Government Code where they are expected to assume expanded powers with regards to housing and shelter programs. Through networking arrangements, various sectors and institutions can work together to make integrated resettlement programs work.

In the development process where provision of shelter is the focus, what roles should the major participants play? Group 1 gave the following answers:

Non-government organizations, will be the major provider of support systems, including community organizing, technology transfer, etc.

Government organizations will take responsibility for formulating responsive policies and programs.

Planners/developers/contractors/builders are expected to provide technology and technical assistance, skilled labor and competent management. They will also play a part in tapping private groups for access to land and services.

Finally, the target beneficiaries themselves should participate actively in planning and implementing the various programs in accordance with their own needs and resources.

GROUP 2

Group 2 defined and identified target beneficiaries of a low-income housing programs:

Households which are urban-resident, six-member family units with a total monthly income not exceeding P5,000 and classified under one of the following three levels: (1) those belonging to the marginalized sector; (2) those not regularly employed or those working in the underground economy; or (3) those within the poverty line but are regularly employed and eligible to borrow from formal sources, e.g. teachers, police officers, drivers, etc.

The development goals, as defined by the group, are directed towards the long-term objective of eradicating poverty. Specifically, the strategies to be formulated should be directed towards the following: (a) developing housing packages which are affordable to the target beneficiaries; and (b) advocating for an urban land reform program; and (c) developing rural communities to decongest the urban areas.

Given the income levels defined by the group, the major issues of concern were narrowed down to the following: (a) the basic need for core shelter for levels 1 and 2 and (b) and the need for integrated shelter and livelihood program for level 1.

Anchored on the variables presented above, support services for the target beneficiaries may include the following:

1. Socialized housing and support services, such as livelihood, health and education.

2. Transition settlement with basic facilities.

3. Subsidized rental housing or public housing. (This concept was implemented in a previous project of NHA called Poor Man's Housing. Data on the progress of the project is, however, not available).

4. Rental housing.

A housing program can only succeed if the various actors in the development process will play their respective parts with greater vigor ad commitment.

Non-government organizations, identified as the resource generators, are tasked with: (a) streamlining and centralizing development efforts by networking with government organizations, other NGOs and POs; (b) capability-building through value formation, community organization and advocacy.

Contractors, developers and planners, the prime movers of the construction industry, are encouraged to share resources and expertise. Development of new and appropriate technologies should be promoted and disseminated, especially among NGOs through skills development. It was recommended that socialized fees be charged to encourage this group of prime movers to share their knowhow. They may further be motivated with provision of tax exemptions and other incentives by the government.

Financing institutions should be more responsive to needs for financial support for low-income housing products. It was recommended that these institutions liberalize their policies and procedures to make them more accessible to target beneficiaries. Another contribution of this sector will be in terms of assisting other groups in setting up mutual funds.

Government, for its part, should enhance its role as facilitator by cutting red tape, simplifying requirements and documents, etc. In the same manner, government expenditures should be prioritized and wasteful expenses eliminated. Efficiency of government service can be fostered through intensive value formation and educational activities, like seminars.

Target beneficiaries can contribute primarily through sharing in the responsibility for their own development and participating in the planning process.

II. CEBU (VISAYAS) CONSULTATION-WORKSHOP

GROUP 1

The development goal of low-income housing, as identified by Group 1, is ultimately the building of self-reliant, self-sustaining communities — communities that can join the economic mainstream and contribute actively to nation-building. To this end, safe, decent and affordable housing units must be provided and complementary livelihood support systems set up.

Group 1 envisions a housing program that focuses on the housing needs of the lower 30 per cent of the population, which normally includes the following: families without homes of their own; owners of sub-standard, dilapidated or otherwise inadequate dwellings; squatters evicted from their homes; households located on high slopes, fault zones, typhoon belts and other unsafe areas.

The housing program must address the following issues and concerns:

1. *Land*

To make land more accessible to the landless, homeless sectors of society, the following measures should be considered: the immediate enactment and implementation of the Urban Land Reform Act; undertaking by the government of land banking activities; and relaxation of restrictive ordinances.

2. *Financing*

Financing programs must be liberalized in terms of interest rates, amortization schedules and loan ceilings. Access to financing should be improved with the setting up of regional one-stop centers for government housing assistance and services. Government is likewise urged to give housing a bigger slice of the development pie.

3. *Marketing*

Given the high demand for housing units, guidelines on beneficiary selection and prioritization should be clearly defined and carefully implemented. Affordability levels should also be redefined in order to improve poor people's access to housing packages.

4. *Supply and Technology*

Use of appropriate and low-cost housing technologies and materials may be promoted through intensification of material research (as well as provision of grants to the private sector to conduct R & D); setting up of production centers for volume production of housing parts, components and materials; and establishing centralized data banks on housing technology and designs. National agencies of government as well as local government units are also urged to make available their equipment to the private sector for land development activities.

5. *Government Policies and Regulations*

Issues on land conversion, land reform, stringent development standards, burdensome taxes, and bureaucratic red tape may be addressed through the formulation of workable implementing guidelines by government in consultation with other sectors. Tax and fiscal incentives should also be made available to private developers who would be engaged in delivering housing services to the poor.

The main actors in the housing development process should be more aware of the role they have to play. NGOs are asked to take the lead in social preparation of beneficiary communities as well as in their value formation. They should also try to upgrade their capability as originators and producers of housing. GOs should take initiatives in terms of land acquisition and making these available to the people, building of infrastructure facilities and acquisition of required construction equipment. Most of all, it is incumbent upon government to create an environment conducive to low-income housing programs. Developers, planners and builders are urged to move towards more social orientation by setting aside at least 20 per cent of their resources to low-income housing. Similarly, financial institutions are asked to open their doors more widely to poor beneficiaries by relaxing interest rates and other terms.

A specific resolution of Group 2 is to petition the National Electrification Administration (NEA), the Local Water Utilities Administration (LWUA) and other utilities agencies to make it a priority to provide power and water facilities to low-cost housing projects.

GROUP 2

Group 2 perceives the development goal of low-income housing as the formulation and operationalization of an efficient and integrated housing delivery system

in the Philippines with the homeless and landless rural and urban low-income groups as target beneficiaries.

The group's vision of developmental housing goes beyond the mere construction of housing units. Rather, it visualizes the creation of self-sustaining, vibrant communities. These communities should satisfy the so-called "ESPECS" values (Ecological, Social, Political, Economic, Cultural and Spiritual). Given assistance, the members of the community would be able to develop themselves to become productive members of the society.

Several areas of concern have been identified by the group to be most critical:

1. *Access to land*

Government must take steps to do away with complex and unnecessary requirements to make conversion of agricultural land to residential purposes viable.

Local government units are also urged to engage in land banking. Constraints to land ownership may be eased with the following measures: enforced taxation on idle and unproductive land; giving community housing associations and LGUs the option to acquire lands foreclosed by government banks; and exemption of foreclosed property from Commission on Audit (COA) regulations provided these are sold to LGUs or community associations.

2. *Proximity and accessibility of housing site to places of work*

Access to places of employment may be improved through improved road systems, development of satellite communities and building of high-density, low-cost structures.

3. *Bureaucracy*

The bureaucracy must be rationalized to streamline processing of documents and, generally, improve efficiency in the service. The setting up of fast express lane processing and facilitating decentralization of government services were also proposed.

4. *Financing*

Reforms are indicated to make the various housing financing programs more responsive to the needs of low-income borrowers. These should include: reduced lending rates for low-income housing and increased interest rates on deposits; simplified loan procedures and requirements. The group likewise urges the national government to consider reducing foreign debt payments so that more funds may be channeled to the critical needs of the people, including housing. Government should also be more active in tapping new sources of funds to build houses for the poor.

5. *Technology*

Low-income housing technologies should feature standardized components, readily-expandable designs, and indigenous materials.

Government, NGOs and POs, and developers and planners as well as the poor people themselves should work together in pushing and implementing responsive housing programs.

Government is urged to support private housing initiatives through providing access to resources, formulating supportive policies and plans, spearheading research and development and providing incentives to developers and planners to engage in low-income housing. GOs should also stop competing with NGOs and other private sector group for resources for low-cost housing.

For their part, NGOs and POs should take on the roles of advocate, facilitator, coordinator, trainor and implementor of housing for the poor. They should also take efforts to building their capabilities not only in directly producing houses but also in assessing the needs of the community they serve.

Developers and planners, on the other hand, are called upon to share their technology and expertise to NGOs interested to engage in shelter production programs for the poor.

GROUP 3

Group 3 bats for housing programs that will instill a sense of dignity and improve the quality of life of beneficiaries. This means the provision not only of affordable but decent dwellings but also of opportunities for employment and livelihood generation. These programs should benefit the lowest 30 per cent of the population, especially the homeless, the squatters and low-cost apartment dwellers.

Major issues and problems to be addressed by responsive housing programs include the following:

1. *Financing*

The lowest 30 per cent of the population do not have the means to build their own homes. At the same time, they are generally excluded from government financing programs. Thus, they should be helped to explore alternative sources of financing.

It is also proposed that government increase its budget appropriation for housing.

2. *Government assistance*

Government shelter assistance agencies are asked to decentralized services, simplify processing procedures, cut down on requirements, stay away from "political maneuvering" and to serve the people with greater commitment. The various agencies of government are also advised to work together in the implementation of sound housing policies and programs.

3. *Materials and technology*

The group batted for the promotion and dissemination of appropriate building technologies. Specifically, the use of bamboo, coco lumber and other indigenous materials was cited.

4. *Land*

In view of the shortage of land, land use should be maximized through more medium-rise housing projects. The group also urged the enactment of land reform bills that will make possible the use the enactment of land reform bills that will make possible the use of idle lands for housing and the establishment of a land bank that will buy large parcels of land and sell them to beneficiaries.

5. *Livelihood component*

Poor communities should be helped to set up livelihood projects and acquire the require skills. This should, however, be preceded by studies on potentially viable livelihood projects that will match the skills of the beneficiaries as well as the materials available in the area. The prospects of organizing manufacturing and marketing cooperatives may also be considered.

Specific roles of the various sectors involved in low-cost housing were delineated.

The principal role of NGOs is that of facilitator, originator, and community organizer. They should also take initiatives in terms of capability building and in tapping of funds from both local and foreign sources. NGOs should consider networking with other NGOs for the purpose of sharing experiences and insights, addressing common problems and implementing collaborating projects.

GOS should increasingly move towards deregulation to stimulate private sector initiatives. Government should be more aware of the needs of the housing sector. It is urged to pay more careful attention to feedback — both favorable and unfavorable.

The group would rather that government listen to and act on housing problems than organize "yearly and redundant" housing workshops.

Government is called upon to set aside politics in favor of more efficient public service.

Financing institutions are asked to lower interest rates and simplify loan processing.

On the other hand, the target beneficiaries should organize themselves into strong housing associations and federations to get decision makers to pay attention to their concerns. They should be committed to honor their obligations and responsibilities as home owners or prospective home owners.

III. DAVAO (MINDANAO) CONSULTATION-WORKSHOP

GROUP 1

Low-income housing programs should expedite provision of affordable shelter, particularly for the homeless families. This means meeting the growing demand for housing by people in ways proportionate to their varying levels of affordability.

Expeditious provision of housing is related to the following factors:

1. On the part of the government, a balance between programs and dimensions of the housing problems and demand opportunities. It is also related to the ability of government to create an environment that would facilitate rather than merely regulate housing initiatives. This goal calls for less interference from politicians and bureaucrats.

2. Expansion of the role of NGOs in providing shelter through increased linkages with various housing-related sectors.

3. Stepped-up support by the financing sector to housing programs. This implies increased resource allocation and liberalized terms and conditions.

Group 2 defined the target beneficiaries of housing programs to include the following: (a) homeless families living below the poverty threshold; (b) families enduring inadequate or exploitative rental accommodations; (c) tribal minorities; and (d) others who feel the need for affordable housing.

The critical issues that need to be addressed to implement successful housing programs are: (a) massive poverty; (b) growing urbanization of many areas in Mindanao; (c) inaccessibility to land, finance, technology and other resources; (d) unsustained national housing programs; and (e) ecological imbalances and resource mismanagement.

To counteract massive poverty, there is a need to implement livelihood programs as well as complementary marketing programs. Another potentially viable strategy is to promote cooperativism, not only in food production, credit and marketing but also in manufacturing building inputs. To these ends, various development organizations should work together.

Containing the problem of growing urbanization in the countryside will involve rural industrialization through development of agro-processing enterprises; professionalizing city planning and management; and building the capacity of local government units (LGUs) to generate and control its own revenues.

Access to resources may be improved through various strategies. Financing may be made more available through encouraging greater participation of the private sector in low-income housing provision; decentralization of housing services of government; deregulation or less government; pooling of resources; strengthening of partnership between NGOs and financing institutions; and liberalizing stringent loan requirements.

Improved access to land may result with the implementation of the Urban Land Reform Act.

Access to technology should be improved by encouraging technical experts to share their knowhow and experiences. Inventors and manufacturers of appropriate building materials and technologies should welcome joint venture and other business tie-ups to promote wider use of their products and systems. Meanwhile, the search for alternative building materials and construction systems should be stepped up. Recycling of waste should also be encouraged.

On the other hand, consistent government shelter-related policies will enhance the efficiency and sustainability of the National Shelter Program. The program should be sustained, regardless of changes in government administration, constantly reviewed and upgraded.

The issue of ecological imbalance may be addressed through proper waste disposal management, resource conservation and management, imposition of total log ban and development of alternative, ecologically-safe building materials that are at the same time inexpensive and appropriate.

The specific responsibilities of the various sectors were also prescribed by the group, namely:

NGOs are responsible for developing and strengthening linkages with other NGOs, especially those who are experienced in low-income housing; for self-assessment of their capabilities with respect to organizational size, experience and financial resource base; and to take efforts to professionalize their organization and management. POs were also cited for their advocacy role as pressure groups.

Government is called upon to work closely with NGOs and POs in the spirit of trust and complementarity; to enforce shelter-related laws; and to sustain sound housing policies and programs, such as Batas Pambansa 220, the CMP and the UHLP. Government should also be in a position to provide training on resource management, institution building and building systems and technologies to NGOs and other private developers.

Planners, contractors and developers are expected to produce affordable, safe and good-quality shelter in the quantity that the nation needs. They are urged to move away from profit-orientation, to strictly adhere to approved land development and building plans, and to intensify application of appropriate and tested construction materials and technology.

Financing institutions are urged to relax and simplify their requirements and procedures. Specifically, the reduction of interest rates and requiring alternative forms of collateral to land titles should be studied.

For their part, it is incumbent upon the beneficiaries to develop credit consciousness among themselves, to engage in livelihood and income-generating projects, and to actively participate in community-building activities.

GROUP 2

Group 2 tried to formulate goals and strategies that are measurable, realistic and time-bound.

Low-income housing, as construed by the group, should seek to reduce by half the housing backlog among the bottom 30 per cent of the urban poor population by the Year 2000. The financial goals is to contribute to the full social, economic and spiritual development of man. Focusing on the low-income earners of Mindanao — specifically those earning P3,000-6,000 a month — the housing program is expected to provide decent, affordable dwelling that would help the beneficiaries develop fully not only as a family but as responsible and productive members of the community.

Several critical issues surfaced during the deliberations, including the following: (a) need to complement housing with livelihood support programs: (b) affordability; (c) inculcating responsibility among beneficiaries; (c) more efficient and speedy housing delivery systems; (d) need to centralize government services; (e) inequitable distribution of housing funds among the various regions of the country; (f) shortage of financing; and (g) lack of coordination among government agencies involved in shelter program.

In working out solutions to the above problems and concerns, government and non-government organizations and other sectors have their respective roles to play.

The various GOs involved in housing assistance should work as one in order to deliver the required services in an efficient, fast and decentralized manner. The housing agencies, including financial institutions, are urged to provide more fiscal and related incentives for originators of low-income housing.

NGOs and POs are expected to undertake educational campaigns to inculcate self-reliance and other values among the members of the community; disseminate information on housing programs and opportunities; and to professionalize their ranks for more efficient and ethical service to the target beneficiaries.

Developers and contractors are called upon to devote part of their resources to low-profit social housing.

For their part, the beneficiaries, as the end users, should take more initiatives to help themselves.

V. APPENDICES

PROGRAM

CONSULTATION WORKSHOP ON LOW-INCOME HOUSING

Manila, October 15 - 17, 1991

October 15

8:30 - 10:00	Registration Opening Ceremonies
10:30 - 12:00	Housing the Urban Poor
1:30 - 2:00	Case Story: An NGO's Shelter Program (Hermana Fausta Development Center)
2:00 - 3:00	Case Story: An NGO's Shelter Program (Horacio De La Costa Housing Project)
3:30 - 5:30	Case Story: Low-Cost Housing Project of a Developer

October 16

8:30 - 10:00	Formulating an Effective Low-Income Housing Program: The Key Success Factors
10:30 - 12:00	Disaster Resistant Housing for Low- Income Families
1:30 - 3:00	DSWDs Core Shelter Assistance Project
3:30 - 5:30	Assessing and Monitoring the National Shelter Program: Focus on NGOs

October 17

8:30 - 10:00	Low-Income Housing Technologies, Trends, Materials, Design (Panel Discussion)
10:30 - 12:00	Available Financing Program (Panel Discussion)
1:30 - 3:00	Workshop on Critical Issues on Low-Income Housing
3:30 - 5:30	Plenary and Closing Ceremonies

PROGRAM

CONSULTATION WORKSHOP ON LOW-INCOME HOUSING

Cebu, November 18 -20, 1991

November 18

8:00 - 9:00	Registration
9:00 - 9:30	Opening Ceremonies
9:30 - 9:45	Levelling of Expectations
10:00 - 12:00	Development of Housing for Low-Income People
1:00 - 2:30	Formulating an Effective Low-Income Housing Program: The Key Success Factors
2:30 - 3:45	Case Stories: NGO Shelter Programs (Freedom to Build)
4:00 - 6:00	Case Stories: NGO Shelter Programs (Cooperative Housing Foundation/ Negros Economic Dev't. Foundation Pagtambayayong Foundation)

November 19

8:00 - 9:45	Disaster Resistant Housing for Low-Income Families
10:00 - 12:00	Case Story on Disaster Resistant Housing
1:00 - 2:30	Livelihood and Low-Cost Housing
2:30 - 3:45	Panel Discussion on Low-Income Housing Technologies, Trends, Materials, Design

4:00 - 6:00	Panel Discussion on Low-Income Housing Technologies, Trends, Materials, Design

November 20

8:00 - 9:45	Panel Discussion on Available Financing Programs for Low-Income Housing
10:00 - 3:45	Workshop on Critical Issues on Low-Income Housing
4:00 - 6:00	Plenary and Closing Ceremonies

PROGRAM

CONSULTATION WORKSHOP ON LOW-INCOME HOUSING DAVAO

Davao, December 18 - 20, 1991

December 18

8:00 - 9:00	Registration
9:00 - 9:30	Opening Ceremonies
9:30 - 9:45	Briefing on Workshop Procedures
10:00 - 12:00	Development of Housing for Low Income People
1:00 - 3:00	Case Stories: NGO Shelter Programs (DIHO/NHA Projects)
3:15 - 4:15	Case Stories: NGO Shelter Programs (Freedom to Build)
4:15 - 5:00	Formulating Low-Income Housing Programs: Key Success Factors

December 19

8:00 - 10:30	Disaster Resistant Housing for Low-Income Families
10:00 - 12:00	Livelihood and Low-Cost Housing
1:00 - 3:00	Panel Discussion on Low-Income Housing Technologies, Trends, Materials, Design

3:15 - 5:00	Panel Discussion on Low-Income Housing Technologies, Trends, Materials, Design (cont'd)

December 20

8:00 - 10:30	Panel Discussion on Available Financing Programs for Low-Income Housing
10:45 - 4:00	Workshop: Critical Issues on Low-Income Housing
4:00 - 5:00	Plenary and Closing Ceremonies

Appendix A1

DIRECTORY OF PARTICIPANTS
CONSULTATION WORKSHOP ON LOW-INCOME HOUSING

Manila, October 15-17, 1991

NON-GOVERNMENT ORGANIZATIONS (NGOs)

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Leticia Tojos

Appendix A2

DIRECTORY OF PARTICIPANTS

CONSULTATION WORKSHOP ON LOW-INCOME HOUSING

Cebu City, November 18-20, 1991

NON-GOVERNMENT ORGANIZATIONS (NGOS)

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Bohol Integrated Development Foundation, Inc. — *Rev. Fr. Romeo Dompor*
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Catholic Social Services Center
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Norkis Group Management Systems, Inc. — *Carlito Lebumfacil*
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City Hall, City of Tagbilaran — *Hon. Jose Torralba*
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Appendix A3

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Davao City, December 18-20, 1991

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