

Political context

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The city must belong to everybody!

The main issue of this submission is that by formulating statements about the proposed resettlement of families from the Tondo Foreshore, we are providing the possibility of integration of the resettled families into the life of Manila.

A double ecological segregation

Up to now, there has been a double ecological segregation in Manila reflecting large contradictions in the economic and political system. The segregation has been not only in terms of a physical ecology, but also in human ecology. Environmental and life development possibilities have been stunted.

Ecological integration

We understand that an ecological integration should be possible by enabling effective participation in decision-making at all levels in reaching agreements about development processes in Manila and in the Philippines.

No ecological integration will be produced if problems such as housing are continually isolated, because housing processes are just one set of manifestations of the larger system.

Participation

This entry proposes that a real commitment should be made at all decision levels in working out together a mechanism of participation.

To enable this participation to occur in the complex housing process, we as architects present a method and a set of models which can facilitate decision making by several decision levels in actions concerning the resettled families, their dwellings and dwelling environments.

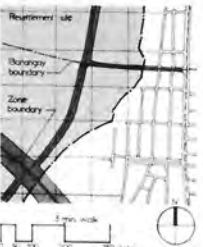
No solution, but simulation of a method

We do not propose solutions. We propose a method in which it is possible to find solutions and a simulation of that method as it might be used by real people in real situations of argumentation in Tondo.



Resettlement site

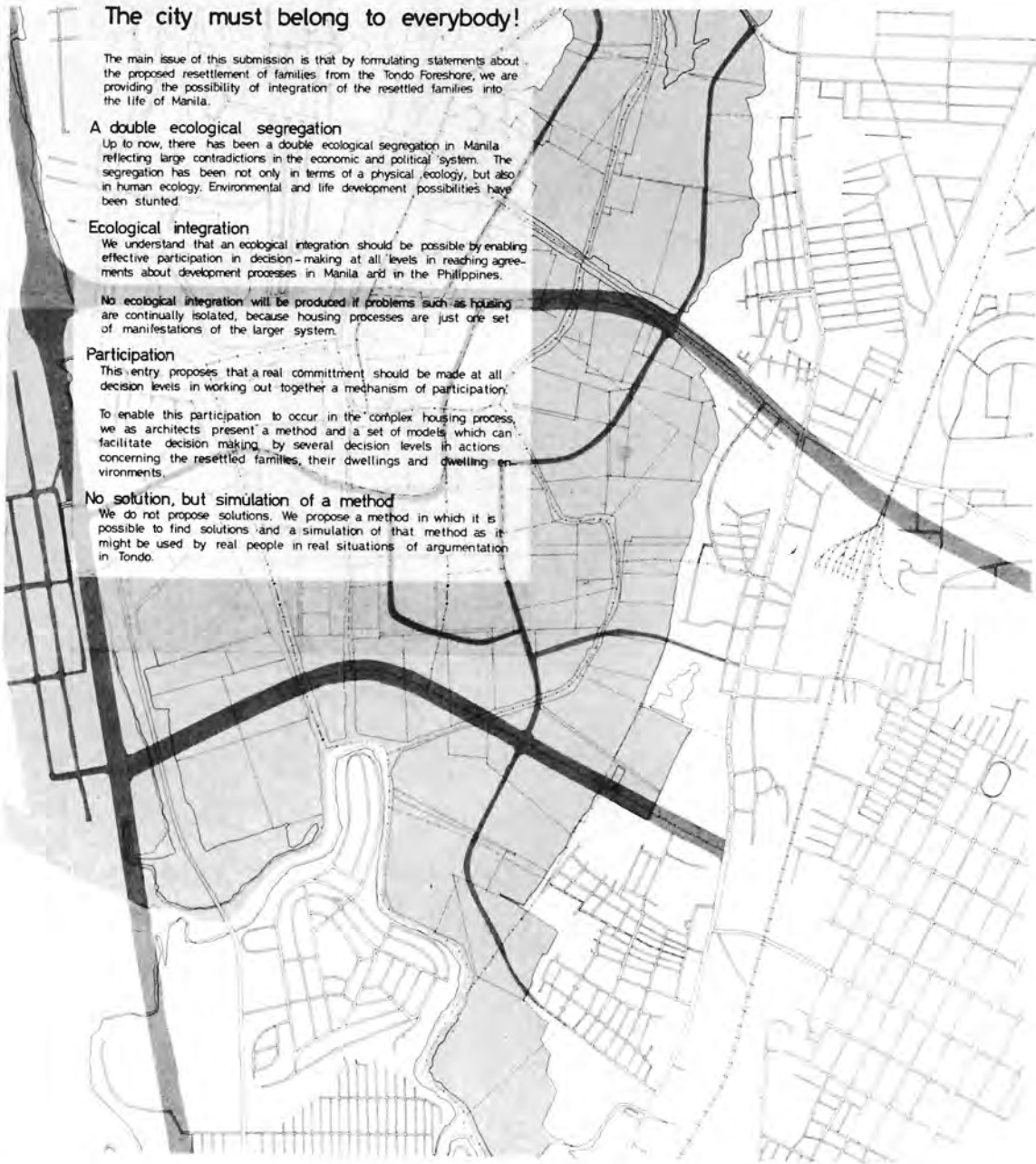
The resettlement site is within the metropolitan area and within the urban agglomeration. It is located in the Tondo Foreshore, an area which offers greater potential for employment opportunities and social ecological integration into the life of Manila.



Political edges

The concept of ecological integration requires a response to the question of edges. What is the edge condition between the new environment and existing urban political units?

We propose that decision-making boundaries on the edge of the resettlement site should be located in the urban agglomeration, creating an interface and setting the basis for an ongoing socio-political communication about human processes.



The structure of agreements

In a complex political and technical situation, the structure of which agreements can be reached, and among all levels must be clarified. The decision charts on page 10 of the 2 sheets are designed to be flexible in structure, but are not intended to propose solutions in any single way. We expect similar situations in other cities, and we are interested in your views on this matter. We are particularly interested in the way you deal with the complex situation of the Tondo Foreshore.

There are various levels of decision-making in the Tondo Foreshore. The decision charts are presented in the following way:

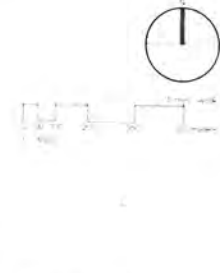
- Chart 1: The overall structure of the Tondo Foreshore.
- Chart 2: The structure of the resettlement site.
- Chart 3: The structure of the urban agglomeration.
- Chart 4: The structure of the political units.

which levels system for argumentation can only be made on a case-by-case basis. We propose a simulation of that method as it might be used by real people in real situations of argumentation in Tondo.

Separation of responsibilities

We have suggested that the decision-making process should be separated into several levels of responsibility. This is not a proposal for a specific structure of decision-making, but a simulation of that method as it might be used by real people in real situations of argumentation in Tondo.

We propose that the structure of the decision-making process should be flexible in structure, but are not intended to propose solutions in any single way. We expect similar situations in other cities, and we are interested in your views on this matter.



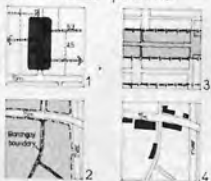
Physical context

2

Illustration/analysis of an urban tissue

- Sector 1 Main circulation network of cars
- Sector 2 Primary organic waste collection network
- Sector 3 North-south axis
- Sector 4 Application of the tissue model

Some tissue patterns



- 1 Berangry community facilities are located along the main road. One way 4.5m long car roads link with the 8.5m network. 4.5m and smaller pedestrian ways connect with streets and together integrate the fish group and built-up areas and facilities with the Berangry and Zone centers.
- 2 Berangry boundaries occur on larger roads, on 'green' edges, or where large north-south functions break the ordinary street. Park boundaries occur along the utility corridors, except at Berangry nodes.
- 3 Along the utility corridors, except at Berangry nodes.
- 4 North-south dwelling supports (see sheet 1) and larger commercial functions are situated on the edges of Berangry on main roads.

Functions in a tissue

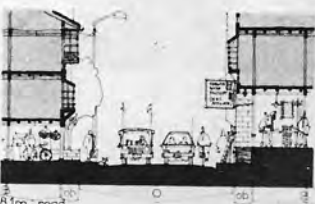
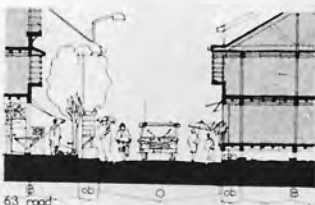
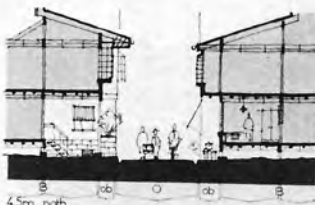
- 1 Top group open space
- 2 Bakery shop
- 3 Park center
- 4 Playroom
- 5 Thematic dwellings
- 6 Community dwellings
- 7 Elementary school
- 8 High school
- 9 Church
- 10 City market
- 11 Berangry center
- 12 Zone center
- 13 Commercial area
- 14 Office
- 15 Hospital
- 16 Police station
- 17 City hall

Densities

Densities imply a level of standard and quality. Densities are statements of social values in new standards, and should finally be established in a thorough process of experimentation in reality. These models proposed here enable discussion about densities and standards to occur in a pragmatic way among many decision layers. For this submission, the suggested density of about 180 dwelling units per hectare was used.

Circulation path sections

Other than the green road network, we use 3 circulation path types: a 4.5m system for pedestrian and bicycle circulation and emergency vehicles, a 6.5m system for one-way automobile circulation, pedestrians and bicycles, and an 8.5m system for 2-way automobile circulation. Buses operate on 15m roads in larger areas. Heavy traffic operates on city roads designated for vehicular traffic.



Edges

Edges have many edges, both physical and social. Edges can be hard and precise or can have margins of overlap, or they can be the physical edges we're describing. More, some important physical edge conditions and discussion.

The built zones on riverside. The built zones on fish-pond tree lines which we propose to construct.

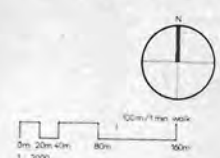
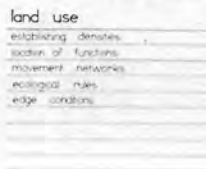
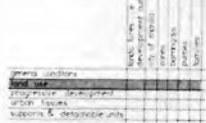
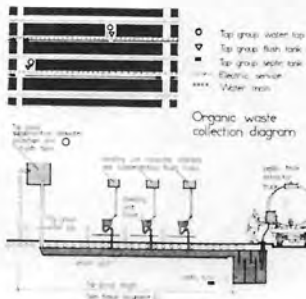
The method proposed here makes it possible for the question of edges to be already contained in terms of responsibility. Agreements can be reached about which decision units should care for which edge conditions.



Energy & waste systems

Four concepts

1. Recognize four important concepts relating to the issues of waste management and energy delivery as they relate to dwelling environments.
2. Waste, both organic and non-organic, should be managed within their spheres. This means separating and secondary uses.
3. Partial decentralization of waste management processes is feasible and useful in this context.
4. Available research should be applied, rather than searching for new concepts systems.
5. It is important now to have systems and models which can help in decision-making about these functions.



Progressive development

3

Process of cultivation

In the terms of this selection, progressive development refers to the process of cultivation in which both the sphere of individuals and the sphere of various community levels undergo a series of changes in terms of both quality and quantity, in compliance with social processes.

Progressive development starts at home

Progressive development is an individual family sphere in a prerequisite to achieve progressive development at the community level. No contribution to the community level will occur if contributions of the individual level is denied.

Progressive development can really only happen if individuals and the communities in which they live can have a dialogue. It also requires that rules be discussed and agreed upon, defining the right-of-way of both families and the various community decision levels.

Progressive development, or redevelopment always happens anyway. It is never ending process.

Sometimes it happens in spite of attempts by some level of community to prevent it. Sometimes it is encouraged on a certain way. Sometimes progressive development ignores the wishes of certain groups.

A good process

The point is that if progressive development is to be a "good" process, it must be possible that justice is done to all parties involved in gaining the desired results. It means that agreements must be reached, rules must be set, and responsibilities clarified.

Two spheres of action

We focus on progressive development in two spheres: the individual or extended family and the several community levels. Some of the discussion is shared at the bottom of each of these 3 sheets.

There is a progressive development of a dwelling. There is a progressive development of an ordinary urban tissue. There is a clear relationship between these, since dwelling make a city. In sheet 1 we show progressive development as it originates and influences a starting point, called a SUPPORT STRUCTURE.

In this sheet we show progressive development as it might occur at the level of an urban tissue, in the competition site.

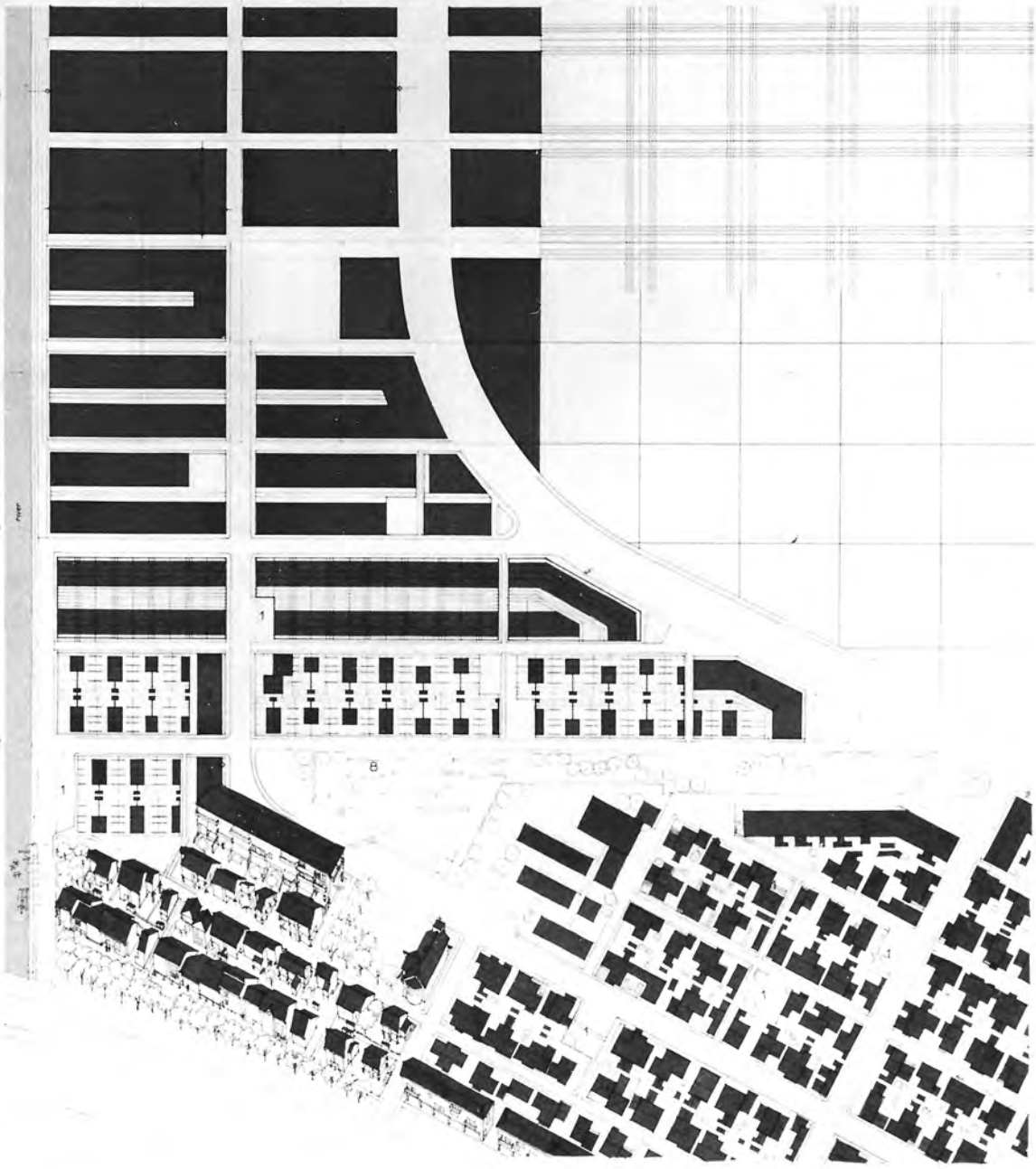
In sheet 3 we explore a method that can facilitate a good process of progressive development.

Agreements must first be reached concerning thematic density of dwellings, relationship of different built area with open space, circulation network, general land use.

Agreements must also be reached with community levels about utility standard and consequent networks, specific location of major community functions and spaces, location and dimension of thematic buildings, including choice of plot areas which are available to families.

Agreements must also be made with individual families or groups of families about plot area, support structure type and location of its support to the plot (see sheet 2).

This is a simulation of a progressive development in the competition site. A various situation is shown at a smaller scale in sheet 2. The density achieved in this simulation is 497 of the 3 hectare competition Barangay site.



Reoriented production processes

A reoriented plywood industry

Philippine industry should, in principle, be set free to solve the Philippine housing problem. In particular the Philippine plywood industrial production capability should be at least partially reoriented to produce material for local consumption at an affordable price and increasing full grade.

Up to now the plywood industry is only incidentally contributing to the solution of the housing problem in the country. Its contribution is largely made by obtaining foreign exchange for the country, through exporting a variety of high grade plywoods at world market prices.

Local market

Reorientation of the plywood industry means that production of a certain user grade, wet or semi-wet plywoods must be undertaken to supply the local market, most critically the low income market.

Because this means an alteration in the foreign exchange component of the plywood industry the national government may be required to support the reorientation by subsidy of some kind.

A reoriented roofing materials production

Philippine industry does up to now but produce an expensive roofing material with satisfactory performance compared to other use. Wet roofing material used in urban situations is imported as high foreign value for example corrugated galvanized iron.

There is a critical need for low cost roofing materials, using indigenous materials. Philippine industry should reorient its processes to produce these materials.

Existing research

In the Philippines, particularly, and in several other countries, there is research going on into the application of local fibers and fillers in roofing material using either local or available fibers or small quantities of imported binders or resins.

A reoriented small scale industrial capability

Philippine village industries currently can produce a wide variety of expensive and well known products such as woven goods and hand-crafted items, well known, woven and knitted. The Department of Small Industries of Community Development has programs to stimulate the development of village industries in rural and urban areas.

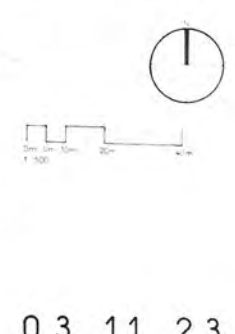
DLGCD initiatives

If the DLGCD programs are reoriented to allocate the investment of small scale industrial capital in producing building elements, there can be a significant step forward to solving the housing problem.

Support and detachable unit production

These small scale industries can contribute elements which are rationalized to a certain extent. In a staged rationalization process, these elements can be built on the basis of "support" elements, or in the nature of "detachable" elements (see sheets 4 and 5).

There is no intention to give a simple recipe about the eventual size of such a large production process. This can best be determined in a Philippine social process.



Dwellings

5

The concept of supports

A dwelling always exists in 2 spheres, the sphere of the person or unit the sphere of the individual. We must first recognize these 2 spheres, each given their possibilities for action, as well as responsibilities. The distribution of responsibilities should be done on the basis of competence.

Supports

A support structure refers legally speaking to the "responsibility" of a dwelling. It is designed in such a way that within it the occupant can decide independently about the layout and the equipment of his dwelling.

Detachable units

Detachable units are those elements legally referred to as "modules", designed in such a way that by means of these elements the occupant can decide independently about the layout and the equipment of his dwelling within the support structure.

Distinction in right of way

The distinction between support and detachable unit is a distinction in right of way. The

distinction of what belongs to the support structure and what belongs to the detachable unit therefore not only is assessed on technical grounds but on the political level. The right of way of the individual, i.e. on the amount of freedom the occupant can exercise, in each design this situation must be explicitly stated.

The distinction is not one of a system building which means rough 200 finish building strictly apart. It is first a concept concerned with freedom of individual action in the dwelling process.

Freedom of individual action

The distinction is not first a technical one. It is first a concept concerned with freedom of individual action in the dwelling process.

Supports reflect community values

Supports reflect community values in regulations; not just one level of community but all

one level, for example the national government supports its values in the support in certain ways, as well as the barangays involved.

Supports are not neutral

Supports are not neutral, but express values and by setting rules on by actual physical structure guide occupant activities and the progressive development of the dwelling process.

A support can be under the responsibility of some extended level of community, over some period of time.

By a support can be held under community responsibility only during construction, after which it reverts to the right of way of the occupant.

If a support is under community control, then individual occupants cannot tear it down, but can do some things according to agreed upon rules.

In a progressive development, the added structure could be defined as supports if the community has some role in financing and/or action or structure.

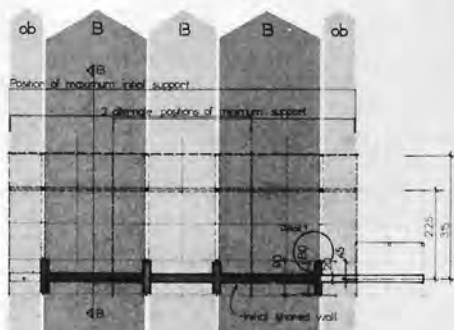
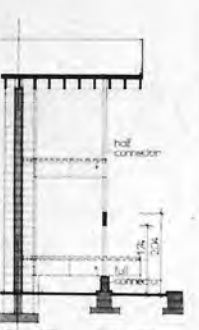
In a progressive development the added structure would be defined as "detachable element" if the community is not involved.

The parts of a support include the individual dwelling territory can revert to the family and therefore become "detachable" by definition.

The parts of a support including another dwelling territory or a common space can revert to the total responsibility of the individual, but rules about use of these "space" can be set to define the extent to which individual occupants can use or change the support.

(Supports are also considered as a relevant concept in the creation of community facility structures and organizations, as a means of distributing responsibility among decision levels.)

Illustration of a support and Dwelling plot zoning



The initial support

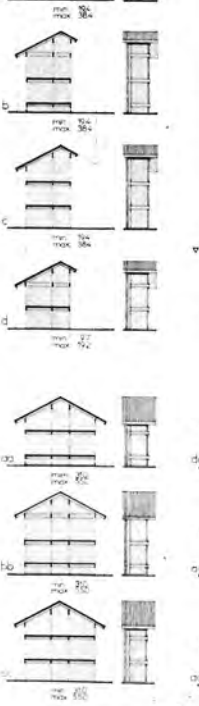
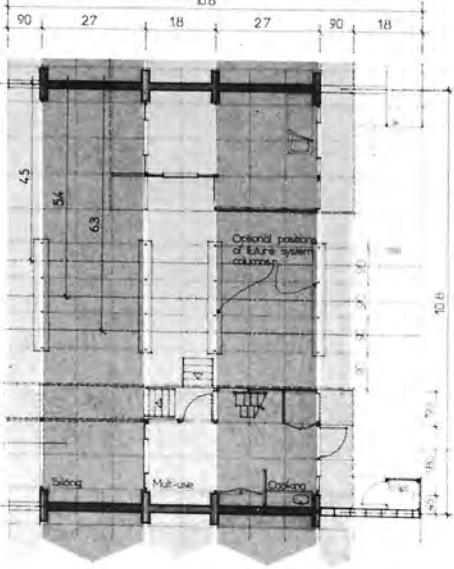
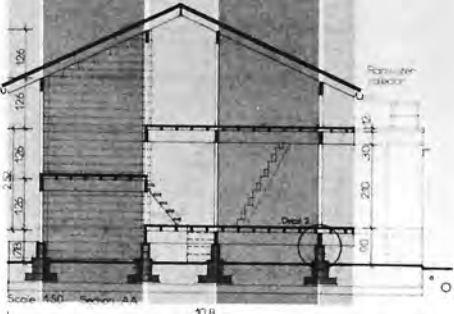
Given a target population of very low income, applying family size and expansion for use of a dwelling plot, we propose that an initial support should be available in which families can live in a low cost, complete, if temporary, dwelling unit.

The initial support is a minimum construction of roof, foundation, stairs, shared walls, a dry floor, and toilet, built on a shared wall, plus custom fittings for building extension, and rules for extension open space and building height.

The target population families can be identified. They have a range of incomes, sizes and expectations. We start with a series of initial supports, and open spaces also for plot width (free or depth), before construction starts.

Combinations

Four initial supports are outlined, this is illustrated here fully as it is the four options can occur at the front of the plot. They combine, including additional solutions, proposed in 16. show outline sections of 3 full tiers.



The support framing system

The support framing system as described here is proposed for the following reasons. As a planning and building technology, it can help with the design and construction of the initial support, and in the subsequent progressive development of the dwelling.

By providing a set of components which are light weight and which can be easily understood and used by individual users, workers and participants in organized self-help building programs.

By encouraging decision-making and participation by the user in the planning of dwellings, the alternatives with building methods devised to reinforce and clarify the planning process and to rationalize the relationship of support structure design and planning to the process of progressive development.

By strengthening and contributing to the development of regional housing and building resources, through technology which attracts the local builder and new forms of enterprise to the inner-urban sector of the housing market and encourage initiatives toward the organization of local elements of supply and production.

Framing system components

The framing system consists of a post and beam construction frame, whose parts are prefabricated from plywood or solid timber and steel. This frame is designed to accept a variety of existing elements. The main structural beam lengths which are derived from room dimensions found to be most appropriate for the Philippine situation, where multiple-use spaces is often most useful. Frame components are uniform in sectional detail and designed to be joined together in one uniform method throughout the building. The special characteristics of this joining method impart stiffness and strength to the frame and facilitate progressive development of the initial support.

The heart of the framing system is a pair of connector units which lock together on a spindle extending from the upper end of the post. The lower portion of the post is hollow, allowing it to receive a spindle from a foundation or a lower post in the case of a 2 or 3 level structure.

The structural advantage of the post and beam system is that it transfers stresses from building loads through all the joints in the 3 axial directions, providing moment continuity through the axial interaction and locking the whole frame of the building together into one structural unit. This provides stiffness during erection of the frame, makes it self-aligning and self-correcting during assembly, and contributes significantly to the ultimate strength and stiffness of the structure as a unit when the fill or wall panels are installed. The system is strong and stable, and can withstand the forces of a monsoon season.

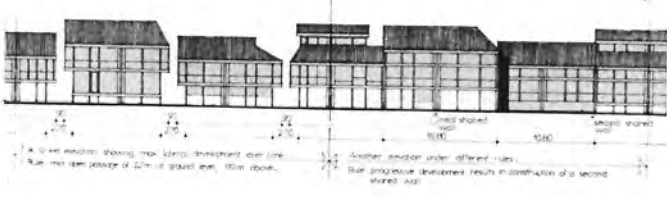
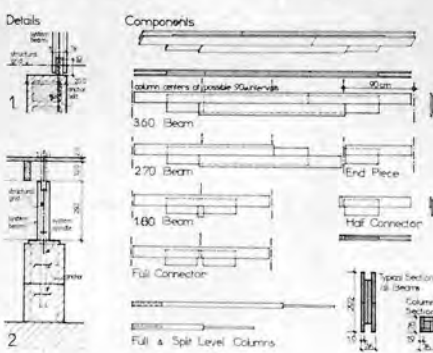
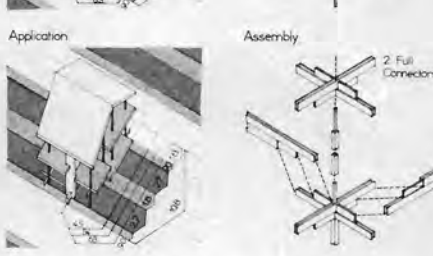
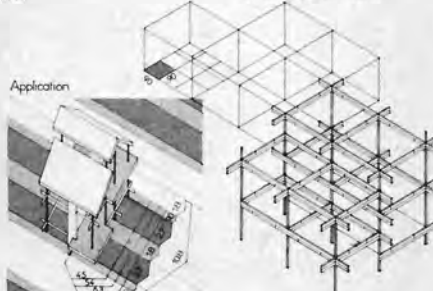
All interior parts in a support will receive 2 full connector units, with an exterior post may receive 1 full connector, enabling extension in either direction. 2 full connectors, providing an extension of the system, or a combination of one full and one half connector.

These connectors can thus be used to encourage progressive development to occur in certain directions with particular progress directions of ground to floor and floor to floor (see drawings on the left).

The framing system is an actual building system, tested and in actual use in building programs in Africa, the Caribbean & the United States.

A choice of components prefabricated from plywood or from solid timber will depend on the user, structural quality & dimensional precision of a post. A choice will imply an adjustment of the dimensional dimension of columns & beams. Detailed studies involving possible material combinations, and cost of various choices would be required in order to make an appropriate selection for the construction system.

3 dimensional matrix



basic building development	barangays	zones	families
supports & detachable units			

supports & detachable units

- preparation of support modules
- selection of models & variants and evolution in selected issues
- coordination of support structures
- monitoring of site elements
- maintenance of supports
- maintenance of site elements

