

## A MORE COMPREHENSIVE CONCEPT FOR URBAN RESETTLEMENT SCHEMES

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Although this scheme was prepared for the competition site in Manila, it is based on the study of urban squatter slums in India. The solution presented attempts to resolve three basic issues that are common to all such housing in the developing countries. They are:

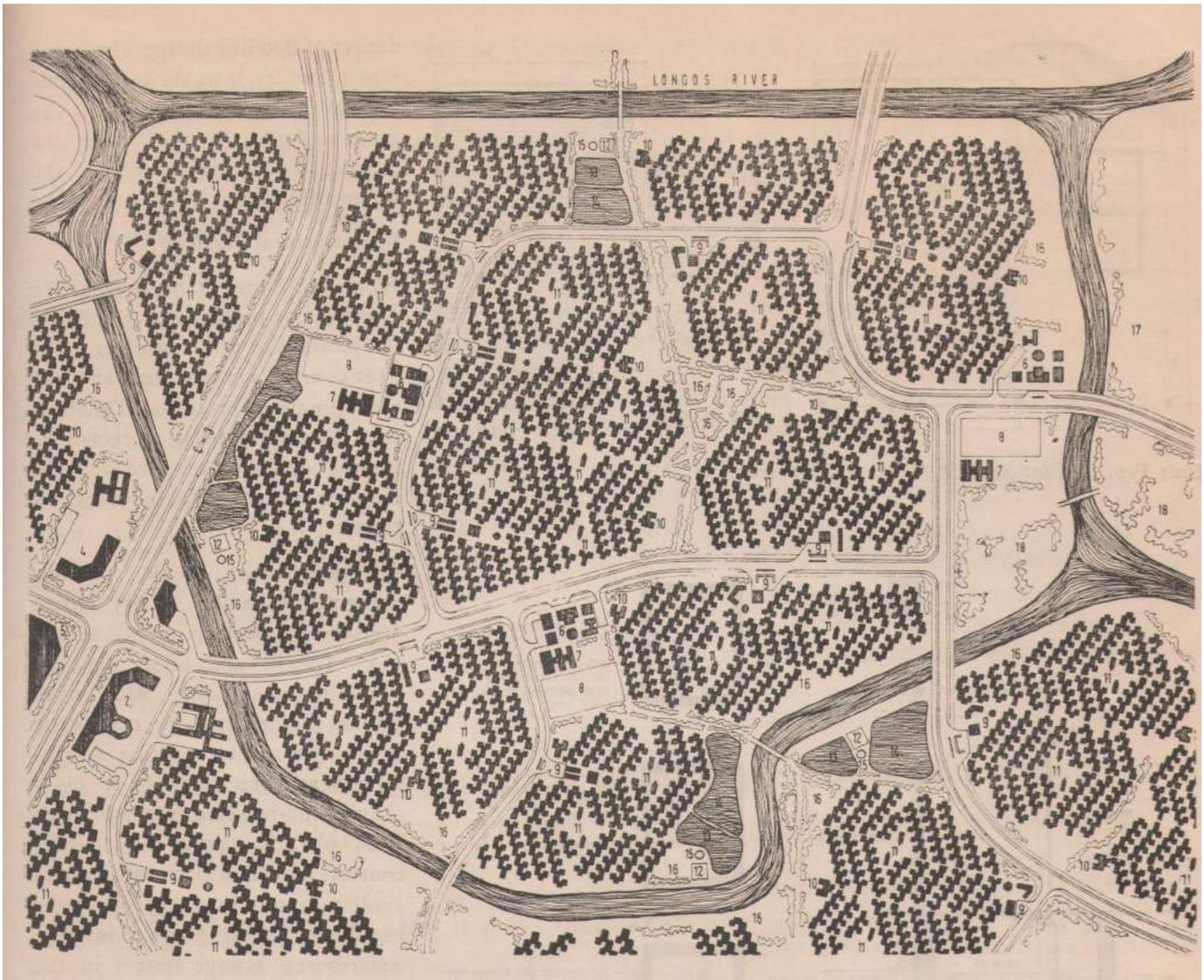
- a. *The Problems of Spatial Organisation*: providing housing sensitive to the felt needs of the people and ensuring the necessary environmental comforts.
- b. *Management of Infrastructural Services*: doing without the prohibitive capital outlay required for centralised systems.

c. *The Problem of Finance Management*: maximising the use of existing resources and tapping new ones.

### Spatial Organisation

The government of the Philippines had decided to shift the squatters of Tondo Foreshoreland to a newly reclaimed area 3 km away. This area, being within the city, close to the existing work places of the inhabitants and adjacent to a proposed industrial estate, has the potential for providing the people with shelter without disrupting their present means of livelihood.

The scheme combines the benefits of group housing (proper environmental control) with those of plotted development (use of individual resourcefulness), and is conceived of as plots grouped around open plazas where all levels of community activity can take place. The structure of open spaces so created reduces solar heat gain by mutual shading of covered and open spaces, permits optimum windflow through each house, and at the same time allows piped services to be installed at later stages of development without disturbing the constructions.



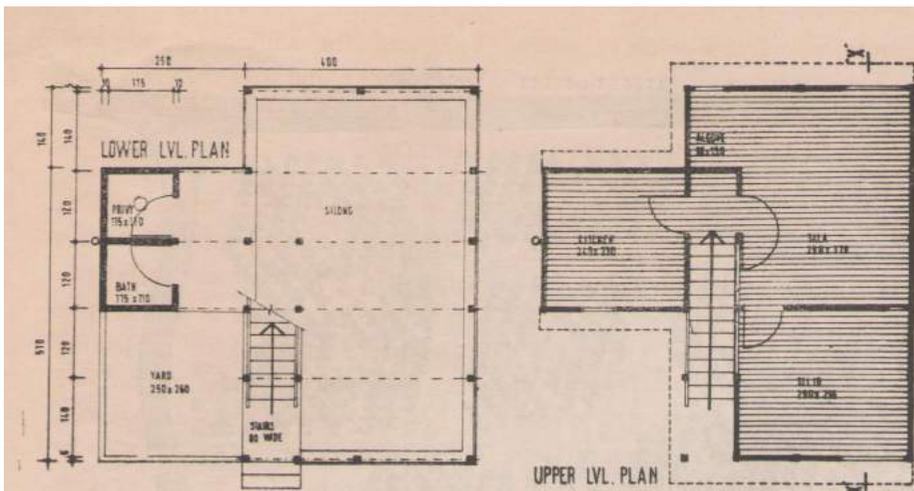
1. Church
2. New Town Administration
3. Market
4. Police Headquarters
5. Fire Station
6. Zone Centre
7. High School
8. Football Field
9. Barangay Centre
10. Elementary School
11. Nursery School
12. Digester
13. Settling Pond
14. Fish Pond
15. Gas Holder
16. Animal Farm
17. General Hospital
18. New Town Park

The overall planning proposals are based not on a rigid zoning of areas according to activities such as working, living, recreation etc., but on the traditional pattern where all such activities take place in an integrated manner. Space is provided in the house and around it for living and working and for keeping poultry and pigs as well.

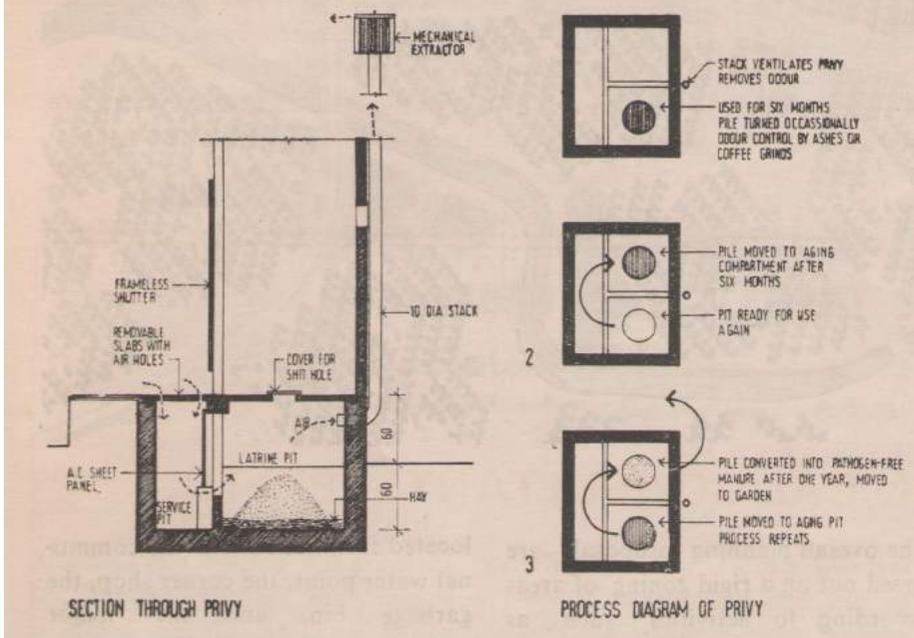
The house group plaza, from which individual houses are approached and where children can play within sight of mothers, is adjacent to a larger plaza. A series of such plazas link up to form the pedestrian street at the end of which are

located facilities such as the communal water point, the corner shop, the garbage bin, and the major pedestrian path which also serves as emergency vehicular access.

The basketball court together with the nursery school is the focus of the smallest community unit, the Purok (125 families). Four or five Puroks together make up the Barangay ( -'00 family unit) at the centre of which is located a shopping street, a community hall, a chapel and a primary school. The community farm where the pigs would be moved ultimately is immediately adjacent to each Barangay.



Unit Type A. Plot Area 38.75 sq. m. Plot Area: 32.25 sq. m.



Other community facilities like health clinics, major shopping areas, high schools, etc. have been distributed evenly over the entire housing area. The layout system permits different densities, from 60 to 100 families per hectare, by combining two sizes of plots (38.5 sq.M. and 51 sq.M.) in different proportions.

The house unit lends itself to a

number of construction possibilities ranging from bamboo and thatch to concrete roof and hollow block walls. In line with the Philippino tradition, the living areas have been raised on stilts, the lower floor being used for keeping animals and for setting up workshops, etc. When the land gets consolidated and the danger of flooding during the rainy season

recedes, it would be possible to add a complete unit on the ground floor. At this stage the animals would be moved to the community farm.

### Infrastructural Services

**Waste and Water Management:** One of the major problems in Manila is the shortage of drinking water. The river courses are polluted and the subsoil water is brackish. Desalination of sea-water being uneconomic, it was decided to reduce the requirement of potable water by recycling it.

The government would provide, along with each plot, a dry latrine (aerobic composting privy) service box. The fly and odour nuisance normally associated with such latrines is eliminated by completely enclosing it and by ensuring mechanical ventilation through it by a simple wind-powered ventilator made from old tin cans. This toilet converts human wastes into useful garden manure in about one year and makes it unnecessary to install a water-borne sewage system in the Initial stages. While communal water points would suffice in the beginning, each house could be supplied water as the funds become available. At that time the dry latrine would easily be converted into a water closet and one of the underground pits of the service box would collect 'gray' water from the laundry and bath. With the aid of a hand pump, this water would be used for flushing the toilet.

The wastes from the houses and the animal farm would flow into a linear bio-gas digester. The quantity of gas generated would not be sufficient for meeting the energy requirements of all houses and therefore it is proposed to sell it to the nearby

industries. The effluent from the gas-digester will be purified through a series of ponds, the last one being an artificially aerated pond with fish and ducks in it. This process eliminates all bacteria and the water is once again available for domestic use after simple filtration. The fish and ducks from these ponds become an important food supplement for the community.

This cycle would reduce the requirement of water from the city supply to only 20% of the norm, without in any way affecting the availability of water in the house.

### **Finance Management**

The number of families that need proper housing is so large that to provide even the cheapest house for all of them is beyond the capacity of any government. The situation

viewed in terms of a large number of small private investments. The scheme therefore endeavours to create a situation where the house owners, both individually and collectively, are centrally involved in creating their own environment.

The house can be built with practically no initial investment once the plot and the service box are provided. The construction system suggested makes it possible for homeowners to add built spaces and upgrade finishes according to their needs and resources and without making the initial investment redundant.

The need for providing piped services to each house and the enormous costs of it have been eliminated by the inexpensive service box on each plot. Provision

and water lines along with the recycling ponds and bio-gas digestors at a later stage.

It is proposed that house owners raise loans from conventional sources using the plot itself as collateral. To reduce the heavy administrative expenditure involved in processing such loans and in order to provide a flexible approach to debt repayment, collective loans should be given to organised communities. Co-operatives should be formed to run material banks in the community.

In overall economic terms the housing design is seen as a process where the participation of the inhabitants can be maximised by allowing them to build at their own pace. The authorities can concentrate on ensuring a continuous building activity.