

Republika ng Pilipinas  
(Republic of the Philippines)  
MINISTRI NG EDUKASYON AT KULTURA  
(MINISTRY OF EDUCATION AND CULTURE)  
Maynila

January 3, 1980

MEMORANDUM  
No 1, s 1980

FILIPINO TECHNOLOGY IN THE '80S

To Bureau Directors  
Regional Directors  
Presidents, State Colleges and Universities  
Heads of Private Schools, Colleges  
and Universities

1 The Ministry of Education and Culture (MEC) is an agency-participant to the multi-disciplinary project of the United Architects of the Philippines (UAP) approved by the First Lady and Minister of Human Settlements, which is entitled "Filipino Technology in the '80s "

2 As approved by the Project Executive Committee, the participation of the MEC will have two parts

a Student Design Competition which will be conducted nationwide in the following three (3) categories

(1) School Building Design

- Elementary
- Secondary (academic-vocational)
- College of Education

(2) Residential Design (cluster type)

(3) Community Design

Inclosed are background information and details for each category and guidelines for the contest

b Symposia which will be held on January 14, 16, and 18, 1980 on the following topics

January 14 - The Traditional Concepts of Filipino Architecture

January 16 - The Transitional Concepts of Filipino Architecture

January 18 - The Contemporary Concepts of Filipino  
Architecture

Symposia speakers are noted Filipino architects  
The venue will be the National Library Auditorium  
in Manila

3 Students of architecture in Metro Manila are enjoined to  
attend the symposia

4 It is desired that immediate dissemination of this MFC  
Memorandum be made to all public and private schools offering courses  
in architecture

(SGD ) ONOFRE D CORPUZ  
Minister of Education and Culture

Incl

As stated

Reference

N o n e

Allotment 1-3-4--(D O 1-76)

~~To be indicated in the Perpetual Index  
under the following subjects~~

CONTESTS	SCHOOLS
Course of Stud , COLLEGIATE	SOCIETY or ASSOCIATIONS
PROJECTS	STUDENTS

~~(Last Memorandum for 1970 MFC Memorandum No 315, s 1979)~~

DESIGN COMPETITION  
(MEC/UAP)

PROJECT TITLE    Campus Design for Elementary, High School and  
                         College of Education

1    BACKGROUND    On School Campus

1.01 The Metropolitan Manila's universities, colleges and other large schools are at present heavily concentrated in Manila's central built-up district (CDB) This small district, encompassing an approximately two kilometer radius at the center of the city, is now a densely populated area and where heavy residential-commercial and institutional area mixes with each other

1.02 In addition to this, only few of these universities-colleges-schools have available spaces within to accommodate the construction of additional structures to cope up with the increasing number and needs of its studentry Thus these educational institutions are now generally very small compared to their student population In this regard, almost all MMA PHE schools fall short of the MEC standard of one hectare campus land area per 1000 students

2.    AIM

2.01 To be able to design a prototypical educational institution that will house an elementary, high school and a college of education and could either be built in an urban or rural area

2.02 To be able to arrive with a campus design that has a high accommodating density/area and still have enough open spaces for future expansion

2.03 To be able to design structures with an architectural character that can be called Filipino

3    CAMPUS AND AREA DISTRIBUTION

1.0 Academic Building	25%
2.0 Non-Academic Facilities	25%
3.0 General Support Facilities	25%
4.0 Open Spaces	25%
Campus Land Area	100%

1.0 ACADEMIC BUILDING 25%

1.01 Learning Net Area Standard	43%
1.1.01 Lecture Rooms	1.5 m <sup>2</sup> / st
1.1.02 Laboratory Rooms	3.0 m <sup>2</sup> / st.

1.2 ACADEMIC SUPPORT 10%

1.2.01 Library	.2 m <sup>2</sup> / st
1.2.02 Faculty Room	4.0 m <sup>2</sup> / st
1.2.03 Administration	0.5 m <sup>2</sup> / st.
1.2.04 Conference/Lecture	10 m <sup>2</sup> / st

1.3 General Support Facilities 5%

1.3.01 Canteen	20 m <sup>2</sup> / st
1.3.02 Utilities (Elect/ Mech/etc.)	0.25 m <sup>2</sup> / st.

1.4	Circulatory Area		20%
1.4 01	Elevator, Corridor, stairs	9 m <sup>2</sup> /st	
1 5	Comfort Room		20%
1.5.01	Male & Female Janitor	09 m <sup>2</sup> /st	
1 6	Open Space		20%
1 6 01	<u>25% of 1.10 to 1 5</u>		
	AREA OF ACADEMIC BUILDING		100%
2.0	Non-Academic Facilities		25%
2.01	Gymnasium		
2.02	Swimming Pool		
2.03	Grandstand/Parade Ground		
2.04	Chapel (Religious structure)		
2 05	Inter-Faculty Research Facilities		
2 06	Central Administration		
2.07	Lecture Hall/Auditorium		
2 08	Central Library/Archives		
2 09	Museum		
2 10	Guest House, Canteen, Concessions		
3 0	General Support Facilities		25%
3.01	Circulatory Movements		
3 02	Driveways		
3 03	Parking Lots	Nat Bldg Cods Requirement 1 parking - 22 m <sup>2</sup> / slot	
3 03A	Elementary	1 slot 4 classrooms	
3 03B	High School	1 slot 20 seats	
3 03C	College	1 slot 12 students	
3 04	3.04 Service Facilities		
3.04A	Power		
3 04B	Water		
3 04C	Air Conditioning (Mechanical)		
3 04D	Maintenance (Repair)		
4.0	Open Space		25%
4.01	Expansion Area		
4 02	Greeneries & Landscaping		
4.03	<u>Easements, allowance along the walls</u>		
	CAMPUS LAND AREA		100%

4.0 BASIC DESIGN CRITERIA The following are some basic elements that could serve as guidelines in designing educational institution

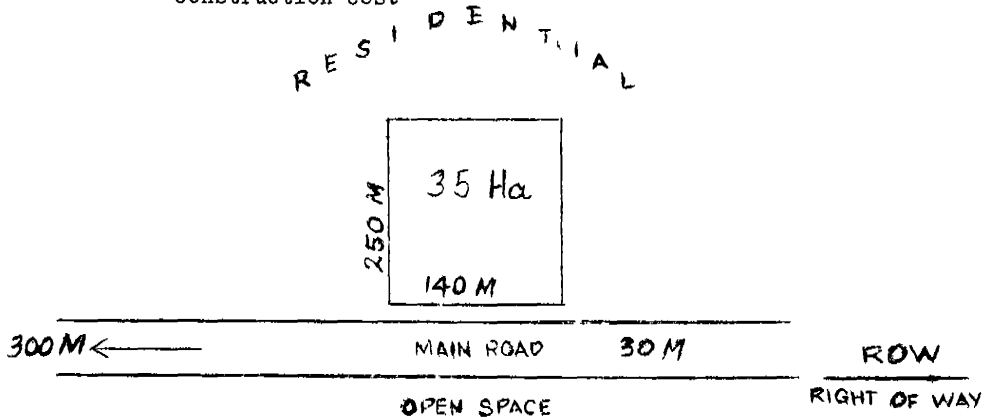
- 4.01 Architectural Give more emphasis on density/area and special requirements It also includes multi-functional areas for rest, study, social, recreational services and communication
- 4.02 Environment Create an academic community conducive for the total development of all its users - students, faculty and its administrators An environment not only good for intellectual advancement but also for personal development This element appears directly to all human senses - seeing, hearing, smelling, and feeling

- 4.03 Movements Arrive with a design that puts equal importance to both pedestrian and vehicular circulation This element usually deals with external approaches to the project site and the internal campus circulation of all the members of the academic community - i e all the internal movements of students, faculty, administrator and maintenance from one space to another
- 4.04 Services This element concerns itself with the healthy, personal hygiene, food & water supply for all academic members It also pertains to the housekeeping services of the academic community, the disposal technique and collection management of its waste, trash and garbage

X 4.05 Height of buildings may be up to 3-storeys only

5 0 DESIGN REQUIREMENTS

- 5 01 The general environment of the site and its potential should be analyzed prior to designing, define its primary and secondary users, make calculations and justification of area, as much as possible, develop modular components to be able to lessen construction cost



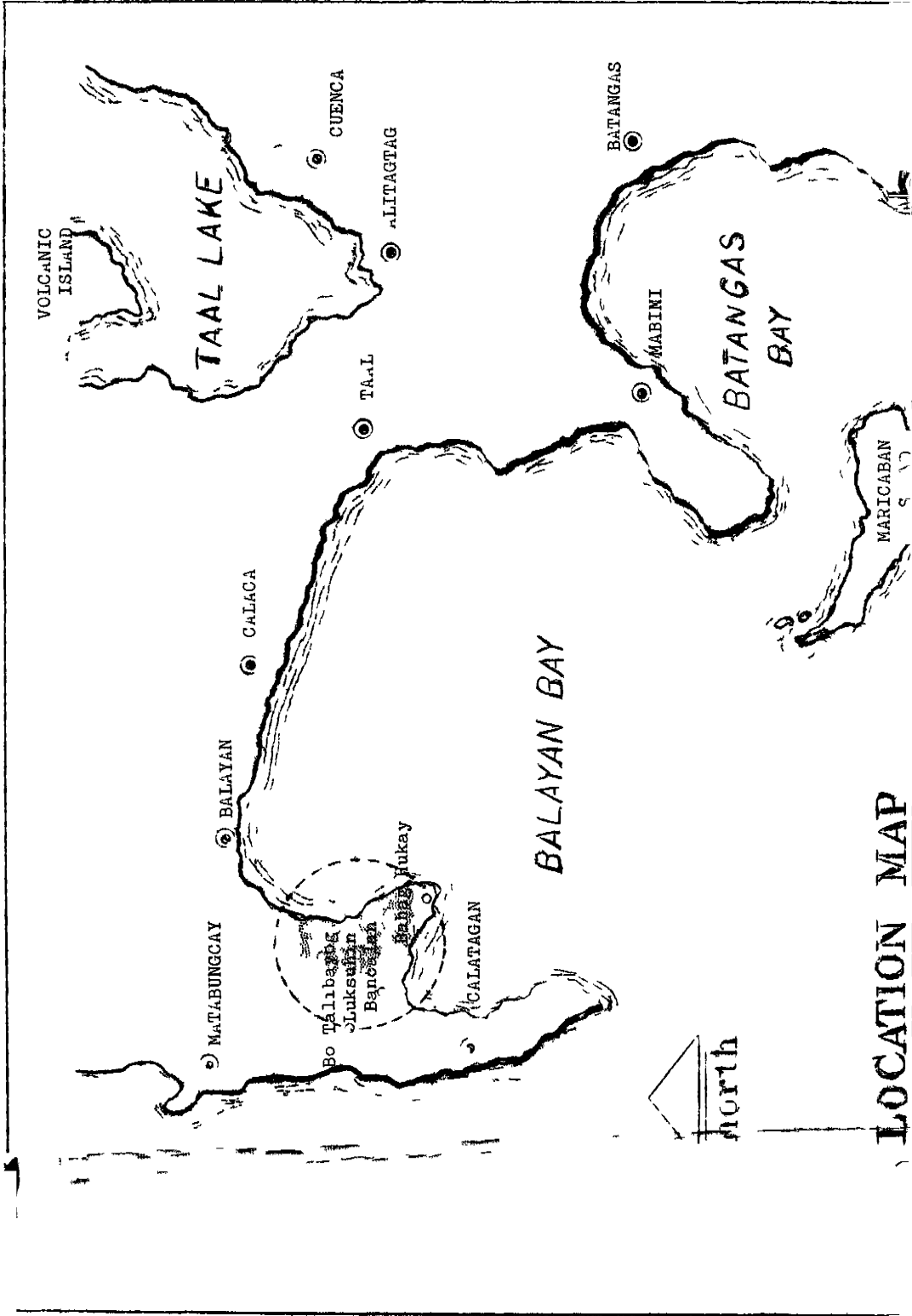
6 0 ACTUAL PROJECT

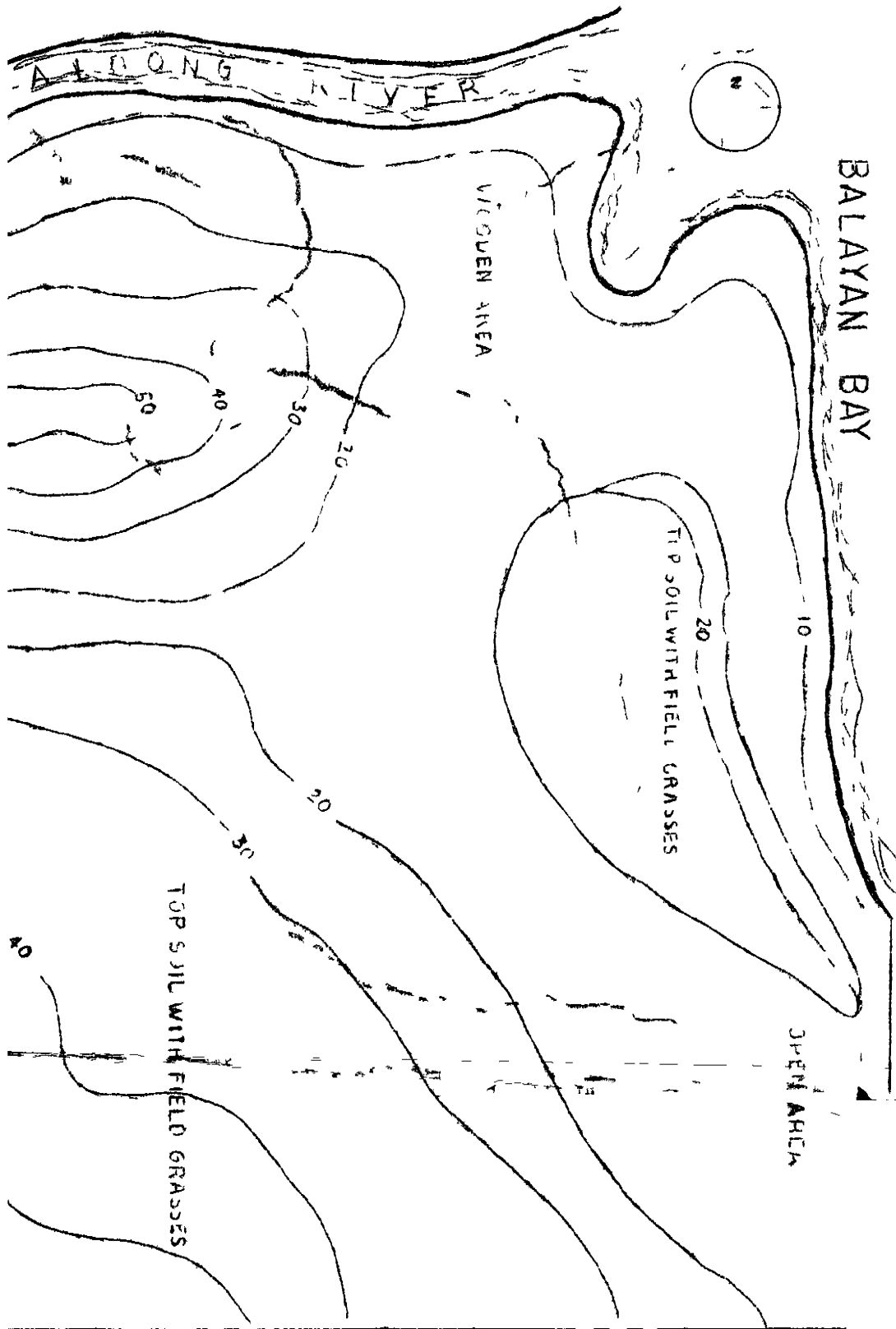
- 6.01 35 hectares lot size
- 6.02 Location
- 6.03a Planned number of student or pupil per grade, year
- 6.03b Peak load per shift
- 6.03c Number of pupils, student per class
- 6.03d Ratio of lecture/laboratory classes

	6 03a	6 03b	6 03c	6 03d
6 03 1 Kinder/Pregrade	300	30	50%	50-50
6 03 2 Grade 1	250	30	50%	60-40
6 03 3 Grade 2	250	40	50%	70-30
6 03 4 Grade 3	250	40	50%	70-30
6 03.5 4	200	40	50%	70-30
6.03.6 5	200	40	100%	80-20
<del>6.03.7 6</del>	<del>200</del>	<del>40</del>	<del>100%</del>	<del>80-20</del>
6 03 8 7	200	40	100%	80-20
6.03.9 First year	300	40	100%	90-10
6.03.10 Second year	250	40	100%	90-10
6.03.11 Third year	200	40	100%	80-20
6.03 12 Fourth year	200	40	100%	80-20
6.03.13 College of Education	700	40	40%	75-25
Grand Total of Students	3500			

VVVV

- 7.0 DRAWING REQUIREMENTS (See illustration for standard sizes of rates on boards, margins and identification)
- 7.01 Please see attached copy of Vicinity Map
  - 7.02 Site plan - scale 1-500 mts (B & W)
  - 7.03 Floor plans scale 1-100 mts (B & W)
  - 7.04 4 elevation scale 1-100 mts (B & W)
  - 7.05 2 sectional perspective scale 1-100 mts (B & W)
  - 7.06 Spot perspective of catchment area or activity points  
spot perspective of service facilities (both with graphical analysis of concepts) (any convenient scale)
  - 7.07 Aerial perspective of proposed project (any convenient scale) not colored or scale model (black & white photography only)







DESIGN COMPETITION  
(MEC/UAP)

on  
URBAN LOW-RISE HOUSING CLUSTERS

I CONCEPT BACKGROUND

The Filipino's dwelling is among the most important factors that affect his being. His home should provide a congenial atmosphere offering the most favourable conditions under which both the individual and the family can develop and grow as interacting members of Philippine society. Contemporary dwellings should not be mere boxes and soulless shelters, but as crucibles of the cultural ambience pervading in the community.

This program or design competition aims to elicit from the students the proper direction in which residential clustering should move. However, the most essential consideration is that the single individual dwelling and the physical setting, whether urban or rural, should be meaningfully related to each other. This primary relationship should be reflected in appropriate architectural and environmental forms.

II DEFINITION OF URBAN LOW RISE GROUP HOUSING

"Urban" is a notion translated and handed down by the Romans from the Greek "asteiotes" which, apart from serving as the adjective of the noun "town", implies a refined mode of living, a deliberate intellectualism, related not only to individual persons, but to the democratic social conscience of the public at large. Urbanism is a development which can be ascribed to a "social intelligence" in the sense in which the term was used by Thomas Aquinas: "That which is good is wise."

Thus the background of social quality is just as necessary and important to the paramount achievement visible to the eye. It is an indispensable ingredient of all that is "urban" becoming even more manifest in simple houses, streets and parks than in monumental structures such as churches, commercial buildings and civil architecture. The program is aimed to apply the term "urban" to a mode of development that is derived from the collective intellectual efforts of all citizens to obtain the right kind of housing. A human settlement which deserves to be called "urban" should be taken to cater to all the varied "activities", age groups, family combination and their changes in the course of time. The term "urban" is thus meant to signify, not the conditions brought about by a relatively high population density, but a concentration, in the intellectual sense, arising from a high level of socio-cultural and political interactions.

The term "low-rise housing" is considered to denote dwellings which are directly associated with the ground, in contrast to the indirect association with the ground in the form of a jointly used stairway to which the tenants of multi-storey houses are confined. In low-rise housing, the direct link consists of the internal stairs or a door leading to a private garden, or possibly to a semi-private open space reserved for the tenants of surrounding houses. A low-rise housing scheme calls for an indication of the private or public character of the open space to which the dwelling is directly or indirectly linked. Urban Low-Rise Housing Clusters may, therefore, be defined as "high-density housing where each dwelling is directly linked with a private open space". It is the ultimate association of relation between dwellings which is vital to low-rise housing clusters.

### III SPACE ELEMENTS

Developing a home for an anonymous family calls for visualizing the scenario of how a typical urban family will be occupying its dwelling structure. Defining the space elements of a dwelling unit, as is generally and traditionally known today, can be a constraint to the creative search for spatial definitions if such space elements should be in keeping with the dynamic urban Filipino culture. (See appendix of a typical family life style of the urbanized Filipino). Hence, this program does not define the spatial elements of the house as bedrooms, living rooms, etc. but as disaggregated elements that contribute to habitability criteria and evolving a scenario in how the designed spaces can be efficiently used as are adaptable to the family requirements on a typical week-day and a typical week-end. Further, a scenario should be developed to determine the flexibility and ultimate expansibility of the dwelling in the given lot as the life cycle of the family is completed.

### IV HABITABILITY CRITERIA

The disaggregated elements that contribute to habitability in low-rise housing cluster and which should be considered in lieu of traditional space elements in the house are the following:

#### 1 Architecture

This element should give emphasis on the volumetric and spatial requirements, including multi-functional use of spaces for rest, ~~hygiene, social, recreation, service and~~ communication.

#### 2 Environment

This element defines the acceptable ranges of visual perception, acoustics, illumination, comfort and atmosphere.

3 Personal Hygiene

This element defines the activities for daily personal hygiene, provisions for grooming, body washing and bathing

4 Mobility and Movement Restraint

This element defines the preferred restraint requirements for sleep, work and leisure as required in day-to-day activities as well as in special occasions

5 Storage and Belongings

This element defines wardrobe requirements and storage provisions Laundry requirements shall be defined as a function of family size

6 Food and Water Management

This element defines food storage, preparations, serving, dining, dishwashing and waste-disposal requirements Included in this element is the organizational operating philosophy of dining-kitchen relationship

7 Housekeeping

This element defines waste, trash and garbage disposal activities including their appropriate disposal technique and collection management

8 Entertainment and Leisure

This element defines provisions for entertainment and recreation as well as the necessary equipment and facilities for their implementation

V THE PROJECT SITE

An area of 8,700 square meters relatively flat (2 5% slope towards the creek) but well-drained has been reserved by the government for setting up several housing clusters at a gross residential density of 80 dwellings per hectare There is a 75-meter frontage at Maharlika St which has been designated as a 9 00 Meter wide access road Parallel to the road and defining the rear boundary is an all year round creek The 116 m long side is perpendicular to the street making 45° from the North

Gen Aguinaldo Avenue, 300 m to the southeast of the property is the nearest major road link of the project site to the employment areas of the town Educational, health, shopping and entertainment facilities are conveniently proximate to the site and bicycles can be used as a movement mode to reach these activity centers

## VI AREA REQUIREMENTS

For the purpose of this competition, the following design parameters have been established to wit

Floor area ratio	1 0
Residential density	80 dwelling units per hectare
Floor area per person	7 5 sq m per person
Private open space	30% of private areas
Average net lot area	100 square meters

## VII DESIGN REQUIREMENTS

Site and design to the fullest architectural extent, a cluster of (7-9) low-rise units satisfying the cultural and social requirements of a typical urban Filipino family Provisions for the whole array of privacy, community, comfort and convenience extent in any urban area of the country should be strongly considered Architectural translations of concepts should also anticipate the constraints and exigencies brought by fast-growing settlements on the transport, utilities and services systems Opportunities for adapting the designs to non-conventional energy sources and waste management systems are factors to be considered Emphasis should also be given to applications of principles of tropical design, landscaping and passive-cooling in the architectural solutions

In preparing the test for the rationale and concepts for the design of the urban low-rise housing clusters, the following considerations have to be discussed

- a Structural Factors
- b Economic Impact
- c Socio-Cultural Impact
- d Environmental impact, particularly sunlight, wind and landscaping
- e Habitability
- f Circulation and Functional Efficiency

Emphasis should also be given to the differences that an urban low-rise housing cluster has over large suburban sprawl of subdivisions Look also at traditional and historical precedents, particularly ancient types of concentrated low-rise housing which have all been forgotten

The cost of the houses should be within the funding capacity of local and/or national government agencies concerned in conjunction with the ability of the dwellers to pay back, in installments, a portion of the costs

## VIII DRAWING REQUIREMENTS

All plans, drawings research reports, rationale of the design, etc shall be placed in 80 m x 100 m (30" x 40") (20" x 30") illustration boards in black and white only (black and white photographs and/or Monochromatic black and white illustration) The body of textural displays shall have a minimum height of 1/2 centimeters

The following are the plans and drawing to be submitted with the required scales

- a Site plans, and/or cluster layouts and variations 1 40 m  
Site plans should include circulation, movement systems layout, landscaping, and street furniture
- b Typical house plan(s) 1 50 m
- c Elevations and sections 1 50 m
- d Structural and construction details 1 20 m
- f Perspectives and/or pictorials of solutions should be in black x white
- d Supporting graphical analysis and concepts

Not more than six (6) sheets shall be submitted

IX ELIGIBILITY AND REGISTRATION

This competition is open to all 3rd, 4th and 5th year architecture students currently enrolled in any recognized architecture school of the Philippines Individual or group entries are acceptable by wire/hand carried notices Entry forms are to be submitted through the school authorities on or before December 10 and must be received by MEC on January 10, 1980 Anonymity must be strictly observed by competitors at all stages of the competition

X DEADLINES AND SUBMISSION PROCEDURES

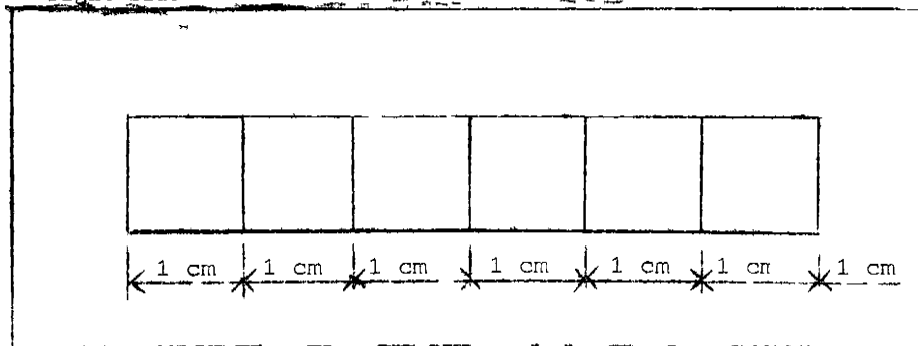
Entry forms must be received by MEC on or before January 10, 1980

METHOD OF IDENTIFICATION OF ENTRIES

Attach securely a sealed long-size letter envelope at the back of the first board of the entry Inside the envelope should be a paper 8-1/2" x 11" on which is indicated the name (s) of the participant(s), the name of the school, and the code number

The code number shall be a 6-digit number selected by the participant(s) him(them)selves It should be stressed that repetitive or easily coincidental sequences of digits be avoided (e g. 111111; 777777, 123123, etc )

In the front of each illustration board of each competitor's entry, six (6) boxes 1 cm x 1 cm, which contain the number of the entry, shall be located not less nor more than 1 00 cm from the bottom and not less nor more than 1 00 cm from the right side



XI JURY, AWARDS AND PRIZES

The following Jury members and/or alternates have been appointed to advise on the conduct of the competition, adjudicate on the designs submitted, and make the awards

Awards of the Jury shall be made on \_\_\_\_\_

EXHIBITION AND OWNERSHIP OF ENTRIES

Black-and-white photographs showing situations, conditions, models, etc can be included in the presentation drawings provided they are securely posted to the same size of boards specified

XII BASIS FOR EVALUATING ENTRIES\*

The following criteria shall be used in adjudication wherein -

- 1 The CONCEPT OF CONGRUENCE is to be applied to
  - a Material components
  - b Component systems as related to use in structure
  - c Space-forming systems of the structure
  - d Multi-functions of the space in the structure
  - e The form and framework of the structure
  - f How the structure related to other structures and the environment
  - g How the structure relates to the image of the community
- 2 FACTORS to be CONSIDERED are as follows
  - A HUMAN VALUES
    - 1 Provide each occupant a measure of freedom to adopt his personal environment to his needs
    - 2 Relationship of building to human activities within
    - 3 User participation
    - 4 Building should communicate what people need to know in a language that they can comprehend

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\*Based on criteria prepared by Sanahan, G.V., Criteria for Evaluating House Designs, Quezon City, 1978

B ADAPTABILITY AND FLEXIBILITY OF DESIGN

- 1 Allowance for expansion
- 2 House form suited to cultural, spiritual, physical and recreational values
- 3 Adaptability to site (livelihood and lifestyle)
- 4 Adaptability to low-energy technology
- 5 Adaptability of design to indigenous materials
- 6 Innovations in use of space

C SAFETY AND SECURITY

- 1 Resistance to vermin and insects
- 2 Resistance to disasters Fire, typhoons and earthquakes (inherent in material itself or in the design of its use)
- 3 Compatibility of design to strength of materials
- 4 Sense of community and security
5. Structural stability

d BUILDING FUNCTIONS

- 1 Ventilation and thermal insulation
- 2 Orientation and space planning
- 3 Sunlight and illumination
- 4 Acoustics
- 5 Habitability and sanitation
- 6 Storage
- 7 Economy of use of space and modularity

E MATERIALS

- 1 Compatibility of material to design and culture
- 2 Innovation in use of materials
- 3 Economy of use of materials
- 4 Ease of installation and durability
- 5 Self-applicability and workmanship
- 6 Stability and unity of materials

F AESTHETICS

- 1 Nature of materials
- 2 ~~Relation to environment~~
- 3 ~~Relation to activities~~
- 4 Expression of culture and life styles
- 5 Manifestation of symbolism and beliefs
- 6 Unity of community design

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APPENDIX

(Note The following appendix gives the participant the social scenario most often encountered in urban areas of the Philippines In reading through this material, be aware of economic and social conditions at the time the material was written and relate them to present conditions )

THE CRUZ HOUSEHOLD AS A PROTOTYPE\*

To understand the distinctive stamp that household occupants give their dwelling, let us imagine the Cruz family comfortably settled in their two-bedroom bungalow FRANCISCO CRUZ, the father, is 36 years old and earns 1400 a month as a foreman in the Marikin factory he has served for 12 years Born in Ilocos Sur, he arrived in Manila in 1955 with a vocational high school diploma A year later, he was married, settled in his wife's hometown in nearby San Mateo and began to raise a family In the first years of their marriage MILAGROS, his wife augmented the family income by maintaining a cottage industry in their first house in which she and five other women sewed show uppers The silong, or ground floor portion, of their two-storey wooden house served as their worksite

The present composition of the Cruz family is made up of two daughters, ANITA, age 10 and in grade four at the local public school, and BELEN, nine, and in grade three, two sons, CARLOS, six years old and not yet going to school, and DOMINGO, age three The wife is due to deliver her fifth child four months from now This is her sixth pregnancy, one child between Belen and Carlos having been lost through a miscarriage Also living in the household is Francisco's 20-year old sister, SEVERINA, who came to Manila from Ilocos Sur for a college education two years ago She is enrolled at the National Teachers' College in downtown Manila, and receives money for her support from her father in Ilocos Sur Finally, there is ROSING SANTOS, the maid, 16 years old, born in Leyte, and possessing a grade two education The family brought Bantay, its female pet dog, to the bungalow but decided to leave the chicken behind Household appliances consist of a television set, a two-burner electric stove and a heavy duty sewing machine The Cruzes do not own a refrigerator or a vehicle They did own their former two-storey house but not the lot it was on

Living in the House

Let us observe the Cruz household in the context of a 24-hour span beginning at 1 00 a m on a weekday This will enable us to specify the activities and speculate on the needs of the average family living bungalow house on a P400-500-income per month

\*Extracted from Hollensteiner, Mary R and Ma Angelina Esquivel Human Factors in Private Low-Cost Housing in the Philippines, a Seminar Report Land Housing Development Corporation and Philippine Sociological Society, Makati, 1968



Where is each member of the household likely to be sleeping? Mr and Mrs Cruz will be occupying the master bedroom with their youngest child, Domingo, and possibly six-year old Carlos, too. In the other bedroom will be Anita and Belen, Severina, and perhaps Rosing, the maid, unless the kitchen or living room has been designated as her sleeping space. When the fifth child is born, it will also share the master bedroom, forcing Carlos and Domingo to move in with the other children.

How are four children and two adults to fit into a 12 square feet floor space? Double decker beds offer one alternative, supplemented by a large possibility is to dispense with beds altogether in favor of the all-inclusive mat with net. Neither response may be feasible, however, if mats do not provide sufficient insulation from the cold concrete floor. The Cruzes can imitate the strategy chosen by several tenants of the government multi-storey tenement houses in Vitas, Santa Ana, and Fort Bonifacio, namely, construct a mezzanine in the bedroom or even the living room to provide enough sleeping space for the average six-person family. Convertible sofas in the living room will also ease the strain.

Aside from the health hazard of using a concrete floor as a daily rest area, the pattern of floor sleeping, while clearly a rural one, suggests another disadvantage, it may not conform to the standards of city residents at this income level. Urban dwellers have grown accustomed to a lifestyle that includes furniture in the house. Indeed, with the varied interests and opportunities represented in an urban family's activities, the whole pattern of living differs drastically from the rural counterpart. Urban people as a whole retire much later in the evening encouraged by the availability of electricity and the desire to relax together after an eight-to-five work day. Their bedtime schedule differs for each member, the children retiring first, followed by the adults in turn, and finally the maid when she has tidied up after everyone. Some provision has to be made whereby the early retirers can sleep despite television has to be made whereby the early retirers can sleep despite television programs and the continuing conversations of these staying up. Clearly, undisturbed sleeping space is at a premium, especially in a two-bedroom bungalow housing eight people. Severina, for example, studies until 11:00 p.m., tying up a sleeping area which in a rural setting would normally be available by dark.

Even the stage in a family's life cycle makes a difference in the use of household space. While Mr and Mrs Cruz may not mind their younger children's sharing the master bedroom at the age of six, three, or one month, their attitude will likely change as Carlos, Domingo, and the baby go into their teens. Nor will they find it desirable to have adolescent boys in the same bedrooms, much less on the same bed or mat, as Anita and Belen, now turned 19 and 20 years old. Hence, sex and incest taboos as well as the patterning of activities need to be taken into consideration in the planning of sleeping spaces for the mobility-oriented, low-middle income urban family.

Another characteristic problem faced by the urban family is that of relatives in the provinces expecting to move in with their city cousins for brief or extended visits. Traditional cultural values make refusal difficult, forcing the Manilas to accommodate the probinsyanos in some fashion. Low-middle and middle class Malate residents appear to harbor more relatives in their households than do poorer Tondo residents. Apparently the economic factor has a great deal to do with the actual expression of this Filipino norm of family solidarity. Extending the observation to the Marikina group, one can predict that people in this low-middle income category will be seen by rural relatives as fair game. For the former have the surplus that invites provincial kinsmen to seek their hospitality.

A further response to rural migrants noted among Tondo dwellers is that they actually encourage overstaying house guests to squat on nearby vacant lots. A third observation is that overcrowded householders add makeshift structures on to the main one to create extra space for sleeping, ironing, cooking, and storage.

While it is possible to make regulations controlling the number occupying a dwelling, the public housing experience shows that they are difficult to enforce. Tenants tend to be secretive about the occupancy of their apartments. Tenement units have even changed hands without the knowledge of the housing authority because the title to the apartment stays in the original occupant's name, even after he has illegally sold the dwelling rights to some other family. Once the title to the property is turned over to the owner, control becomes even more difficult with the withdrawal of the housing authority from the scene, no policy making body taking its place, and poor enforcement of zoning laws on property. Nevertheless, one must also consider that the kind of people attracted to the Marikina project may actually appreciate having fairly strict resident restrictions in the contract to protect them from having to take in migrating relatives. In this manner, they can sidestep cultural expectations by citing the existence of such rules without losing the esteem of their relatives.

There are in fact legal minimum space requirements in most countries ranging from twelve square meters per person in European countries to two square meters in Hong Kong. Philippine Housing and Homesite Corporation projects average five to eight square meters per person. The eight member Crug household occupying a 65 square meter floor space falls, therefore, ~~into the optimum end of the PHHC scale~~.

Yet despite the satisfactory overall density, the placement of members in only two sleeping spaces continues to pose problems. The demands of heterogeneous activities and occupations in the urban family, sexual codes, and kinship expectations suggest the importance of three separate sleeping areas as the family increases in size and age.

The realities of building costs force a careful look at alternatives to effect this arrangement in Murikina houses. Incorporating a third bedroom into the initial construction would add another 3,000 to the cost of the house. Building it after the structure is already up may well mean 5,000 more for tearing down and rebuilding. A second storey bedroom would strain the current foundations of the house and again require extensive renovation. Perhaps more feasible would be a raised house on posts, as in the rural areas, with a silong, or space underneath for possible enclosure later on. While it is conceivable, as the designers suggest, that families in need of more space will eventually move to larger houses, it is equally likely in the face of inadequate evidence that families will prefer to add a room rather than move elsewhere. And this preference must be taken into account in planning a house built to last 25 years.

The expense of adding another room can be eliminated by designing the interior of the houses with flexibility as a dominant theme. Rectangular-shaped rooms allow more rearranging than square ones. If the two bedrooms were adjacent to each another, one being large and the other small, then when the family needed another separate sleeping space, it could divide the large room in two. Moreover, if wooden partitions were used instead of concrete ones, they would be moved to accommodate to new room-size needs without incurring a major expense.

The question of costs impinges on the thinking of the architects and engineers much more than it does on the social scientists. While the former understand the logic behind the flexibility theme, they caution that the lower the cost, the less the degree of flexibility possible. The margin for experimentation becomes too limited when one must try to provide the best house at this price and still make a minimal profit. Notable features in the LHDC house are the generous floor area for the price, cross-ventilation in every room, and sturdy building materials to meet the 25-year requirement. Allowing occupants to renovate a two-bedroom house into a three-sleeping space structure will, designers feel, undermine precisely those features in which they take legitimate pride. Going unheeded will be the needs of a tropical environment, reflected in the two spacious bedrooms and walls that stop a foot short of the ceiling for proper air circulation, for example.

Having speculated on the sleeping patterns of the Cruz family now and in the future, let us turn to their waking hours. The earliest riser at 5:30 a.m. is likely to be Rosina, who sleeps in the kitchen or living room. Not only must she begin breakfast preparations, she must also use the only toilet before the rest of the household begins to converge upon it. Her servant status will probably prescribe her use of the bathroom for bathing purposes, rather the kitchen sink will suffice for face washing and the outside laundry faucet for bathing with a tabo, or dipper, when her heaviest chores have been completed. Since she will bathe toward noon, some kind of screen will be necessary to ensure a minimum of privacy at the laundry tap, even though she will wrap a tapis, or sarong, around her. Taking this into consideration the Cruzes may even attempt early in their LHDC occupancy to add a cheap toilet bowl and shower outside the house for Rosina's benefit.

Of course, the Cruzes may have accepted a more equalitarian viewpoint and permit losing the use of the inside bathroom, as do many similar income families on the University of the Philippines campus, for example. Nevertheless, in the absence of adequate information on attitudes and activities of this income bracket, one must prepare for the most likely contingencies. A feasible hypothesis would suggest that oriented as these households are to upward social mobility and yet little exposed to equalitarian values through higher education, they will exhibit a greater anxiety about the necessity of distinguishing social levels and the prerogatives open to each. As a group slightly above the poverty line, their status insecurity may foster measures calculated to reassure them of their proximity to the higher social levels rather than to the lower ones. Living as they formerly did in a rented accessory or apartment, they had little choice, but now settle in their own house, they can insist on some of their preferences.

To return to the awakening household, Severina has by 6:30 a.m. gotten dressed, eaten a hasty breakfast in the kitchen, grabbed her lunch bag and books, and left the house in order to make her 8:00 a.m. class in Qulapo. She may have to walk as far as 10 to 15 blocks to the commercial center where the Divisoria-bound buses should be allowed to wend their way through the subdivision streets in search of passengers, let us suppose that noisy, mechanized tricycles have been allowed in the community to minimize the walking to the center or, for the children to school. Preferable would be a bus route calculated not to isolate any part of the community, yet having definite stops to minimize the smoke and noise of door-to-door idling. The bus stop would also serve as a meeting place for neighbors and encourage personal acquaintances, leading to a sense of community. Moreover, if the community center provided the only bus stop, residents like Severina would have to add another 20 centavos for the tricycle ride to the 1.50 they already spend on transportation per day, or close to 15.00 to the nearly 30 they spend per month. Fortunately, her father sends her a monthly allowance covering her stay in Greater Manila, so that unlike many of her classmates, she does not have to be supported by her brother, Francisco.

As Severina leaves, Mr. and Mrs. Cruz awaken to the sound of their two young children scuffling. In the other room, Anita and Balen, have been roused as this is a school day. Mr. Cruz pounds impatiently at the bathroom door which his daughters have one after the other locked behind them as they dress in private. The modesty pattern has taken hold, so that, ~~the girls either turn their backs to others while undressing,~~ or if possible retreat into the bathroom.

Meanwhile, Mrs. Cruz helps lay out breakfast for the family on the kitchen table, each member eating whenever he is ready. She also checks the children's baon, or mid-morning snack, to see that Kosing has prepared it according to their preferences. But she also has to hurry in order to reach the market early enough to obtain the best buys.

Not having a refrigerator, she can let only one marketing dry go by if she serves dried fish or meat, draws on her canned food stock, or relies on the neighborhood sari-sari store for the main course. The question of where the markets bears mention but will be treated later in the section on the community.

Just as Mrs. Cruz takes advantage of the early morning hours to acquire the best market buys, so too, must Rosing start the morning wash early enough to get the benefit of the morning sun for bleaching and drying. Propping up her cheap transistor radio nearby, she squats before her batia or basin, on the concrete slab by the outside faucet. Here, she spends the next three hours, absorbed in soap operas and audience participation shows, stretching her muscle occasionally to lay out the clothes on the concrete septic tank platform or sunny front lawn for bleaching, to check the starch she is cooking in the kitchen, to hang the colored clothes on the line, or to look in on the two smaller children playing inside. Hopefully her laundry tap site has a roof to protect her from the sun and the rain, otherwise, she will be forced to use the crowded kitchen sink or inside bathroom taps for laundering.

Several questions arise concerning this period when Rosing, the lone adult, must remain in the backyard portion of the lot. Designed as the houses are to face alternately the street or the side, some kitchen doors will be facing the backyard. Hence, Rosing cannot see while she is washing whether anyone is coming up the walk, whether the smaller children have strayed off the front yard into the street, or whether anyone is making off with her clothes bleaching in the front yard. She must make doubly sure, therefore, to lock the front door carefully while attending to the laundry. Most feasible is the placement of the house on the lot in such a way, that the kitchen door faces the side, with the laundry faucet located in a direct line of vision with the front gate. This will maximize surveillance over the property.

Having returned from the market sometime between 8:00 and 9:00 a.m., Mrs. Cruz promptly cooks the food to prevent spoilage. She tethers the live chicken she has bought to a stick in the backyard, planning to keep it there either until the following day or until it fattens sufficiently. When she kills it, she will do so, at the outside faucet, also the site for cleaning fish. With the meat on the stove, she prepares the fish for daing or dried fish, by threading it onto bamboo sticks and putting the lot outside under the sun, well out of Bantay's reach. She may soak some of the fish in soy sauce and calamansi, or sour citrus fruit, for consumption that evening. All this is accomplished with the two ~~boys running in and out periodically looking for snacks or asking for water.~~

At 11:00 a.m. Rosing has completed the washing and comes into clean the house. Shortly after noon, Anita and Belen return from school and Mrs. Cruz and her four children have lunch together at the dining room table. Rosing eats later in the kitchen. Siesta follows for the children, while

Rosing gets a chance to rest briefly before tackling the enormous load of ironing that will occupy her afternoon. With the household now quiet, Mrs. Cruz pulls out her heavy-duty sewing machine and works on her shoe uppers for the next three hours, while the light is good or until it is time to begin supper preparations. She notices her neighbor, the beautician, go out to begin her home service rounds in the community. By 3:00 p.m. the girls are up and play for an hour or two, before settling down to do their homework at the dining room table. Although, they have relatively few assignments, this task Anita and Belen a long time, to accomplish. For their eyes keep straying to the blaring television set with its afternoon programming of cartoons, movies, and children's participation shows. The boys watch television off and on, but prefer playing outside with the neighborhood children, yet they will not hear of the set's being turned off in the interim.

And where do they play? While the front yard offers one likely location, varied age-sets in the family foster different sets of friends not all of whom, can be accommodated on one lawn. Neighboring yards provide additional space, but the street still offers the most flexible playground, especially for older children seeking to avoid the direct surveillance of their parents, preferring to mix with new one play group, now the other, and wanting to be "where the action is". Some kind of recreation and traffic policy will have to be thought out to accommodate to this pattern, but the matter, will be deferred to the section on living in the community.

It is now early evening. Lights snap on all over the community, as the full complement of residents begins to converge on their homes. Mothers call their children to come in out of the evening dew, fathers sit in front of television sets awaiting the evening meal over which wives and maids bustle in the kitchen. Adolescents linger at the corner sari-sari store or by a friend's gate postponing their home entries, until the last possible moment. In the Cruz household, Severina sets the table and helps entertain the two younger boys to keep them from getting underfoot in the kitchen. Except when Mr. Cruz decides to have a few drinks after work with his co-employees, the family dines together at the evening meal. Rosing serves the food with Severina, Anita, and Belen helping clear the table. Severina then, washes the dishes, while her nieces put them away. Rosing never washes the dishes after an afternoon of ironing, because of the common belief that wetting one's hands after ironing brings unhealthy effects.

Supper is over, the television set becomes the focus of attention, although Mrs. Cruz, takes the opportunity to mend clothes during commercials or dull portions. Severina begins studying in the bedroom, transferring to the dining room table when Anita and Belen are ready for bed. Rosing may go to the backyard or sari-sari store to chat with the neighborhood maids. Or if she is especially tired, she rests her head on her arms at the kitchen table waiting for the family to retire. By 11:00 p.m., only Severina remains in the living room reviewing her lessons. At last even Severina retires, enabling Rosing to lay out her mat on the living room floor. The Cruzes 24-hour cycle is complete.

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DESIGN COMPETITION (MEC/UAP)  
"Project Eco-Independence"

Concept Background

Even before the oil crisis of 1973, several eminent scientists and technologists saw the dangerous situation forming whereby the world was becoming too independent on a specific fuel source for energy requirements. But the world, heady with economic progress in the '60's, did not take too seriously any viewpoint that ran contrary to the idea of a perpetual economic "boom".

When the price of oil increased to a record level in 1973, the whole world was jolted. First, the countries that imported petroleum for their energy requirements saw their foreign exchange earnings vanish. Second, the countries that produced the oil found themselves with huge financial surpluses and global political power.

Unfortunately, most of the countries that were industrialized were importers of petroleum. When fuel bills increased, they found that they had to increase the prices of the goods manufactured by their industries in order to pay for increased petroleum prices. The petroleum-producing countries also found out that they had to pay higher prices for their industrially-produced goods. Now in order to have more money to pay for higher priced goods, the petroleum-producing countries raised the price of oil again. But the industrialized nations had to raise the price of their factory produced goods once more, for the price to pay for the oil to produce the energy to run the factories was higher again.

This situation, called inflation, became aggravated in many countries that tried to hold down the cost of labor in order to make goods reasonable in price to their own citizens. This, however, was not too successful, and led to difficult social conditions in many countries, especially in the Third World.

For, when oil was a cheap fuel for transport, many countries preferred to import many products which would have been more expensive to produce locally. Consequently, many desirable commodities became very expensive.

Transportation consumes 35% of all oil production. Other heavy users are electric power generation (about 15%) and industrial fuels (about 10%) the rest finds used in the manufacture of synthetics (plastics and fibers) and indirect food production (fertilizers).

As many Third World countries are ex-political colonies, much machinery has been acquired from "mother" countries which use petroleum as fuel as an energy source. A typical example is the adoption of the motor car/road network system of transportation. Although this generates tremendous ~~employment opportunities~~ - in terms of automotive manufacture, repair, road and bridge construction - it also irrevocably ties the country to the use of petroleum as fuel for its transportation requirements.

Modern life and industry also needs great quantities of electricity, today's modern families find life impossible without electric appliances. Industries need electricity not only for running electric motors for machinery but also electronic computers. Without electricity a country finds itself 200 years in the past.

In the Philippines, we find ourselves tied to the automobile as the main system of transportation, this is ironic when one looks at our geography. We are an archipelago and this should make water transportation the main system of moving goods and people throughout the country. In trying to keep abreast of the modern world, we created a huge modern city, Metro Manila, now we find out that it has a voracious appetite for electrical energy - which cannot be constantly supplied. And the dense population of Metro Manila keeps increasing, thus adding more strain on an already over-burdened energy supply system.

The effect of inflation upon a city composed of a large majority of poverty-level citizens makes what has been an already difficult situation an almost-explosive one. Clearly, a way has to be found to "defuse" the situation and solve the problem of petroleum bondage.

Thus, PROJECT ECO-INDEPENDENCE was born.

## II Definition of Project Eco-Independence

"Eco-independence" is a joining together of two, possibly three, words into a slogan. The first syllable "eco" stands to mean economic, thus, eco-independence may stand for "economic independence". Eco could also stand for ecology, which plays a big role in modern planning, but ecologically independent? Hardly. Perhaps it could be said that project independence will also strongly stress ecologic interdependence. We must preserve our planet, not lay waste to it.

The first priority of project eco-independence is to create a situation where a group of 1000 families can live comfortably, harmoniously, and purposefully without having to depend on outside sources for any of their functions. Thus, the first priority is to prove that it is possible.

The second priority is, having proven the reality of independence, to be able to assist nearby communities into converting to independent energy sources. The second priority is to then prove that others can also be independent.

In line with the second priority, it will be necessary to train others how to spread the ideas and techniques of becoming independent from outside (imported) energy sources.

A third priority is the ability to survive should there be crises which may affect human civilization. For the political power of petroleum may be strongly contested, and should the modern world as we know it cease to exist, it would be advantageous to have knowledge centers from where some semblance of order could be restored.

## III Planning Elements

### 1 Inhabitants

One thousand families shall merge into a group in a way that they may be able to continuously function independently of outside sources. This shall be achieved through both individual and group interaction.

### 2 Social Needs



The basic facilities needed for the group to exist and continue to function are the following:

- a Housing
- b Education
- c Organization (administrative or governmental)
- d Recreation
- e Health

3 Food Requirements

Nourishment for the inhabitants shall be acquired from agricultural crops, livestock, saltwater fishing or freshwater fishing (river, lake or fishpond)

4 Energy Requirements

Petroleum-based fuel shall become a secondary energy source. The main sources of energy shall be the following:

- a Methane
- b Alcohol
- c Wood (including charcoal)
- d Hydro
- e Wind
- f Solar

5 Industries

The production output power of the group shall include but not be limited to the following:

- a Recycling - for power and useful by-products
- b Food processing
- c Fuel
- d Boatyard

6 Transportation

Access to from and within the locality shall be water-based with harbor terminals located at strategic locations along the bay coastline of the given site, and along the river bank. Land transportation shall likewise be an integral part of the system, roads for vehicular traffic and paths for human traffic (bicycle can also be accommodated)

IV Habitability Criteria

1 Architecture

Primarily, the characteristic of inhabitants' dwellings must be communal, that is, emphasis must be given on attachment to the group. This means attached housings and lots. Buildings and other structures must be kept to a minimum. ~~no structure shall rise unless necessary. Materials from the immediate environment shall be utilized.~~

2 Environment

All elements of the environment must be harmoniously utilized. Land use and zoning must not be overlooked in order to plan and develop the area. Nature must be preserved when necessary.

3 Group Health and Hygiene

In order to preserve the health and safety of the inhabitants, waste disposal must be planned carefully, which shall include waste recycling, both organic and inorganic. Health centers and services are necessary.

4 Mobility and Movement Restraint

This element refers to the use of land transport networks (roads, paths, walks, etc.) and the use of the sea and river.

5 Security

The element is defined as the possibility of the site to be easily defended and protected and be a base from which attacks to outside threats can be launched.

6 Food and Water Management

Land use shall include agricultural planning, for crop planting location and crop rotation. Food storage and preparation are important elements of food management. Management of domestic water supply shall include hydro-electric and water wheels, water storage, pumping and distribution, and distillation.

7 Housing

This element private housing needs (which include sleeping, eating, hygienic, etc.) and social needs for group interaction (meetings, gatherings, parties, etc.)

8 Entertainment and Leisure

This element defines provisions for entertainment and recreation as well as the necessary equipment and facilities for their implementation.

V The Project Site

Approximately 100 kilometers southwest of Manila is a government-reserved area. The location extends from the coastline of Boca Tolibayog down to Hukay. The site faces the Balayan Bay. National Highway 1 is the nearest major road accessible to the site, 1.5 kilometers away southwest. The site is bordered on the east by the Calong River approximately 150 meters wide. Educational, health, shopping and entertainment facilities are readily accessible at the nearby town.

VI Area Requirements

For the purpose of this competition, the following design parameters have been established, to wit:

<u>Land Use</u>	<u>Percentage of Distribution</u>
Residential	15%
Community Center	10%
Recreational	8%
Agricultural	25%
Industrial	15%
Food Networks	10%
Forest Development	17%
<b>T o t a l</b>	<b>100%</b>

XI Basis for Evaluating Entries\*

The following criteria shall be used in adjudication wherein -

1. The Concept of Congruence is to be applied to
  - a Land use
  - b Element interrelationships
  - c Overall circulation
  - d Resource use
  
2. Factors To Be Considered are as follows
  - A. Human Values
    - 1 Individual-group activities differentiation and union
    - 2 Relationship of overall plan to human activities
    - 3 User participation
  - B. Adaptability and Flexibility of Design
    - 1 Allowance for expansion
    - 2 Overall plan suited to cultural, spiritual, physical and recreational values
    - 3 Adaptability to site (livelihood and lifestyle)
    - 4 Adaptability to low-energy technology
    - 5 Adaptability of design to indigenous materials
    - 6 Innovations in use of space
  - C. Safety and Security
    - 1 Ability to secure and defend entire area
    - 2 Sense of community and security
  - D. Building Functions
    - 1 Ventilation
    - 2 Orientation and space planning
    - 3 Sunlight and illumination
    - 4 Acoustics
    - 5 ~~Sanitation and~~
    - 6 ~~Storage~~
    - 7 ~~Economy of use of space and~~

\* Based on criteria prepared by Manahan, G V Criteria for Evaluating House Designs, Quezon City, 1978

VII Design Requirements

Design at the given site and conditions on a area which will exist and function to satisfy the independent requirements for self-sufficiency of a group of people. The architectural concept must reflect not only self-sufficiency but also the capability to extend sustenance to immediate areas. Long range planning may include expansion of sustenance to remote areas. Emphasis must be given to the use of locally available and low-cost materials.

The difference of the subdivision concept is strongly emphasized. The housing concept is a radical shift from the status quo of single ownership to communal housing.

VIII Drawing Requirements

All works shall be presented in a two-dimensional format on 30" x 40" illustration board. No names or other distinguishing marks which will call the identity of the competitor or his/her school shall be allowed. Violation means immediate disqualification. Each work must present the following:

- 1 Concept graphics (an expression of how the problem is to be solved)
- 2 Overall developmental plan
- 3 Overall perspective
- 4 Details of internal energy and ecological systems, if any
- 5 Plans of the unit of the built environment
- 6 Sections of the units of the built environment
- 7 Perspectives and details of the built environment

All drawings shall be made at a convenient metric scale. Presentation media shall be limited to static, two dimensional visuals. Projectors, transparencies, and light displays shall not be allowed. Black and white photographs of models shall be allowed.

IX Eligibility and Registration

(See Page 5 of the Guidelines for Urban Law  
Rise Category)

X Jury, Awards and Prizes

~~The following members and/or alternates have been adjudicated on the design submitted, and make the awards~~

Awards of the jury shall be made on \_\_\_\_\_

E Materials

- 1 Compatibility of material to design and culture
- 2 Innovation in use of materials
- 3 Economy of use of materials
- 4 Ease of installation and durability
- 5 Self-applacability and workmanship
- 6 Stability and unity of materials

F Aesthetics

- 1 Nature of materials
- 2 Relation to environment
- 3 Relation to activities
- 4 Expression of culture and life styles
- 5 Manifestation of symbolism and beliefs
- 6 Unity of community design