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CONSTRUCTION STANDARDS AND
REGULATIONS IN LOW COST HOUSING AND
MINIMAL INFRASTRUCTURE PROGRAMS^{1/}

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1. THE PROBLEM SITUATION

The well known problems in developing countries population growth, rapid urbanization, and slow economic growth, together with low income and lack of resources, are reflected in overwhelming housing and infrastructure problems.

2. CONSTRUCTION POLICY

Up to now the conventional housing and infrastructure programs based on the models of the advanced countries have brought little benefit to the vast majority of the families in the urban and rural areas of the developing countries.

New building programs for:

- sites and services
- no cost housing
- low cost housing

are required and are coming into operation.

The characteristics of such programs are:

- participation by housing associations and co-operatives,
- self help by individual families in house construction and infrastructure provision
- minimal infrastructure
- low cost materials

These programs must be adapted to the state of development of the country concerned, and they call for a particular approach to building standards and regulations.

3. THE ROLE OF CONSTRUCTION STANDARDS AND REGULATIONS

In a nutshell, standards and regulations are firstly: an instrument of policy, in that the use and distribution of resources of money, materials and labour is affected.

secondly: an instrument for the rationalization and co-ordination of the building process, taking into account among other things:

- the characteristics of materials
- the production and site erection methods
- the demand and distribution needs
- the needs of the consumer
- cost

Control can be exercised in the following ways:

- through the definition of procedural guidelines for house design, construction and the production process
- through the definition of minimal performance standards
- through the development of codes of practice for infrastructure and house building
- through the standardisation of building materials and components within a modular co-ordination framework

4. CRITERIA

New building programs adequate to the low cost housing process need to be backed up by new standards and regulations. For the framing of these, new criteria should complement and replace the present criteria.

A selection of the more obvious planning, production and construction criteria follows:

Versatility of the structure and components:

- suitability for various forms of housing (high rise, low rise)
- adaptability to various standards of housing in different socio-economic groups
- adaptability of structure and components to different building methods
- interchangeability of components of various materials and standards
- provision for adding and taking away components and services.

Dimensional co-ordination:

- suitability of the module for easy planning by non-professionals
- a tolerance system adapted to the self help construction methods.

The production process:

- optimal use of available plant
- fast production
- optimal use of labour and skills
- adaptability to change and growth

The level of investment:

- low capital investment in new plant
- use of local equipment and plant
- new production related to the capacity of existing producers

Use of resources:

- exploitation of existing raw materials
- labour intensive production methods

Assembly conditions:

- ease of assembly by self help
- light weight components for easy handling
- small components for easy assembly on site
- separation of primary and secondary structure
- simple jointing conditions
- repetition of standard elements
- fast erection

Fitness to the natural environment:

- climate
- topography
- local materials

Durability:

- resistance to destruction (impact, fire, corrosion, etc.)
- long life in relation to cost

Cost:

- low initial cost
- low design and administrative costs

5. THE CONTEXT

Building programs and their corresponding building standards and regulations are not only determined by constructional criteria but the general context in which they function.

Some elements in the field of concern which deserve special attention are:

The organizational framework:

- planning policies and the implementation framework
- the national, regional and municipal housing administrations
- the utility and public works administrations

- 1 -
- housing and self help unions, associations and co-operatives

The distribution of socio-economic groups:

- the proportion of low income families in the population
- the life style and service needs

Land use:

- density determinants
- location of settlements

Forms of housing:

- traditional house forms
- house types in current programs
- standards of occupancy and floor space person
- daylight and ventilation determinants

Transportation:

- Vehicle ownership (bicycles etc.)
- transportation facilities
- accessibility to services
- access to communications and information

Utilities:

- the capacity of utility systems: water, energy, drainage and refuse disposal

6. CONCLUSIONS

The designing of building controls around the specific needs of the social economy in its current state of development, implies a time oriented, evolutionary approach to building in which standards and methods are progressively improved.

A possible development scenario could be described in three phases:

Phase 1

The development efforts are concentrated on the creation of administrative organs and the preparation of legislation and procedures for sub-division of land and the provision of minimal infrastructure.

The instruments to be developed are:

- guidelines for settlement and house planning
- performance standards for infrastructure
- codes of practice for infrastructure
- dimensional co-ordination of infrastructure components

Phase 2

The basis for resource planning at national and regional levels for house building is laid.

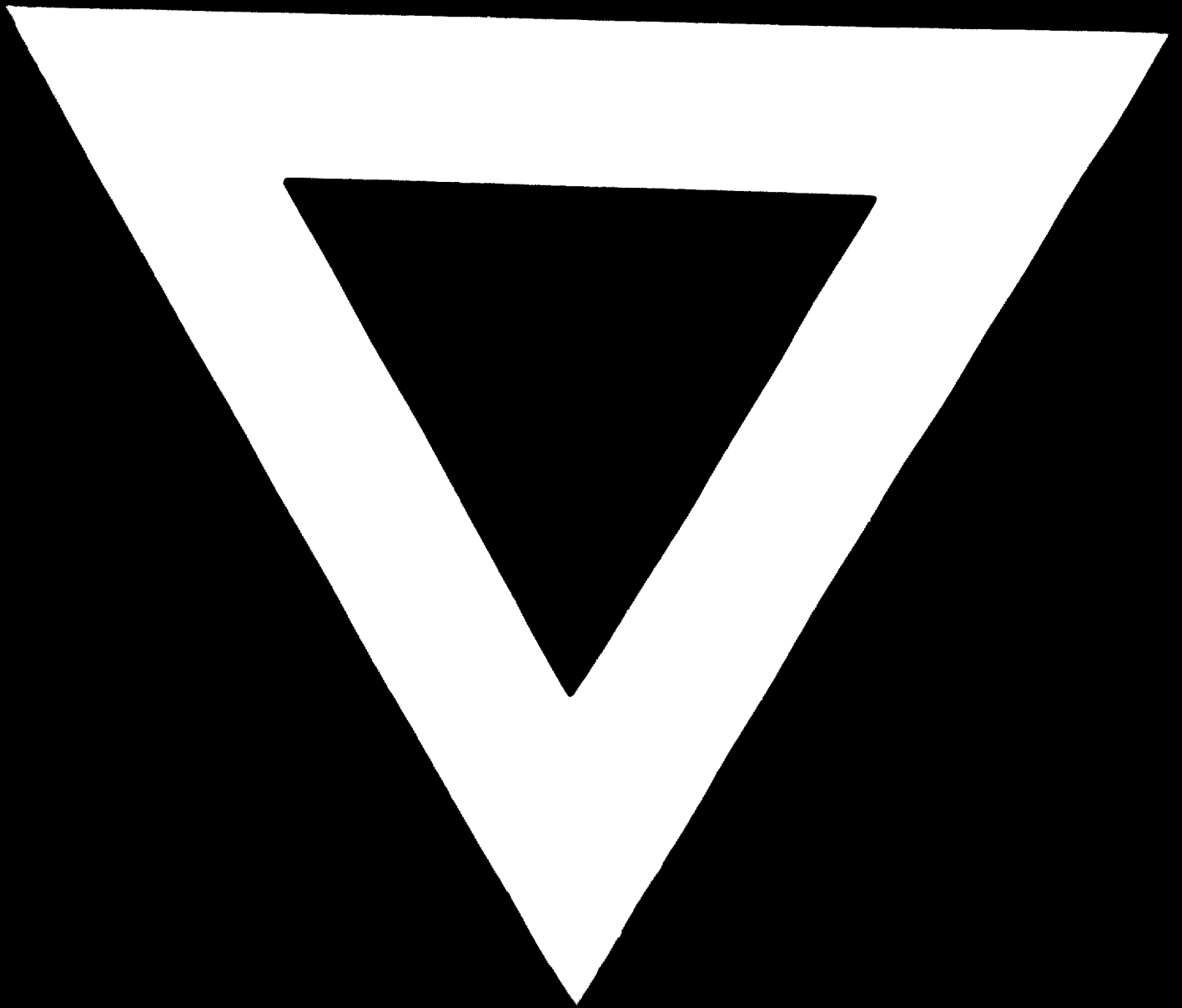
The instruments to be developed are:

- guidelines for construction
- performance standards for building materials, components and services
- codes of practice for construction
- an elementary dimensional co-ordination framework for house construction

Phase 3

Standards are updated and regulations extended to cover the whole building operation.





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