

A Country Report  
On  
“Nepalese Experiences and Provision of Low Cost  
Housing Towards Sustainable Building Construction  
In Nepal”

(Focuses on building status, issues and ideas on best practices for  
Housing standards to poor people)

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***Submitted to:***  
***Institute of International Harmonization***  
***for Building and Housing***  
***Tokyo, Japan***

*December 2005*

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## A. INTRODUCTION

Nepal, situated on the lap of the mighty Hindukush Himalayas, is prone to earthquake. As such, high risk of frequent occurrence of tremors in the future cannot be ruled out and has suffered heavily in the past from earthquakes. Although Nepal is small in size, the country is exposed to most disaster types, earthquake, flood, fire, landslides, drought, storms and ecological hazards. Nepal has suffered losses of life and property due to major earthquakes over ten times since 12<sup>th</sup> century. The last great earthquake in 1934 caused tragic disaster to buildings and lives in Kathmandu Valley.

## B. STATUS OF BUILDIGN STRUCTURES

In the country Nepal, there are many types of buildings such as traditional compounds with a courtyard, detached, monumental houses, historical, government and commercial buildings. Buildings have historically been constructed as a necessity of life in accordance with the available materials, economic power and rules of thumb, in Nepal. Based on referential reports in and outside Nepal, as well as field observation result, buildings in the country are classified into following seven types:

1. **Stone or mud walled buildings** (stone with mud mortar). Such type of buildings is seen in rural and slope areas.
2. **Adobe buildings** (sun baked brick with mud mortar). These types of buildings are seen in the agricultural farm areas as well as farmers' area.
3. **Brick with mud mortar buildings**. Such buildings still remain in urban and rural areas. These buildings are very weak in strength and have high risk during a moderate earthquake.
4. **Brick with cement or lime mortar**. These buildings are located in all areas and comprise more or less half of the buildings in Kathmandu Valley. This type of buildings is generally provided with RCC slabs for floors and roofs.
5. **Reinforced concrete Frame with Masonry of four stories or more:** These types of buildings are most common buildings constructed in the past 25 years in the urban area. However, such existing buildings are extended up to four to six stories, without strengthening the columns or beams.
6. **Reinforced concrete Frame and Masonry walls:** This types building have the proper size of columns and beams as compare to other buildings. They are comparatively safer too.
7. **Other building types**

One of the most serious problems is mixed structures .In particular buildings which have mud mortars in the lower part of the building then in extended part from four to six stories which is provided with RCC beams, RCC slabs that causes a very weak structure.

### **C. GENERAL POINT OF VIEW**

There are several problems from a general point of view in the above parts. These are as follows:

- the general public consciousness regarding earthquake and their damage is low.
- According to economic condition of the owners, construction contracts are customarily handled on a personal basis.
- Quality control problems are likely to occur when owners make their own arrangements for resources and construction materials and pay the workers on piecemeal basis.
- Responsibilities for constructions are not identified because of the informal arrangements in personal contracts between owners and builders and designers.
- Improved professionals in the building and construction trade are needed and is highly lacking now.
- there is insufficient design for SEISMIC MOTION.
- there is insufficient consideration of soil, ground, water and slope (in general)
- there is no constant inspection for quality control and appropriate design and construction practices during any stage of construction by owners, designers, local officials or supervisors.
- Building permits process does not consider seismic forces.
- there is no systematic check at design, construction, and permit and even at completion stages.
- Building codes/regulation does not apply in rural part of the country.
- Building codes is becoming a headache regulation to the builders and local concerning institutions of Kathmandu Valley.
- Although there is a system for registration of engineers, but the system is not fully working.
- Even though there is system of registration of builders, only few are registered.
- There is insufficient inspection of construction materials.
- There is insufficient checking of the mixture of concrete during construction.

### **D. HOUSING FOR NEPALESE**

In Nepal, due to economic and demographic factor, the physical state of much of its housing is in very poor condition. Especially much work is taking place in the major urban areas. From the past two years though, specific works (building code) has partially begun to address the links with building safety. Basic demand for housing for Nepal is called “Housing for Shelter and Safety” is an integral part of Housing Policy in Nepal.

### **What You Said:**

“The biggest single factor affecting housing is **poverty, unemployment and low income.**”

High percentage of Nepalese people identified housing as one of the biggest factor affecting their health in old urban areas of Nepal. All sorts of specific comments came in about housing, relating to a wide ranges of views: standard and condition; cleanliness and tidiness; privacy and non privacy; internal design/space/light/safety/accident; cold/damp/sunlight; security; external environment; rented accommodation; owner occupied accommodation; homelessness; availability and affordability; richness and poverty; costly; quality; maintenance and weak construction etc.

So that “everyone has the right to appropriate housing which is safe design.”  
For Nepalese condition the present strategy objective to ensure safe houses.

### **What We Will Do?**

Established building code and its related guidelines as means of producing houses that would be environmentally healthy and safe; which at least prevent any harm and ensure supported housing program to needed community.

## **E. HOUSING AND POVERTY**

His Majesty’s Government of Nepal is fully committed to provide the basic needs of food, clothing, shelter, and security to its people. The government is committed to lower the poverty level from 45% to 32% by year 2001 but the poverty level reached 34% in year 2004. However, the emergence of insurgency in the hilly and remote region of the country is challenging our democracy, hampering the development effort and creating insecurity among the common people. We are trying to solve this problem through a composite package of political dialogue.

Thus development benefits have not reached the masses of Nepal. Many isolated settlements are out of reach of government programs. Building a house is generally considered to be a family’s responsibility.

Thus, any planning should ensure better access of the poor to the resources. The combined result of the resource conservation, economic growth and poverty alleviation is sustainable housing development is possible through the active participation of the poor people in resource management and their active participation in their development.

## What You Said

- “To increase access of the poor to building construction process.”
- “Help poor people to the work and make it easier to receive benefit.”
- “A greater effort should be invested in influencing local and national policies which watch poverty.”
- “Better education and training for job skills in order to eliminate poverty.”
- “Make housing loan easily available to the poor people.”
- To disseminate information and generate adequate awareness of the people on sanitation, health and environment.”
- “Do not impose high interest loan system to poor.”
- “Develop cheap, affordable and sustainable design practice in housing development.”
- “Encourage the maximum take up of country benefits among the poor people.”

**POVERTY** is one of the driving forces behind shortage of housing conditions and poor health.

“Unemployment, low income and malnutrition, exposure to environmental hazards marches hand in hand with poor health, housing and any attempts to improve the housing and the health to the poor people are unlikely to have any effect unless they form part of an overall attack on poverty.”

From past Asian Forum meetings, it has been made clear that “Sustainable Building-For- All Strategy” which remains the good vision for improvement of building construction management in Nepal.

However, several developments can be seen in the field of building construction management in Kathmandu Valley, which are as follows:

- I. A digital map with a scale of 1:2000 has been completed of Kathmandu Municipality. It would be able to assist in developing inventory of each house type, house condition and number of storey.
- II. Retrofitting work is continuing on school buildings, private office buildings.
- III. Nepalese masons have been trained in phase wise by government and private sectors.
- IV. Building codes/regulations and permit works are regulated in two municipalities (Kathmandu and Patan) of Kathmandu Valley.
- V. Building construction directives, norms, by-laws are regulated in 40 municipalities out of 58 municipalities/
- VI. Ministry of Physical Planning and Works has already started training programs for building permits process, importance of building codes and developing, reviewing, guideline method on ongoing building constructions.
- VII. A limited number of public and large-scale buildings have been constructed taking seismic forces into consideration.

## F. SUSTAINABLE HOUSING FOR POOR

Housing strategies should be based on the concept of “right to adequate shelter” which should be locally interpreted to ensure accessible and affordable housing strategies should be designed:

- a) To increase access of the poor to building materials by encouraging as:
  - Small producers
  - Labor intensive methods
  - Equitable distribution system
  - Research on indigenous materials
- b) To develop cheap, affordable and sustainable design practices
- c) To make housing loan easily available to the target group but take action against “**Loan Sharks**”
- d) To increase the access to the people to land for housing.
- e) To mobilize and generate resources for housing from the people and develop cohesive communities.
- f) To make users more competent to manage housing development
- g) To raise awareness in the target group for know how transfer process.

### Results

Housing standards should be culturally acceptable, socially responsive, technically appropriate, economically feasible, environmentally sustainable, and politically transparent and use ASIAN FORUM peer-to-peer learning guide, which indicates to share of exchange of knowledge, know how, expertise and experience between people, professionals and organizations.

## G. WHAT ARE THE BEST OPRACTICES FOR THE PROVISION OF HOUSING STANDARD TO THE POOR OF THE LEAST DEVELOPING COUNTRIES

Best practices can be defined as initiatives that has a tangible impact on improving the provision of housing, people’s quality of life and living environment; result from a partnership between two or more actors or stakeholders; and proven to be sustainable in their social, economic, environmental and cultural components through good policy and decision making, use of resources and management.

For the poor and the low-income families, the bottom line of any housing program is affordability. As long as the people are unable to afford housing, all other criteria become meaningless. Thus the housing as a package should be economically efficient so that it is cheap and affordable. Perhaps, resource constraints and economic limitations are paramount factors in the housing problems in the least developing countries. Economically, decent housing for low-income families is extremely difficult and sometimes not feasible without some corrective public policies. We have seen and experienced on the international prescriptions to overcome these problems and has gone through different phases over the past number of decades. At that time, government constructed the housing projects, grants for housing, subsidies and cross subsidies were practiced but results were unsatisfactory. Without going through the complexity of the subjects, it can be said that economic viability should be the cornerstone for setting the standard. This requirement dictates the size of the plots, dwelling, and construction materials, level of services, technologies and everything concerned with housing. Housing standards should be developed with constant awareness of affordability.

Strategically speaking, standard should be devised as:

1. **NORMATIVE PROPOSITIONS:** Defining what is good and desirable.
2. **PREVENTIVE SANCTIONS:** To discourage problematic housing
3. **REALISTIC AND FEASIBLE TARGET:** Offering pragmatic and affordable solutions.
4. **ENFORCABLE POLICIES:** To facilitate implementations
5. **CONVENTIONS:** Tacitly understood traditions when applicable.

The basic philosophy behind the standard is the level of desirability and acceptability. The idea of setting standards is based on preventing the building of undesirable houses in the future.

The ideal housing, if not attainable by the poor majority of the society is merely a utopia. The unrealistic standards from the ideal housing has resulted number of problems. In the numerous low income housing program of cities ranging from Bangkok to Bogotá, Calcutta to Caracas, Lusaka to Lima and Kathmandu-Karachi-Kabul, the experience has been the same, that is, unrealistic standards do not work. Therefore, housing standard in the given context should be based upon what is feasible.

Finally, implementation of effective housing program at community level requires linkages between local community awareness a commitment – targeting a Plan of Action into an **ACT NOW CONCEPT**.

**TURNING THE LOCAL HOUSING PLAN INTO ACTION.****ACT NOW CONCEPT****AWARENESS**

- a) Local people to be aware of how they can contribute and take control of their own lives and their communities.
- b) Private, statutory, voluntary and political sectors understand the part they can play.

**COMMITMENT**

- a) We need real commitment to carry out the action. This commitment will be signed and endorsed as an action level commitment by all those who have a part to play.
- b) This applies to all those who create public policies and provide public and private services which impart on quality level of housing and health.
- c) This equally applies to local people who have a right to be involved in decisions that are taken about their daily lives and equally a responsibility to take control of their own lives and contribute to life in their community.

**TARGETING**

- a) Resources will be directed to those areas and groups of people who experience the greatest effect of poverty and disadvantage.
- b) The plan will be measured to demonstrate effectiveness.

## **CONCLUSION**

In Nepalese context, the devastating earthquakes in the past have proved the vulnerability of most of vernacular buildings of Nepal. Enourmous amount of life and property were lost due to the collapse of buildings which employed mud walls and weak structural walls as their main load-bearing elements. Earthquakes can neither be prevented nor predicted precisely. But the large-scale destruction can be minimized by creating an environment of proper exercises of citizen participation on disaster mitigation measures. Therefore, the public needs to be informed about the nature of earthquake hazards to which it is exposed and possible protection available. People's awareness of the risk involved and of the opportunities for the protective action is essential for successfully implementing risk reduction strategies. The general public should be directly involved in the awareness, preparedness and partly awareness educational planning at the community level. Therefore, it is very essential to have a mass communication and awareness education at the micro and macro level in Nepalese context.

Finally, international cooperation fully helps and accelerates in the process of Disaster Mitigation measures in Nepal, because there is much that needs to be done in the field of disaster mitigation. Through people participation concerted action by all concerned, it can be done properly.

Today, we need a basic action oriented management plan, which can reduce damage and loss of life from earthquake in Nepal. The plan must be prepared in detail about the civic awareness and other programs such as education, training and transferring the effective practices will achieve towards safer life of the people and also seismic resistance of non-engineered structures.

**THANK YOU!**

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