HOLISTIC RESILIENT ECO-EFFICIENT SCHOOLS in the PHILIPPINES

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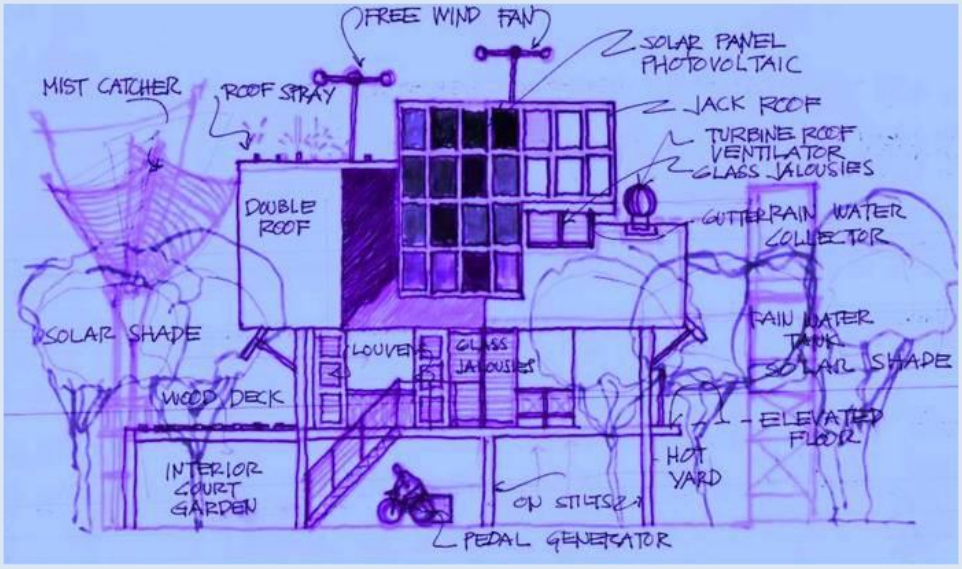

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REPORT ON:

UN ESCAP- DOST 7- CHORA ARCHITECTS WORKSHOPS ON THE HOLISTIC RESILIENT URBAN INFRASTRUCTURE DEVELOPMENT FOR BOTH NATIONAL AND LOCAL LEVEL

National (Manila), Cebu City, Tagbilaran City and Tacloban City

A. General

National and Local workshops on Hoilistic Resilient Urban Infrastructure Development were conducted in Manila, Cebu City, Tagbilaran City, and Tacloban City. All Cities and surrounding regions experienced the devastating effect of "Typhoon Haiyan" thought to be the strongest to hit the Philippines; and destructive effect of the recent earthquake except for the National Capital Region. It was implied that knowledge imparted is of great help in formulating policies both national and local levels of the Government. Furthermore, they found the ideas presented relevant and useful specifically ideas on the holistic resilient eco-efficient school (UNESCAP-DOST 7- CHORA architects) and the eco-efficient water development and integrated storm water management (DOST 7 –UN ESCAP project) in disaster preparedness and post disaster management as well as in housing.

The workshop exposes the weakness of current policies and ordinances. These are manifested by outdated and unsustainable codes, unavailability of planning guide, absence of adaptive and resilient codes, and education needed on current and future policies.

National Building Code

It was further suggested that good practices in eco -efficient water, storm management be included in the national building code.

Education

One of the most interesting and note-worthy aspect during the course of the workshop's discussion is education. Ideas including its benefits were brought up on incorporating and integrating holistic, resilient eco-efficient infrastructure in Engineering and Architectural

curriculum. It is implied that education starts in the grade school level specially the knowledge of eco-efficient water development and storm water management on small scale level.

Disaster Preparedness

Mostly the participants in Cebu, Tagbilaran and Tacloban workshops Resiliency linked to disaster preparedness and disaster management. These areas experienced the devastating effects of typhoon "haiyan" and the 2013 earthquake. The ideas presented specifically the holistic and resilient infrastructure which offer the idea of build and design better. The idea of storm water management, rain water harvesting and the concept of typhoon- earthquake resistant structure designs are needed in today's normal – "the new normal". Implied was the concept of the inclusion in disaster management and disaster planning.

Capacity Building

In the course of the workshop, discussions were made regarding building capacities for both national and local levels. Discussions focused on disaster stricken areas specifically in Bohol and Leyte areas were people are in a slow process of rebuilding their lives. Queries were made on UN ESCAP capacity building programs be made available if there is any that might suit to present and future conditions in these areas.

Policy:

a. Promote sustainable initiatives and practices in protecting the environment and for a sustainable Philippines.
b. That government and the private sector demonstrate commitment to holistic resilient eco-efficient program by resilient adopting good practices and incorporating good these good practices to the National building Code.
c. That Holistic Resilient eco-efficient infrastructure features and good practices be included in the disaster management plan as well as mitigation and adaptation strategies for a responsive and resilient future.
d. That the policy makers and government promotes and support sustainable
e. Rain water harvesting and storm water management be incorporated in the national Building code as well as national and local policies as they are needed resource in times

of emergency and disaster.

f. Support sustainable application waste water and waste water management to protect our water sources and aquifers. That the government shall institute measure regulations and implement programs and projects that prevents the depletion of water resources. Support sustainable application rain water run-of management to protect the environment and prevent flooding.

B. General Concerns

The following concerns and issues were discussed;

1. Concerns and ideas were entertained with regards to the applicability of Holistic Resilient eco-efficient Urban infrastructure‘s applicability to rural setting, questions on how “Holistic Resilient Urban Infrastructure” be translated into rural and small community infrastructures specifically eco-efficient water infrastructure.

2. In local workshops conducted specifically in the cities of Tagbilaran, Bohol and Tacloban City Leyte, the participants stated the need of information from UN ESCAP regarding best practices of holistic, resilient eco-infrastructure. There were concerns on transfer of knowledge gained from the workshop to community, colleagues and local government line agencies.

3. Mostly in local workshops (Cebu, Tagbilaran and Tacloban) suggested that UN ESCAP we promote Holistic and Resilient Infrastructure to higher authorities as policy guide. There were discussions on the positive technical inputs relating to application. The problem stated in reference to this issue is on how to promote “Holistic Resilient Eco-Efficient infrastructure Concept”, one of the suggestion is go directly to higher level of government instead of going directly to the local government line agencies. It was expressed and suggested that it is not possible for them to implement unless the upper structure of government order then to do so.

4. Another important aspect is how to translate this knowledge to the basic unit of the Philippines society which are the “Barangays”. Clearly the workshops on local level imparted a very important knowledge that they want workshop’s positive inputs reach the lowest level of the Philippines society which are the “Barangays”.

5. The integration of Holistic and Resilient eco-efficient infrastructure in school curriculum.

6. As part of information dissemination more training and workshops should be conducted as part of awareness and education related to the environment and disasters.

7. It is further suggested that in order to improve further discussion on the advantages and disadvantages taking into consideration material specification and system. It is implied that the theory is good with room for improvement. They further suggested that adjustments be made in reference to different setting whether urban, rural, lowlands and upland.

8. There are questions on whether UN ESCAP support such Holistic Resilient Eco-efficient Infrastructure related projects and other ESCAP project initiative on local level meaning per municipality basis. Representative from local governments want to avail of UN ESCAP project program but do not know how to access or avail of such project.

9. There were concerns on how ESCAP can help in capacity building specially in disaster stricken areas such as Bohol and Leyte.

10. The Department of Public Works and Highway suggested that this workshop to the secretary of Public Works and Highways.

11. Great concern for sub-standard building materials flooding the market.

C. Specifics Discussions and Observations:

Manila (National) comments:

- Someone from the DOST pointed out that there is an existing wind tunnel facility in UP Diliman which might be very useful for CHORA's current study on green schools, considering that the simulations CHORA based for their designs is only limited to the virtual world.
- Someone pointed out the importance of the architecture profession because of the difference of the outputs between an engineer and an architect. It is noted then there is still a big misinformation on what is the scope of work of both the architect and the engineer. Both are in essence, relevant to the realization of an optimal built environment which is meant for the public good and the environment, as well.

Tacloban comments:

- Mr. Archimedes Vergara *(DPWH, A-2)* & Mr. Zotico Pastelero *(LGU Palo, Municipal Engineer)*
    - They are concerned if the Green School Buildings presented, has been applied by DepEd especially that they have lots of buildings to be constructed after the calamities last year. Is DepEd still currently using their old practices for their future projects?
- Mr. Andres Abusman *(EVSU- College of Architecture, Dean)*
    - He is very concerned with the materials used in the Green School Buildings, what materials were used, what are the alternatives, and how much will it cost.
- Ms. Jam Colas *(NEDA VIII, EDS II)*
    - Asks for complete drawings of the Green School Buildings. He asks if he can get a copy of it and if it is already ready for implementation.
- Ms. Gerardo Peñeda *(DSWD, Engineer)*
    - Stated that if we plan to change the DSWD's system or practices of construction, It should be directed to the national board of DSWD, since LGUs focused on

implementations of DSWD projects and they only follow instructions from national.

- People suggested to compare the base cost of the resilient school buildings with the prototype developed by DEPED to determine the costs and benefits of each subsystem employed.
- People are wary if the emerging school concept will tip over.
- People mentioned that the cost to maintain the Korean stormwater system with its filters is more expensive than the savings gained from utilizing the system. However an Engr. said that people can improvise a lesser cost system utilizing chlorine and basic filtration systems.
- Somebody suggested to merge the wastewater cistern with a ram pump so that energy savings can be realized. The height differential of the roof and the rainwater cistern is enough to drive the ram pump.
- People suggested that CHORA present to the heads of the regional offices like the DPWH for the construction of schools, and DEPED for the specification of schools in the province so that people with more decision-making authority can assess and directly apply the ideas that are presented since the people in the forum cannot directly apply the knowledge gained.

Bohol Comments:

- They are concerned if the Green School Buildings presented has been proven and has been built.