

**Title : CURRENT STATE OF WOODEN ARCHITECTURE
IN INDONESIA**

**Sub Title : Development and dissemination on Wooden Architecture
In Indonesia**

1. BACKGROUND

Wooden Architecture have been widely known for a long time in Indonesia, due to several likely reasons such as geographical condition, tropical climate, abundant forestry resources, and supporting local culture, for Indonesian society to build buildings and houses by using wood as main materials, each in own distinct local culture and tradition.

In practice, wooden architecture considerably can still be seen on various buildings or housing groups which is notably recognized in the following groups:

- a. Traditional buildings, includes the ancient historical/ heritage building such as Keraton / Palaces. These old buildings spread out from eastern to the western part of Indonesia, and more than hundreds of them found in 468 town/cities, for example: Aceh, Minangkabau, Malay, Sunda, Java, Bali, Lombok, Kalimantan (Borneo), Toraja, Bugis, Papua, etc.
- b. Timber buildings located in certain geographical, such as; tideland area, mountain area, rural area, and timber producing area, uses wood as main material either as construction or as finishing materials.
- c. Semi permanent and temporary shelter, most of them built by the low income people, such as found in slum dwellings, river banks, railroad bank, and in the rural area.
- d. Dwellings or simple building block, which due to the local customary culture, is still attracted and fanatic on the use of woods as the building's main fabric, and
- e. New contemporary building which were design to achieve special purpose, such as: creating traditional ambiance, or imitating of old buildings, and building to reflect the Indonesian tropical architecture, such as government buildings, hotels, showrooms/ exhibition halls, commercial buildings, restaurants, even homes.

In this excerpt, the discussion will be emphasized more on the government effort to implement wooden architecture norms on traditional (architecture) buildings and the newly built construction which accommodate the demand of creating traditional ambiance, especially relate to the building requirements and reliability, and to disseminate the norm/ regulation to the stakeholder, nation wide.

2. ISSUES

Considerably, the government concerns were still not at present on undertaking wooden architecture in systematically, this issue linked to the trainings, regulation of timber /wood trading, the fabric standardization and construction, preservation, building inventory, and also the associated parties involved in wooden architecture such as universities, professional association, specialist, and industrialist with less significant supports.

Nowadays, we have no accurate data on the total number of the wooden building, i.e; type of building, condition, etc, due to the lack of survey and record attempt on built-buildings thoroughly.

3. PROBLEMS

In general, there are many challenging issues concerning future development and promotion of wooden architecture in Indonesia, such as:

a. Scarcity of timber

Totally, forest area in Indonesia decreased periodically caused by legal or illegal logging. Approximately, 80% of available timbers are not categorized as a good construction material. Although each year annually, timber construction, (for housing necessity only), requires 2.4 million m³ or in equivalent with 100.000 ha of forest wood. Assuming 700.000 houses will be built each year, estimated each house would acquire 3.46 m³ of timber.

Indonesia is however dealt against the serious timber scarcity problems which relate to the forest decrease, moreover, the upcoming issue on global warming stated that, Indonesia must preserve its forest and keep it in function as one of the world's lungs, which also meant stop the timber logging.

b. Scarcity of Traditional Buildings

In coherent with the culture and architecture development in the West, which considerably creating great impact, especially affecting the culture changes, paradigm, habits, practicality and efficient point of views, and also triggered by the social and economical conditions, for some of the Indonesian community have less interest on traditional buildings. The condition were caused by the complexity and varied activities emerged requiring spaces / newer built buildings, since, the existing traditional building could not accommodate these emerging needs, due to it's costly expense and limitation on timber-material availability.

For the existing buildings, maintenance and preservation issue can be one identify as one of the factor causing the decrease of traditional buildings numbers, whilst the experts /

carpenter specialist on traditional buildings also triggered the decrease of the newly-built traditional buildings.

c. The bad image.

For some society, wooden building gives the negative impression of temporary shelter or a semi permanent construction, and most probably used by the low income people. This impression cause on the trend of rural communities to replace their wooden building to concrete structure. For them, the new concrete building look good and similar to other building in big cities (give the urbanized impression), which sometimes would differ its geographical and habitual fitting.

d. Construction and maintenance of the building

Currently, timber price have increased largely in Indonesia, especially timber-construction material with standardized strength and certain preserved scale, for example; an export quality teak wood would reach US\$ 2.500 / m³ in price, while the Borneo-wood would reach about US\$ 700 / m³.

Moreover, considering to the high rainfall, humidity, high temperature average in Indonesia, caused the existing flora such as mold, and fauna such as termite, bees, and other wood-hampering fauna, causing the building maintenance and preservation expensive, especially for wooden building with many intricate details and ornaments.

e. Timber industry

Not so many people are interested in developing and creating wood base industry, which include sorting, preserving, and strengthening timber material in an innovative way, especially in the line of alternative construction-wood provision.

f. Limited application in new building construction

Conventional wood/timber possess its limitation usage mainly when it is applied for more than 2 stories building, which in turn would be problematic for the newer built, therefore, a breakthrough is required in supplying more innovative construction wood.

g. Limited of expertise on wooden specialist

Wooden building require expertise either by engineers, nor a competent specialist in term of safety (earthquake, structure, durability, fire resistance and termite) and performance/aesthetically and also philosophically specific to the traditional architecture, which conceptually differ from one building to another, from one region compare with other region. For example, in Balinese traditional architecture, it is notably known of the *undagi*, whilst in Batak traditional architecture it is known as *gorga*, and in Toraja it is known as *pande*. Unfortunately, there have not yet been any existing data pointing the exact number, spread, and the existing association of these specialist groups.

There are some researcher specialist who studies in traditional buildings, carpenter who

is expert in traditional wooden architecture, and lecturer in some universities, also in Ministry of Public Works and Ministry of Forestry. There is no special association in wooden architecture, nevertheless there are groups in some associations such as: architect, engineers etc who are concern with wooden architecture.

h. Safety (from fire)

Wood is vulnerable to fire. Accounting the fire rate number in Indonesia is high in average especially in the high density area and in predominant with wooden-built buildings.

Some of the heritage buildings or traditional buildings and the surrounding neighborhood, particularly the preserved ones are likely exposed to fire, which in this case would require effort on outfitting the kit and tools for evading fire.

4. EFFORT

Facing on problems, effort on preserving and even further on developing wooden architecture in Indonesia, these various steps are taken into account which can be described as follows:

a. Government Policy

In lieu of meeting safety requirements and giving out the building's architectural identity, and in parallel sustaining the timber-construction supply as one of wooden architecture's main fabric, The Government had ratified several legal Acts, Standards and Technical Guidance on the usage of wood/timber as construction materials; whilst experts and society redress the norm and values on wooden-built buildings.

Further on, in the field of building and construction, Building Law No.28 / 2002 had been enacted, which comprises following acts:

- 1) The building's architectural requirement, identified by the local neighborhood and surrounding fitness, include the implementation of the architecture characteristic rendering its identity.
- 2) The importance of building registration in achieving order in building development and utilization including the management information system (MIS)
- 3) The safety regulation requirements on buildings, especially for the structural ability in against strain and pressure including earthquake, efforts in fire prevention and resistance, also against lightning threat and the closely related electrical installation system
- 4) Preservation of protected building in accordance with National Law No.5 / 1992 on Cultural Preservation Site.

- 5) National guidance campaign, together along with the local government, professional association, and society concerned with Buildings, includes dissemination for all stakeholders.

Thus, the central and local government working alongside with the expert society, and Universities formulating technical guidelines and standards correlate with buildings specifically wooden-built, such as " Design Procedure for Timber Construction in Indonesia", Ministry Regulation on Preservation, lumberwood utilization in general and and also managing timber construction usage. The effort also

b. Expertise Supports

Several research on construction wood have already been done to support government programs, such as: preservation, strengthening, utilization of fast-growing trees in sustaining the supplies of construction wood. Regarding the issue, Directorate General of Housing and Settlements in Bandung have already retained a completed study which evidently ready and available, yet the costly budget suspends its implementation

c. Development

According to the Building Law, Government shall give nation wide direction/guidance on building construction, and provincial government shall implement the direction together with community associated with the buildings construction (experts' society, professionals association, company association, building owners and users, local government apparatus) to the people.

The guidance consists of regulation arrangement, empowerment, and supervision activities, so every building construction can be carried out orderly, reliability in accordance with the function, and the legal certainty can be realized.

In terms of wooden architecture, government regulates the development as follows:

- 1) Government Buildings in local region, should adapt the local distinct architecture in gaining its local identity, and preservation.
- 2) Cities/town should have Teams of Building Experts which were assigned to conduct checking and supervising building reliability standard requirement and the building fit with its local architectural fitting with its local surroundings neighborhood.
- 3) Cities/towns should conduct building registration and manage the information system which include wooden architecture and preserved buildings.
- 4) Regulation on administrative and technical requirement for traditional buildings, semi permanent and temporary buildings, and the building constructed on disastrous area shall be determined by local government in conformity with the local social and cultural condition.

- 5) Traditional Architecture Inventory by some local governments in cooperation with university and architect, conducting seminar and technical discussion
- 6) Cooperation with expert and institution in order to get a new standard and technology on wood construction.

d. Dissemination

Government through the Ministry of Public Works cq. DGHS, Directorate of Building and Neighborhood Development each carry out series of dissemination on regulation, such as:

- 1) Law, in relation with Public Works agenda
- 2) Government Regulation
- 3) Technical Guidelines and standards
- 4) Lates Issues, eg: wood construction, MDG, global warming, poverty alleviation, illegal logging, etc.

Hence, the program target reached local government, in Provincial level/ cities/ towns, Universities, professional associations, and private association, and also, society in general.

Nevertheless, in considerate with the government limitation in providing time, resources, and budget availability, some part of the dissemination itself was delegated to the local government and the team of experts, hopefully the effort will reach further and wider impact.

Alongside, effective means on disseminating rules and regulation should be developed in achieving better information transfer, these effort consist the following example: creating communication forum and information, seminars, workshops, technical discussion, and also established Building Information Center completed with the website network.

5. REMARKS

Finally, I sincerely hope that this paper would provide a contextual framework (Development and Dissemination) which wooden architecture development can be addressed and discussed in this one day session and the result of this conference would provide a positive and useful contribution to our effort in achieving **sustainable wooden architecture**.

Through this Asia Forum, in improving teamwork among Asian countries it is necessary to do the following;

1. To promote cooperation among member in handling wooden architecture development problems, such as **establishing National Policy, encouraging wood construction industry and research centre, cooperation among parties relate to,**

traditional building preservation, incentive /disincentive system, networking and information system, etc.

2. To exchange some ideas and best practices in the wooden architecture development, in order to set up **potential technical cooperation among countries**.