

Redefining the Bamboo Culture for Future Architects and Interior Designers in Polytechnic University of the Philippines

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Abstract:

The solution to most of our problems can be found in looking back to our resources by cultivating and maximizing their potentials. This is what the lowly bamboo represents. It is, to most, an underestimated underutilized sustainable material. The Philippines has an abundant supply of bamboo. Literature on its taxonomy, cultivation and propagation are overwhelming. Significance of the culture and traditions of the Filipinos cannot be denied from the table for food, as utensils, instrument in birthing, scaffolds in construction and furniture. However, it is almost always regarded as a second or third rate choice in terms of being a main component as a construction material. In other countries all over the world they have recognized its high potential as a chief material in construction. In the Philippines, knowledge and acceptance of the bamboo as an integral structural element of a building has not been fully appreciated by both the architects and the users. In order to cultivate a higher awareness on the wide potentials of the bamboo to the students, other professionals in the industry of construction and the end users a series of exposure activities have to be instigated.

The university has expressed its commitment of creating an epistemic community where research and development becomes the core of its existence. In the study of WK Kellogg Foundation of 2008 they have identified how innovations can be systematically developed in the three (3) stories, to wit: the Medici Effect, the Googling Innovations and the lessons from the laboratory. All of which are guiding principles in developing a bamboo culture for the students of BS Architecture and BS Interior Design students of the Polytechnic University of the Philippines for a more sustainable construction industry.

Key words: bamboo culture, bamboo awareness.

Introduction:

The College of Architecture and Fine Arts of the Polytechnic University of the Philippines spearheaded a seminar and workshop with the objective of using the activity to cultivate camaraderie among the faculty and staff and the students of the Department of Architecture and Interior Design. The department needed a vehicle to unify the college using a common denominator which is the insatiable thirst to create and identify materials that are accessible to the students both physically and economically. Bamboo, inevitably, was the choice because it was readily available and relatively inexpensive.

The initial objective of the activity was to bring the whole community together by exploring the bamboo in creative design. However, after the first year of its conception there was a need to look deeply on the potentials of bamboo as a sustainable construction material. The Department of Architecture and Interior Design in its quest to address the vision of the university which is:

Transforming PUP into an epistemic community or a network of knowledge-based experts who help decision-makers define the problems they face, identify various policy solutions and assess the outcomes (Observer, 2012)

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looks into promoting a bamboo culture in architecture and interior design beyond the traditional use and form. There should be a deliberate effort of the university in general and the college in particular to promote awareness to the use of bamboo and the potential of this sustainable building material.

Study Area

There are around 880 students in the College of Architecture and Fine Arts, around 680 students in the BS Architecture Program and 280 in the BS Interior Design. In November 15, 2013, a group of 4th year architecture students initiated the first one-day Seminar/Workshop for the students of architecture and interior design. There were 286 participants from all year levels of the programs BS Architecture and Interior Design.

In 2014, a two-day seminar/workshop on bamboo was held in PUP for architecture and interior design students. The first day was an intensive seminar on the capabilities and versatility of bamboo as a material for creating structure for public art. The goal of day 2 was to allow the students to be familiarize themselves with the bamboo. Armed with their conceptual design the students created models using the bamboo strips with the scale of 1:50.

Result and Discussion

Bamboo embedded in the culture and traditions.

Bamboo as a material can be traced as deeply rooted in the lives of the Filipinos. From birth in the rural areas, midwives used a razor sharp bamboo knife to cut the umbilical cord of new born babies. The bamboo shoots are part of the meals cooked in different varieties from pickled, sautéed or braised. The bamboo culms are used as drinking cups and cooking vessels.

In music, the country takes pride of the Bamboo organ of Las Piñas in St. Joseph Parish Church. The organ was initiated by Fr. Diego Cera and it took him 8 years to complete the organ from 1816-1824 with 1,031 pipes, 902 are made of bamboo and the remaining pipes are made of metal. Polytechnic University of the Philippines has its own ensemble of bamboo instruments aptly called PUP Banda Kawayan performing all over the world.

Bamboo also finds its way to the Filipino Folk Dances. Tinikling, a dance that imitates the moment of the birds called tikling when they walk on rice fields, run over tree branches and try to escape traps set by farmers. The dancers maneuver their way through four bamboo poles rhythmically pounding it on the floor with an open close motion. Singkil is a dance that originated in the southern part of the Philippines. It uses bamboo poles in either parallel, rectangular or crisscross pattern while the ladies walk across it manipulating their fans and scarfs while a lady in waiting holds the umbrella over and a gentleman walks across.

The Philippine bahay kubo which literally means cube house utilized bamboo in different ways from main structural members, to the walls, flooring, roof and its windows and door. The bamboos are either cut, pounded, stripped or bundled.

Creating a Venue to Institutionalized Awareness to Innovations

The awareness level of most Filipino including students of architecture and interior design on the use of bamboo as a major construction material is limited to that of the bahay kubo. Bahay kubo is a Filipino vernacular house design seen before the Spanish colonization. (Figure 1)

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Figure 1. Bahay Kubo



Source: <http://theworldsureisamazing.wordpress.com/2011/06/10/the-bahay->

To date, the bahay kubo can still be seen in the rural areas as dwelling units. In the urban areas it is sometimes used as a gazebo in the garden and in some cases as seating areas in alfresco dining. The cube type form of the bahay kubo has not evolved much. It would be noteworthy to state that there are attempts from young individuals to explore the bamboo using the modern forms and lines. A very good example of which is the work of Christian Salandanan in his terminal project (Architectural Thesis for Academic year 2013-2014) in University of Santo Tomas, which was adjudged as best thesis in the College of Architecture- UST. The United Architects of the Philippines also bequeathed him the same honor where several graduating students from different schools in the Philippines competed for the title. The thesis project was also adjudged as one of the 12 best students' project in the recently concluded Architecture World Academy Awards an international design competition of more than one thousand four hundred entries. The Casa Kawayan (House of Bamboo) is a proposed research center for bamboo in the Philippines done by Christian Salandanan. (Figure 2.)

Figure 2 . Casa Kawayan (House of Bamboo)



The literature on the bamboo as the most sustainable building material to date cannot be denied. Studies on its structural integrity and its capacity to weather calamities has been explored by scientists and engineers over the years. In order to advance the promotion of the bamboo as a material there should be a deliberate move by the stakeholders, namely: the scientists, architects, engineers, designers, the government and the like.

As the department works with the vision of the university in transforming the institution into an epistemic community it becomes imperative to determine the direction to which one can create its niche. Innovation is the key to making a difference, an old material such as bamboo takes a new form with the benefit of modern technology.

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In the report of WK Kellogg Foundation of 2008, they have identified how innovations can systematically be developed in the three (3) stories. First, the Medici Effect. Medici Family played an important role in the rebirth of humanism during the Renaissance period. The lessons from Medici was summarized in four parts: a) collaboration; b) create an active support system; c) change agents are needed; and d) use new technology.

The second lesson comes from Googling Innovation: a) get everyone involved; b) promote creative line; c) encourage volume, speed and iteration; and d) embrace failure.

The third came from the lesson of the lab: a) open up the innovation process; b) provide a full range of support for innovators; and c) tap the creativity of “lead users.”

The three lessons are all evident in preparing the students of the Department of Architecture and Interior Design.

Response to the rediscovery of Bamboo as a construction material

The Department of Architecture and Interior Design has hosted a seminar/workshop for two consecutive years, entitled “Tabak Kawayan” (Cut Bamboo). The first was a one-day seminar/workshop on November of 2013. The workshop was participated in by 150 students of all levels both from the Architecture and Interior Design Program. The main objective of the activity was to provide a venue for the students to work together and develop camaraderie. Bamboo then was just a back drop of what was felt as the main focus of the event which was the acquaintance party where the group of students will have to exhibit their works. Some of the projects developed in the 1st year are as follows (

Figure 3 . Models for Tabak Kawayan 2013



The result of the 1st bamboo seminar workshop was overwhelming with the participation of the students. In 2014, the Department of Architecture recognized the need to emphasize and focus on the bamboo as a construction material. The goal was to reach as many students as possible and introduce to them the bamboo in a perspective of a designer and builder. The bamboo culture in the Philippines is limited to: being a food (bamboo shoots, the young bamboo for cooking), furniture and ephemeral structures most of which as homes for financially challenged families. The day of reckoning was to put up an exhibit for September 18, 2014. Tabak Kawayan 2.0 opened with a lecture on awareness of students on the bamboo beyond the Filipino culture and traditions. The students numbering to more than 200 were given an assignment to conceptualize a structure that represents the university and that can be built, used and enjoyed by the community. There were 180

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concepts submitted in the department after the lecture. The 2nd phase of the activity was the actual workshop. Students after consultations with the architects, did models of their concepts. Around 30 models were put up for the exhibition. The community participated by voting for the People's Choice Award. The winner of the People's Choice Award was submitted by a 3rd year Architecture Student (Figure 4)

Figure 4 . People's Choice for Tabak Kawayan 2014



The structure took its inspiration in the logo of the university.

"The star in the logo stands for the perfection of the human person as well as the search for truth, while the five concentric circles depict infinite wisdom. Both the five-pointed star and the five concentric circles stand for quintessence, meaning the highest form of quality or the most perfect example of creation. The two arcs of laurel symbolize excellence and quality of education as demonstrated by the rich achievements of the University in over a century of its existence. The star is golden yellow not only because this is a star's natural color but also because, together with the dark maroon used as background, it is the traditional color of the University. The five concentric circles are white because it symbolizes purity." <http://www.pup.edu.ph/about/logosymbols.aspx>

The People's Choice will be constructed in the grounds of the main campus of the university to promote the awareness level of the community with the use of bamboo more than what it is traditionally known for. The PUP College of Architecture and Fine Arts Alumni Society together with the Sta. Mesa Chapter of the United Architects of the Philippines will assist in the construction of the art installation.

The exhibit was opened in September 18, 2014 during the World Bamboo Day. It was visited by hundreds of members of the community where several models from the Tabak Kawayan 2014 were showcased. (Figure 5)

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Figure 5. Models from Tabak Kawayan 2.0 2014

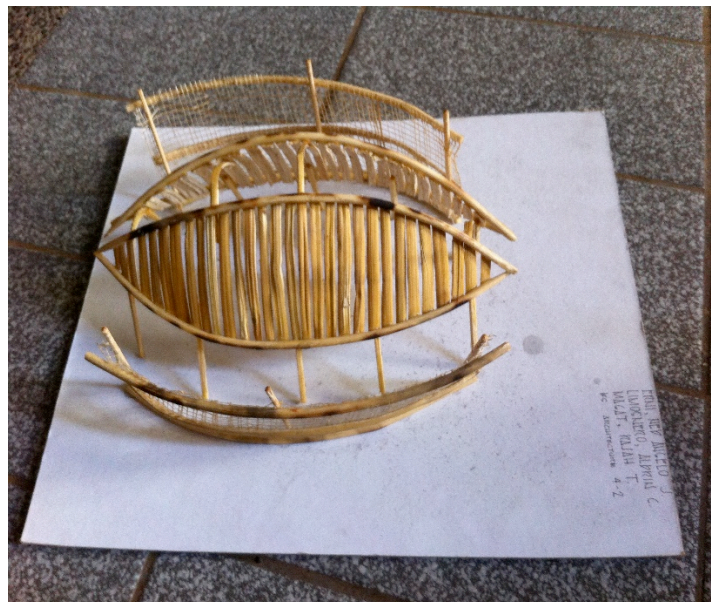


Conclusion



The lessons of creating a culture

of innovation and heightening the level of creativity through the use of bamboo



can be summarized into the following steps:

1. Awareness. People from the industry of design and construction need to be aware that there is this miracle material from mother earth known as bamboo that shortens the waiting period compared to wood.

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2. Commitment to collaborate. The university and the different colleges should be able to obligate themselves to research and development and to innovate.
3. Establish a strong support system. There is a need to institutionalize a group that would provide support that will propagate and nurture ideas.
4. Promote. The findings of research and development wherein the products from the design should be available to as many people as possible in order to instigate further development thereby growth becomes inevitable.
5. Continuously innovate. Agents of change should continuously be sought for sustainability.

The first steps in building the bamboo culture in the college is very evident and promising. The number of participants are exponentially rising and the creations are becoming more innovative and provoking. The next steps has to be carefully planned and assessed overtime. There is a need for the university to institutionalize the group that would oversee the progress of the activity. A multi-disciplinary group from the different sciences and engineering should be the backbone of creating the culture of bamboo beyond the tradition. There are issues on the bamboo such as propagation and handling. Joinery, fire retardant rating and the lack of design guidelines in the country are some of the problems that need to be addressed. However, its potential is still overwhelming as a vehicle of creative work because of its flexibility, resplendence and sustainability .

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