MULTI DISCIPLINE COLLABORATION BETWEEN ART AND TECHNOLOGY ON APPLYING VERTICAL CROSS CONFIGURATION FOR MAKING AESTHETIC BOARD

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Abstract: The stimulus in this study is to reduce dependence on natural resources, in this case timber, and preserve it from extinction. It is based on comparison between high utilization rate and imbalance with its availability. Field observations indicate that large utilization of wood is for making as a board. The condition raises motivation to find alternative creation of boards from non-timber materials, in this case urban waste. Various ideas, thoughts and applications are experimented to get best methods to produce board products from municipal waste as per required and feasible qualifications. After several stages of research and experimentation, a method called vertical cross configuration was obtained. In some advanced applications, this configuration has been able to help produce a strong, sturdy, and aesthetic board products.

The following study directs systematic thinking of identifying multi-disciplinary collaboration, in this case technology and aesthetics, on creation activities of vertical cross-configuration through utilization of municipal waste as raw materials. The discussion covers definition of vertical cross-configuration, discipline of science involved, interdisciplinary collaboration, resulting product and its utilization opportunities. Understanding of this study is expected to encourage people involved in the production process and application of aesthetic board utilization to take an active role in environmental conservation in a wider scope.

Keywords: vertical cross configuration, urban waste, aesthetic board, collaboration, discipline

PRELIMINARY

In general, vertical cross configuration is a method of arranging urban waste sheets that are thin, limp, and fragile to be molded into interior design materials called aesthetic boards. Aesthetic board is defined as a new type of board material, non-wood, that has a strong, strong, textured character and properties on its surface. So far, aesthetic board is made from waste paper and dried leaves and has a thickness between 10 - 20 mm. While width dimension is still not standardized. Aesthetic board is geared to function as a panel for wall, floor, ceiling and furniture applications.

The basic idea on creating method of vertical cross-configuration is Wucius Wong's theory of stocky. Wong mentions that design of a three-dimensional form deals a lot with real materials and shapes in real space. Three-dimensional design consists of elements of concept, among others: point, line, plane, and stocky. It can be argued that

this theory refers to elementary value of art associated with process of occurrence of basic forms. For more details of this discussion can be seen in the Results Discussion Section. From different perspectives, in this case the application activity, efforts to assist production process of vertical cross configuration cannot be separated from technological involvement. With appropriate technology then vertical cross configuration application process will run smoothly and right on target. The definition of technology itself is a means of human support in an effort to meet needs of his life, another opinion states that technology is a scientific method to achieve practical goals; technology is also referred to as applied science.

The following review will deal with two different premises: 'technology applications' that collaborate with 'art / aesthetic' approach to be achieved through vertical cross-configuration methods in an aesthetic board creation effort. Technology applications will be closely related to production processes, product standards, and functional implementation while art / aesthetic approach will lead to more rationale, visual form, and actual representation.

PROBLEMS

So far, art and technology are two contradictory things. Both are understood as two basic science that more activity individually. Art deals more with beauty, perception, and emotion while technology is more logical, real, and applicable. Both seem to stand in a corridor that is opposite to each other and cannot be collaborated. This study seeks to discuss and place both within the same corridor, the vertical cross-configuration application, where they support each other.

SCOPE

Identify the collaboration of premises that derived from multi-disciplinary science that are mutually different from one another. The premises include technology and aesthetics. The premise of technology will be much discussed about production process, implementation of functions, and product standardization. While aesthetic premise will be more to discuss ideas of thought, visual form, and actual representation.

METHOD

The study used a qualitative and descriptive approach to integrate multi-disciplinary applications, art and technology, in creation of a vertical cross-configuration methodology for aesthetic board manufacture. As is known qualitative approach is more practical that is closely related to human life every day. Understanding will focus on implementation of art as rationale, form value, and actual representation while technology as a product standard, production flow, and functional implementation. Their collaboration is expected to complement each other's shortcomings which will ultimately be able to produce a viable and relevant production system and final product.

RESULT

Art according to a large dictionary of Indonesian language is an expert to make a quality work, viewed in terms of fineness, beauty, and so forth.

a. Aristotle: art is imitation of nature but its nature must be ideal.
b. Plato and Rousseau: art is result of imitation of nature in all its respects.
c. Ki Hajar Dewantara: art is all human actions arising from feeling and beautiful nature that moves soul of human feelings.
d. Ahdian Karta Miharja: art is a spiritual activity that reflects reality in a work whose form and content to evoke certain experiences in its spiritual recipients.
e. Prof. Drs. Suwaji Bastomi: art is an inner activity with an aesthetic experience that states in a supreme form that has power to awaken a sense of wonder and emotion.
f. Encyclopedia of Indonesia: art is creation of all things or things that because of its beauty people love to see it or hear it. Something is said to be beautiful if it contains three main factors: (1) factor of perfection, (2) harmony factor, and (3) rays of brilliance. Harmony is an existence of elements of harmony, harmony, and suitability of composition between organs / components that one with another based on subjective criteria attached to it.

Vertical cross-configuration is a method for compiling municipal waste sheets to form a stocky sheet to be configured to form robust, robust, and dynamic texture structures. The idea of this configuration is derived from aesthetic theory of Wucius Wong in relation of formation of stocky relation.

In the book 'Principles of Three Dimensional Patterns', Wucius Wong mentions that design of three-dimensional form dealt with much of material and real form in actual space. Three-dimensional design consists of elements of concept, among others: point, line, plane, and stocky. The stocky definition is a path through which moving plane (in direction that is not toward itself) to form a stocky. Stocky as a concept has a long, wide, and high, no weight, determine amount of space it contains or occupied. The following figure is a stocky and its processed illustration:

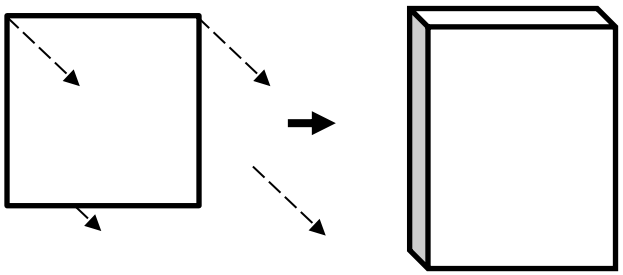

Figure 1 Stocky

Another concept holds that 'stocky is expressed by a series of fields' or 'some plane forms thickness'.

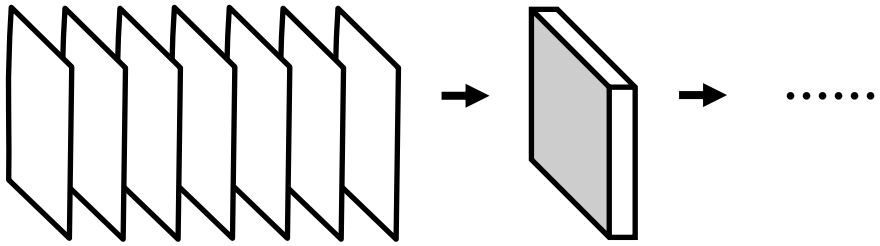

Figure 2 Stocky Process

Wong mentions that field spacing can be narrow or wide, with different faces. Narrow field spacing is impressive in density / thickness while wide spacing weakens impression of stocky. From here it can be concluded that attached plane will form density / stocky. This stocky formation process underlies initial idea of creating a vertical cross configuration.

Meanwhile, related to technology, there are some understandings that can be described here, among others:

a. Miarso (200: 62), technology is a process that increases the added value, process uses or produces a product, resulting product is not separate from other existing products and therefore become an integral part of a system. Technology is an ability to apply an understanding and intelligence to make something of knowledge with a product, related to art and based on knowledge of extrater science based on application and implication of science itself (p.117)
b. In the Random House Dictionary as quoted Naisbitt (2002: 46), technology is as objects, an object, material, and a form that is clearly different from humans.
c. According to Kamus Besar Bahasa Indonesia (1990: 1158), technology is:
   1) Scientific method to achieve practical purpose of applied science, as well as
   2) The whole means to provide goods needed for survival and comfort of human life.

Technological applications in this vertical cross-configuration method are observation of sheet characters from municipal waste to elicit alternative structural opportunities and visual appearance that can be generated. Understanding character of sheet, as a first step, is helpful in determining pattern of base material treatment, planning form and volume that can be achieved, creating system / production flow, as well as selection of supporting materials and tools. The second step is to experiment on each of these opportunities and make it into several prototypes. An applied configuration emphasizes density and strength of vertical position on each piece of urban waste material used. Cross-vertical configuration performs its role optimally by only being supported by cheap and easily found adhesive glue in market, like polychloroprene contact adhesive type. The third step is to test each prototype to know its ability. The fourth step is to evaluate and revise each prototype. The fifth step is to determine best configuration to move on to next step.

From the steps that have been passed can be concluded that vertical cross configuration is the best configuration that can be produced and recommend to apply in this research. The consideration is that resulting structure is strong and rigid as well as opening of opportunities to create an aesthetic surface appearance. Here's a vertical cross-sectional application process diagram of a waste paper:

Figure 3 Applying scheme of vertical cross configuration

The vertical cross-configuration consisted of 4 structure layers, 2 layers of outer layer (horizontal layer) and 2 layers of internal structure (vertical layer). The process of formation can be described as follows: a 'deep structure' arrangement utilizing two stocky fields comprising a vertically arranged arrangement of sheets. Each sheet of stocky field were glued to each other intersecting. Crossed positions provide strong compressive strength. After adhesion can be realized then next step was to start pasting outer layer one by one to lock vertical layer horizontally as well as forming texture of

outer surface. Adhesive outermost layer until it consisted of several layers and formed actual texture produced by core layer. Then, an aesthetic board was formed.

From above discussion it can be seen that in general art and technology can support each other in the creation activities of vertical cross configuration in accordance with role and ability of each. Art provides an understanding of form and beauty, while technology provides application and production solutions. It is clear that in creation of vertical cross-configuration, two disciplines can stand in a linear and mutually supportive way from beginning of thought to creation and final results. Thus, an initial understanding that art and technology are self-contained disciplines has got a rebuttal that cannot be doubted. It is hoped that in every progressive step in the future, multi-disciplinary cooperation will continue to be developed and more progressively to support human life.

CONCLUSION

Art is a skill to create a quality work, viewed in terms of subtlety, beauty, and so forth (Big Indonesian Dictionary 1989). While technology is a tool or means to produce a product or goal to be achieved. Technology and art are two things that should be placed linearly because they need each other in producing everything. The application of technology and art is an application of basic science to solve problems in order to achieve a certain goal, in this case an application of vertical cross configuration to produce and produce aesthetic board.

Art is the basic of knowledge of various things that exist today. Francis Bacon says science is power so technology is a tool of power. So, science must be useful to others, not just to satisfy some interests of owner himself. The development of technology and art goes together and mutually supportive of one another. Likewise in the vertical cross-configuration application activity.

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