Creative sustainability initiative for Jakarta’s urban spaces

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Abstract. This paper will discuss the creative initiative made by designer, architect, and contractor under the JKT Play movement and community towards the urban spaces in Jakarta. Their initiative is intended to encourage creative activities, and playful experience for the citizens, and as an alternative material to support sustainable architecture concept. The discussion will be based on the project’s collaboration by designer, contractor, multinational company, food and beverages industry to create playful objects which can be used and explored by the communities. The initiative is based on the concern of the consumer waste, especially plastic cup, paper, and plastic bottle. The project has opened opportunities for creative industries, and designers to rethink and to approach the design methods and design exploration towards plastic wastes. It also can be a tool as an urban fabric or installation that can help creating colourful atmosphere for the city of Jakarta.

Keywords: creative, initiatives, urban, plastic, Jakarta

1. Introduction

Three billion of earth’s populations in the present-day live-in cities, and nearly all of the exponential increase in population expected over the next fifty years will be urban [1]. Jakarta as the capital city of Indonesia has the population of more than 10 million people. It’s already has become one of the densest cities in the world, and it is facing huge problem from over population that might affect several sectors, such as health and economic sectors. One of the problems that we face today is the plastic waste pollution, Biodiversity is decreasing rapidly throughout the world. Aquatic environments, for example, have dropped 50 percent of their biodiversity since the 1970s. One main reason is plastic pollution. Bottled water has become an essential cause of plastic waste, along with single-use straws, food containers, cutlery, and other plastic objects. Plastic waste is jamming up landfills, blocking drains, poisoning waterways and causing to biodiversity loss. Plastic waste on roadsides and beaches and in other public spaces is an eyesore [2].

JKT Play movement is a creative initiative by Rony Rahardian and Albertus Prawata. Their role and profession as designers, and entrepreneurs have shaped this movement, and they want to contribute more to Jakarta using their skills and capabilities. This year, JKT Play has been focusing on creative sustainability concept as the generator for their activities. As an entrepreneur through Ruang Seketika, a coffee shop, as well as the owner of ONX Idea Studio, Rony wants to process the consumable media, plastic cup and paper, that have been used to be reprocessed into a new media that can be widely appreciated. This reused material or media also can be used as an alternative building material, thus Albertus, as an architect, can integrate the material into the design scheme, so it will...
bring benefits and strong message towards recycling and sustainable architecture point of view. This collaboration is one of the starting points to challenge sustainability issues from their activities and professions. JKT Play can become a generator for creative industries to rethink the way for designers to be responsible in a more comprehensive and tangible way.

2. Methodology
Consumable media, plastic bottle, plastic cup, and paper cup are the media that become the main materials for this creative initiative. JKT Play movement wants to search and find the solutions to the plastic wastes, so that it can be reused and produced as a new media for creative and functional elements for Jakarta’s urban spaces. The program called, creative sustainability has created an idea especially for creative industries and third-wave coffee movement in Jakarta and other large cities in Indonesia to rethink how to reduce the use of the plastic cup or bottle, and how to recycle them into something useable and valuable. Kopi Tuku, one of the famous coffee shops in Jakarta has been operating since 2015, has sold 300 up to 500 cups a day. Ruang Seketika, a coffee shop owned by Rony Rahardian, sold around 100 cups a day. The use of plastic cups and bottles daily are so massive, and it is only from two coffee shops. How many plastic bottles and cups have been used daily in certain areas to serve coffee enthusiasts and drinkers? How many for the whole greater Jakarta? The numbers are unthinkable, and it is quite scary thinking about the waste impacts to the environment. Furthermore, this paper will describe and identify the creative actions from the JKT Play movement to confront the waste challenges, and turn them into urban fabrics, urban elements to architectural elements and materials. These actions can be identified as examples and solutions to tackle the plastic pollutions problem.

3. Results and Discussion
Mass fabrication of plastics began just six decades ago. The bottled-water business, however, started off after the commercial introduction in the 1990s of single-serve bottles produced from polyethylene terephthalate (PET), or polyester plastic. Made from crude oil and natural gas, PET has assisted turn water — and other drinks — into convenient and lightweight consumer goods. But PET takes hundreds of years to biodegrade and, if incinerated, it produces toxic fumes. Other types of plastics are also damaging land and water. They contain low-density polyethylene, which produces bubble wrap, shopping bags, plastic bottles and wire and cable insulation; high-density polyethylene used for to create trash bins, toys, garden furniture, detergent and bleach bottles, jugs and buckets; and polypropylene originate in bottle tops, diapers, lunch boxes, drinking straws, insulated coolers, fabric and carpet fiber. About 18 percent of plastic waste is recycled globally — and slightly more in Japan. The rest ends up as trash and waste. For instance, tens of billions of easily recyclable PET bottles are removed as garbage every year [2]. Plastic is one of the most disposable objects in the modern world. It produces up much of the street side waste in urban and rural regions. It is quickly adding up landfills as clogging water bodies. Plastic bottles add up approximately 11% of the content landfills, affecting serious environmental effects. Due to the concerns some of the plastic facts are as follow:

- Further than 20000 plastic bottles are required to obtain one tone of plastic.
- It is expected that 100 million tons of plastic are manufactured each year.
- The average European throws away 36 kg of plastics every year.
- Several plastic waste sacks are produced from 64% recycled plastic.
- Plastics packaging add up to 42% of total consumption, and every year only slightly of this amount is recycled [3].

The numbers and facts shown above are worrying, therefore, swift action is needed. JKT Play movement which is initiated by Rony Rahardian and Albertus Prawata is one of the examples of creative initiative by a small community. This action could easily be replicated through wider communities and scale, so that the wider impacts and benefits can be felt for many years to come.
With creative sustainability as a theme for JKT Play movement, Rony and Albertus focus on to the consumable media produced by Ruang Seketika, which is paper cup or plastic cup. The goal for this initiative is to reuse and recycle the consumable materials into numerous possibilities for design elements that can be produce into a product for broader audiences and consumers. One of the designs and initiatives is to make a panel, which consist the plastic or paper cup. These cups would act as insulator as well as structural booster or braces for the panel. It can serve as a dry wall, door and partitions as architectural elements.

![Figure 1. Panel detail mockup for door.](image)

Source: Rony Rahardian.

Figure one shows that the cups can be ordered in such configuration, and it opens the possibilities to expose the cups as part of the aesthetic elements of the door. The cups can be drawn or expressed in colors to create patterns, and it could create an artwork that could be expressed through architectural elements for wall, ceiling, door, or other partitions. Another method that can be applied to the consumable media, plastic cups or bottle is by pressing and crushing the plastic using compression or suppressor tool. The advantages using this method, that more plastic cups, paper cups and plastic bottles can be filled into the panel. By having them crushed and pressed, the plastic will create an abstract pattern, that would create different expression from the first, the ordered configuration method. For designers and artist, both methods could bring excitement, and new approach to create an ornaments or atmosphere, and ambience to spaces.
Another creative design from the JKT Play movement is the collaborative works between Aqua Indonesia and Rony Rahardian. The project is an installation for public spaces in Jakarta called Vertical Stream, and it also serves as a public furniture and an ornament. Figure two shows the installation is being used by the public in one of the public spaces in Jakarta, where the plastic bottles become seating media, supported by steel pipes as structural elements that become the part of installation. Vertical Stream is an example of how the plastic waste can be reuse and recycle to create public furniture and ornaments, especially for Jakarta’s urban spaces. This project brings possibilities and footprint or basic future collaborations between products or brands with designers, architects, and creative communities. This collaboration will benefit many aspects and factors while helping to reduce plastic wastes.

4. Conclusion
This paper set out to gain knowledge of the creative initiative of JKT Play movement called creative sustainability. With numerous problems that the city is facing, from over population to the waste disposal, Jakarta will need these movements to be the catalyst and the generator to overcome and to offer solutions to the problems. Collaboration between communities, creative individuals, big private companies, and the government need to be recognized, therefore these powers and sources can provide solutions from small scale to the wider and broader scale. The use of plastic wastes as supportive materials for ornaments, installations, and building materials needs to be acknowledged and explored further. One of the next actions that need to be taken is to test the strength of the panel that filled up with the plastic wastes. Once the strength of the panel is known, the use of the panel can be further
developed, therefore it would be a huge step for the application of sustainable architecture. Another action is that the collaboration between business owners and entrepreneurs, especially in the coffee industries can be arranged to have consumable media of plastic bank within the certain radius or area of the businesses or shops. Therefore, certain area can have its own creative productions using their consumable media as the elements of the development of a new product such as panels, and installations. The possibilities are endless, and it would create opportunities for many sectors. This creative initiative will also benefit the city of Jakarta. Significant amount of plastic wastes can be reduced, and it also can give new branding for the city of Jakarta, where its urban public spaces can be developed and designed using plastic wastes as one of the materials for the city’s urban ornaments, furniture, and art installations.

5. References
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