9th INDES 2020
LIMITLESS MIND:
EMPOWERING INNOVATION THROUGH VISUALIZATION

PROGRAM PROCEEDINGS ABSTRACTS BOOK

The 9th International Innovation, Invention & Design Competition INDES2020

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ABSTRACT

Covid-19 has not been getting better. The amount of covid-19 case increases each day not only in Indonesia but also globally. The increase of the case causes the health protocol is strictly being implemented in public space. Yogyakarta which is known as a cultural and tourism city becomes one of region that needs to do a preventive effort to overcome covid-19. The obligation to wash the hands as often as possible cause a buildup **grey water** (waste of the handsoap) and the decrease of clean water availability. The condition of the washing hands facilities are unpretentious and inefficient. The objective of this innovation design is to design an efficient and green solution of washing hands facility that includes a recycle system of the grey water and responses to new normal. The design method uses literature review that relates to covid-19, waste liquid, and the sink/wash basin system. Besides research that makes the closure of issue from the aspect of behavioural, ergonomic, ecological, economical, and healthy closures. The Innovation and novelty of our design is a sink/wash basin design that uses recycle and re-use water with a complete of grey water’s recycle system.

**Keywords:** Covid-19, water recycled, water reused, sink/wash basin

1. INTRODUCTION

Covid-19 becomes matter of serious concern since the amount of the case increases each day. Total of the case on 28th of September, 2020 reaches 33,034,598 cases with 996,343 of death (CFR 30%) in 215 infected countries and 179 local transmission countries (Kemenkes RI, 2020). Yogyakarta which is known as cultural and tourism city becomes the region than needs to do a preventive effort to overcome covid-19. Departmen of Tourism of Yogyakarta mentioned that the amount of tourist increases each week reaches to 40 thousands since July-August 2020 (Pradito Rida P, 2020). The increase of the case causes the health protocol is strictly being implemented in public spaces. (KemenLHK, 2015) The needs of clean water for washing hands is about 10liter/minutes @80 psi. If the user and how long they need to wash their hands are being multiplied in a day in public space, the obligation to wash the hands possible cause a buildup **grey water** (waste of the handsoap) and the decrease of clean water availability. Besides that in some regions, they have drought issues where clean water becomes rare. The condition of the washing hands facilities these days are unpretentious and inefficient. The first sink type is the sinks use plastic sinks and tanks and the waste of the handsoap are being flowed to the ground by the tubes and need to fill the water continually. The other type is the sink uses stainless material, the sink uses stirrup application and need to be connected to the faucet and that causes extravagance. The objective of Nadoofa Station is to design an efficient and green solution of washing hands facility that includes a recycle system of the grey water and responses to new normal.
2. MATERIAL AND METHOD

The design method and material use literature review. A Literature review is a comprehensive study and interpretation of literature that addresses a specific topic (Aveyard, 2010). The topic raised that relates to covid-19, waste liquid, recycle grey water and the sink/wash basin system. Besides research that makes the approach of issue from the aspect of behavioural, ergonomic, ecological, economical, and healthy approaches. The name of Nadoofa Station takes the concept of Islamic wisdom words “An- Nadhafatu Minal Iman” which means cleanliness is part of iman. Nadoofa is taken from the word “Nadhafatu” which means cleanliness.

![Figure 1. Method Approach Design](image)

2.1. Findings

Nadoofa is a portable sink that uses a ergonomic design for the user and good structures for the recycle system. The design has answered the problems and needs of the availability of water for human needs, when the result of recycled system of Nadoofa can reused to gardening water or to washing hand Nadoofa is the innovation of an efficient waste recycle that uses materials that easy to find and easy cleaning to prevent covid-19 lived.

2.2. Arguments

First, the idea uses literature method so it is needed experimental method to try whether the recycle water could be really used or not. Yet, based on the similar research the recycle water could be used. Second, to electrical system for the detail of implementation it is needed to do a development that collaborated to electrical expert.

REFERENCES

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Yang benar