

Application of An Environmental Friendly Work Area At Dinda Hayu Batik

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Abstract

This study aims to apply the principles of an environmentally friendly work area. One of the batik home industries, Dinda Hayu batik, which is located in Munggon Hamlet, Padukuhan Munggon, Sendangtirto Village, Berbah District, Sleman Regency, Yogyakarta Special Region, became the object of this research. The leader and owner of Dinda Hayu Batik are Mrs. Riyo Ety. A high level of sales and a large profit to be obtained is one of the goals of a business. To achieve that goal requires maximum employee performance, good product marketing, and a supportive work environment. This research discusses how environmental aspects can support employee performance so that it leads to increased profits that will be obtained by Dinda Hayu Batik. Environmental aspects are comfortable in terms of the availability of adequate locations to fulfill the Green Open Space (RTH) and parking areas. In addition, the comfort of the work area also greatly affects employee performance. A hot work atmosphere will make employees sweat more than they should, so employees will feel tired quickly. Therefore, the solution of providing a sufficient green open space (RTH) or garden and supported by smooth air circulation in the work area will make the work area temperature cool and comfortable. A hot work atmosphere will make employees sweat more than they should, so employees will feel tired quickly. Therefore, the solution of providing a sufficient green open space (RTH) or garden and supported by smooth air circulation in the work area will make the work area temperature cool and comfortable. A hot work atmosphere will make employees sweat more than they should, so employees will feel tired quickly. Therefore, the solution of providing a sufficient green open space (RTH) or garden and supported by smooth air circulation in the work area will make the work area temperature cool and comfortable.

Keywords: environment, performance, comfort, profit.



I. INTRODUCTION

Many industries, both large-scale and home industries, are having problems in the field of product marketing. With the existence of a policy from the government regarding the appeal for people not to leave their homes, maybe one side is justified in breaking the chain of the spread of the coronavirus, but on the other hand, it will cut people's purchasing power. This greatly affects the selling value and profits that business actors get.

Dinda Hayu Batik as one of the home industries in the batik sector continues to operate its business even though it still applies health protocols. The contents of the health protocol are that employees must wear a mask, always wash their hands with clean water and soap, and keep their distance from other people. During this pandemic, Dinda Hayu Batik still had many orders for batik, especially the type of batik mask, batik cloth, and batik clothes with the corona pattern. To fulfill this order, the management must increase the work productivity of its employees.

II. LITERATURE REVIEW

There are many orders for batik products, this has consequences for Dinda Hayu Batik to work harder in order to fulfill these orders. Performance support from management and employees is very much needed. To achieve a good performance condition, one of the determining aspects is the environmental aspect. From the planning of business buildings, it should have taken into account the allocation of land allocated for green open spaces (RTH) and parking areas. Green Open Space Area (RTH) is needed as a place to produce oxygen which is needed by living things, including humans. In addition, the existence of a Green Open Space will make the atmosphere cooler and more comfortable and can be a means of refreshing for employees to relieve fatigue during rest time. The existence of a parking area is needed to ensure that all vehicles from the employees and management of Dinda Hayu Batik are well managed. In addition, the parking conditions that are well organized will make it more spacious and easier for employees to park and pick up their vehicles.

According to (Raziq, A., and Maulabakhsh, R. 2014), in today's modern era, a company has 2 challenges to realize dynamic environmental changes. One of them is that an entrepreneur must be able to meet the needs of his employees to meet the changes that exist, as well as a developing environment to achieve success in competition. To increase efficiency, effectiveness, productivity, and employee duty commitment, employers must create a good and comfortable working environment. According to (Lee, S.Y. and Brand, J.L. 2005), that the workplace must be supported by rapid technological developments and its implementation, dynamic organizational changes, and strong employee commitment, to achieve the goals of the company. Meanwhile, according to (Bauman, F. and Arens, A. 1998) , that they are already doing research on developing controlled environments to investigate the various physical and psychological aspects that affect the working atmosphere. In this study, 2 simulations were made, namely a room with a glass window was made so that sunlight could freely enter the room. This can be seen in Figure 1. Whereas in another simulation, it can be seen in Figure 2, namely a room equipped with an air circulation control system. Furthermore, the temperature of the two rooms is measured and compared.



Figure 1. A room with glass windows and no air ventilation
 (Source: Baumen and Arens, 1988)

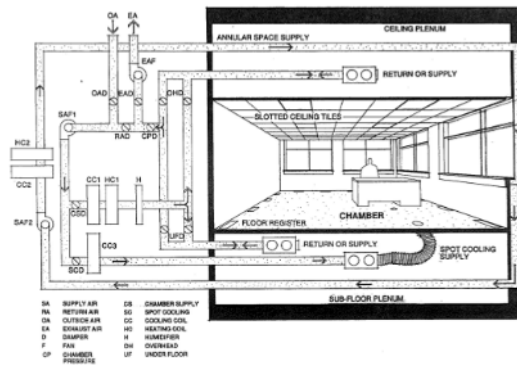


Figure 2. The room is equipped with an air circulation control system
 (Source: Baumen and Arens, 1988)

It turns out that the room temperature in Figure 2 is lower than the room temperature in Figure 1. The lower room temperature will affect the work atmosphere felt by workers. A more comfortable atmosphere will make employees more suitable and enthusiastic at work so that their productivity will increase.

A work area without good air circulation will result in a higher work area temperature and feel hotter. This condition causes workers to sweat and feel uncomfortable because they tire faster. Fatigue caused by uncomfortable work area conditions will result in decreased productivity. Unlike if there is good air circulation in a work area. This will result in the air temperature in the work area being more comfortable than the work area where there is no air circulation so that workers do not sweat easily and feel more comfortable working so that it has an impact on increasing productivity.

This condition occurs in the work area of Dinda Hayu Batik. Lack of Ruang Terbuka Hijau (RTH) and lack of good air circulation has resulted in higher air temperatures in the work area so that workers sweat faster and accelerate fatigue. To deal with this condition, it is recommended that the leadership of Dinda Hayu Batik increase the Ruang Terbuka Hijau area by adding a garden both horizontally and vertically. Another recommendation is to install a device that can help circulate air in the form of a fan so that it can condition the air temperature in the work area. For work areas inside the house, it is enough to use an ordinary fan, while for work areas outside the house where the air temperature is higher, a fan equipped with mist spray is installed. The existence of the mist offered by the fan will increase the humidity level so that the work area becomes cooler and more comfortable. This leads to increased productivity of workers.

This research has never been done before by other researchers. Similar research is research conducted by Baumen and Arens (1988). This study carried out a natural air circulation conditioning, namely by increasing the number of windows so as to facilitate air circulation in the work area. Whereas in this study, recommendations were made by adding Ruang Terbuka Hijau and installing a device to help air circulation, namely a fan equipped with a fog generator. Therefore, this research is still original.

III. RESEARCH METHODOLOGY

III.1. Research sites

This research is located in the Sendangtirto area, Berbah District, Sleman Regency, DIY, exactly Dinda Hayu Batik.

III.2. Material and equipment

This research uses equipment and materials in the form of documentation tools, maps, and calculators.

III.3. Doing the work process

The researcher conducted a search for a legal basis for determining the area of a green open space/park, then field observations at the research location, and identified the research location including the use of the area, land area, and the size of the existing park. Furthermore, then calculate the required area of the garden that should be and determine the type of tools used to condition the temperature of the workspace.

III.4. Data Analysis

Based on the regulations obtained, it is used as the basis for calculating the area of green open space/garden, data on the area of the exclusive area, then the area of the plant should be calculated and determine the type of room temperature conditioning equipment needed.

IV. FINDING AND DISCUSSION

After searching for reference data related to regulations that determine the area of a Green Open Space (RTH), national regulations are obtained, namely Law of the Republic of Indonesia Number 32 of 2009 concerning Environmental Protection and Management (PPLH), while local ones are Sleman Regent

Decree Number 01 of 2016 concerning Environmental Protection and Management, article 107 that for each land area to be built a building, the landowner has the obligation to provide a Green Open Space (RTH) of at least 20% of the land area. Based on the results of observations at the research location, the researcher got a picture of the working conditions at Dinda Hayu Batik. The research object is a house, which is then used as a part of the house area as an office and batik production room. The real conditions can be seen in the following figure.

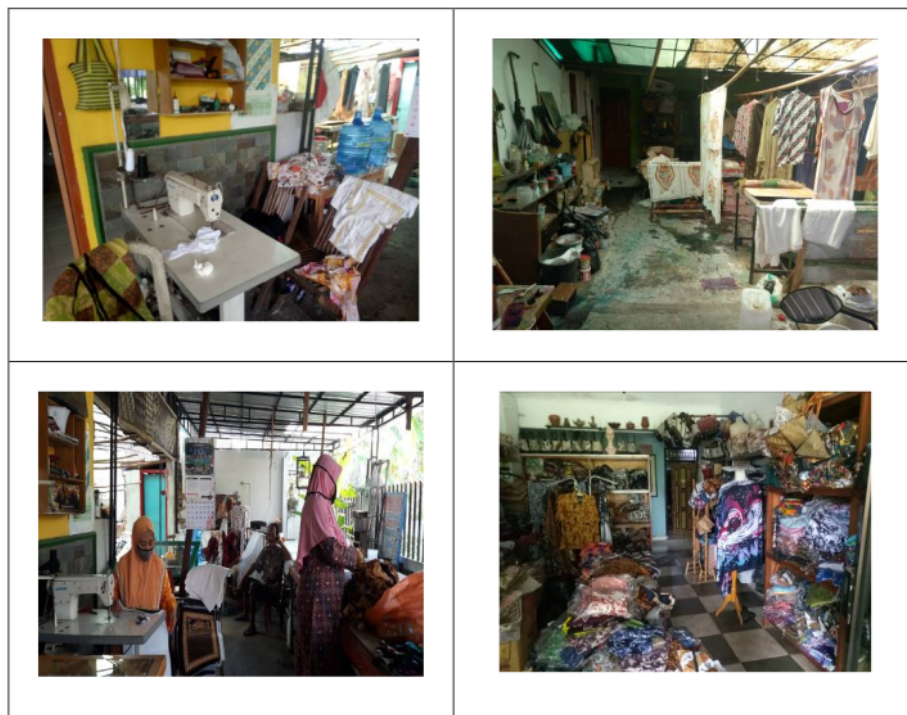


Figure 3. Daily activities at Dinda Hayu Batik
(Source: Primary data, 2020)

After conducting discussions with the leadership of Dinda Hayu Batik, it was found that the land area was 380 m², which is used as a residence and business space/batik production. While the garden area is 45 m². Based gentleman Regent Decree Number 01 of 2016 concerning Environmental Protection and Management, article 107 that for each area of land to be built a building, the landowner has an obligation to provide a Green Open Space (RTH) of at least 20% of the land area, then the area of

green open space or park that should be calculated as follows. Park area of at least 20% of the land area, namely = $380 \text{ m}^2 \times 20\% = 76 \text{ m}^2$.

Based on the above calculations, it turns out that a minimum area of 76 m^2 of garden or RTH is required, while the area of the exclusive garden is 45 m^2 so it is necessary to add a garden area of at least 31 m^2 . The addition of this garden area is usually done horizontally, but if due to limited land area, it can be done vertically. Considering the land conditions, the researchers suggested that Dinda Hayu Batik adds to the garden area at several locations by arranging flower plants in pots and arranging them in a sloping/vertical place, then calculating the area of the sloping landscape as an addition to the garden area.

The temperature of the workspace is hot enough to cause employees to sweat easily. This results in employees getting tired easily. To make workspace conditions cooler and more comfortable, a working room temperature conditioner is needed. The selection of the air conditioner for the temperature of the workspace is adjusted to the type of roof of the space. For those whose roofs are made of tile, the temperature of the workspace is lower than those with galvalume roofs. For this reason, a workspace with a lower temperature will use a workspace temperature conditioner in the form of a fan, while for a workspace with a higher temperature, a blower/fan equipped with a mist spray will be used. Based on the theory of Bauman and Arens (1988) that in a room there needs to be an air temperature control system, so that it is in accordance with our findings/research proposals to add green open space and install a room temperature control device, namely the fan.

V. CONCLUSION

Based on Sleman Regent Decree Number 01 of 2016 concerning Environmental Protection and Management, article 107 then IThe required garden area is at least 76 m^2 , while the existing garden area is 45 m^2 , so it is necessary to add a garden area of at least 31 m^2 . For working room temperature conditioning, it is advisable to use a type of fan for the roofing roof, while for work areas with a galvalume roof it is recommended to use a fan/blower that sprays fog. The garden area that meets the standards and the workspace is equipped with a working room temperature conditioning device, so the workspace temperature becomes more comfortable so that employee productivity increases.

This study provides recommendations for increasing the comfort of the workspace so that employee productivity increases

VI. REFERENCES

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