

Environmental Permit Study Using the Greenship Approach as the Environmental Impact Management Planning for Health Facilities

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INDEXING

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ABSTRACT

This study aims to examine the UKL UPL type environmental permit using the Greenship Indonesia Rating Tools approach and the implementation of the application that is following the applicable laws for building management, especially hospital buildings. The approach used is the Greenship Rating Tools version 1.0. The research variable consisted of 2 variables, namely the scale variable of activities and efforts to manage and monitor the environment as well as the variable rating criteria on Greenship. The analysis used is thematic analysis with qualitative descriptive analysis. Thematic analysis is divided into 3, namely the analysis of the equations of the two variables, the analysis of the differences and conclusions of the two variables, as well as the critical analysis of the two variables by applicable hospital environmental management regulations. The results showed that there were 5 equations and 5 conclusions on the differences in the research variables, as well as 3 critical points for the two variables. The conclusion shows that the UKL UPL environmental permit for the hospital needs an additional analysis on the scale components of activities related to the use of building materials and air quality as well as building comfort and additional analysis on the components of efforts to use and monitor the environment including efforts to improve quality standards for water, soil, air, food items and vectors of disease-carrying animals.

Penelitian ini bertujuan untuk mengkaji ijin lingkungan jenis UKL UPL dengan pendekatan Greenship Indonesia Rating Tools dan implemmentasi penerapan yang sesuai dengan undang-undang yang berlaku untuk pengelolaan bangunan khususnya bangunan Rumah Sakit. Pendekatan yang digunakan adalah Greenship Rating Tools versi 1.0. Variabel penelitian terdiri dari 2 variabel yaitu variabel besaran skala kegiatan dan upaya pengelolaan serta pemantauan lingkungan hidup serta variabel kriteria rating pada Greenship. Analisis yang digunakan adalah analisis tematik dengan analisis deskriptif kualitatif. Analisis tematik terbagi menjadi 3 yaitu analisis persamaan kedua variabel, analisis perbedaan dan kesimpulan kedua variabel, serta analisis kritisi terhadap kedua variabel sesuai dengan regulasi pengelolaan lingkungan rumah sakit yang berlaku. Hasil Penelitian menunjukkan terdapat 5 persamaan dan 5 kesimpulan perbedaan variabel penelitian, serta 3 poin kritisi kedua variabel. Kesimpulan menunjukkan bahwa ijin lingkungan UKL UPL untuk rumah sakit perlu penambahan analisis pada komponen besaran skala kegiatan terkait penggunaan material bangunan dan kualitas udara serta kenyamanan bangunan dan penambahan analisis pada komponen upaya pemanfaatan dan pemantauan lingkungan hidup meliputi upaya penyehatan baku mutu air, tanah, udara, panganan saji dan vector hewan pembawa penyakit.

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INTRODUCTION

A Hospital as a health facility is very complex, especially when it comes to managing its impact on the environment. According to the National Health Service in (Sunarto, July 2018) in the UK, the health sector carbon footprint is more than 18 million tonnes of CO₂ each year, representing 25% of total public sector emissions. Responding to these challenges, it is necessary to regulate through government regulations in the form of environmental permits as part of the regulations for the establishment of health facilities. An environmental permit also functions as a control for the environmental impact of a health facility building in the form of a clinic, rehabilitation center, puskesmas to a hospital. Currently in Indonesia, listed in PERMENKES no 56/2014 concerning Hospital Classification and Licensing has been regulated starting from the designation of location and building intensity according to local regulations, hospital building design to environmental impact control following statutory provisions.

In general, the environmental licensing process refers to Government Regulation of the Republic of Indonesia No. 27 of 2012 concerning Environmental Permits. An Environmental Permit is a permit given to every person who carries out a business and/or activity that is required to have an Amdal or UKL UPL in the framework of environmental protection and management as a prerequisite for obtaining a business and/or activity permit. The application of an Environmental Permit is following the Government Regulation that the construction of a building/ area must carry out an Amdal permit if the site area is > 5 ha / the total area of the building is > 10,000m², while any business that is not included in the criteria for an Amdal permit is required to have UKL UPL and every business. those who are not included in the UKL-UPL criteria are obliged to prepare an SPPL.

Environmental impact assessments are carried out worldwide and are a mature process to identify the significant impacts of development and mitigation measures to reduce these impacts (broderick & durning, 2006). The construction of a hospital or health facility can have negative and positive impacts. Negative impacts on the environment will arise if they are not managed properly (goesty, samekto, & sasongko, 2012). Hospitals are buildings that require the second largest energy consumption after offices. The rest of the combustion of medical waste contributes to the largest gas emissions in the world (pramata, pradianto, & utami, 2016). However, for the environmental sustainability and the energy crisis, especially to the management of the environmental impact of health facilities, especially hospitals, an instrument is needed to control the impact in addition to the environmental permit that has been set by the government. Responding to these challenges, the concept of Green Building, which is known as sustainable building, is considered capable of having a positive impact on the environment, economy, and society. The public sector and private business are increasingly committed to a series of environmentally friendly principles so that most architects today are increasingly familiar with the concept of green building. The focus of the design on the concept of "Green Hospital", which is a special sustainable design for the hospital, is also increasingly in demand and awareness (Tabish, January 2011).

Policy applications and other innovations are needed to accelerate the implementation of the Green Hospital program in all hospitals in Indonesia. Policy intervention is given to influence changes in all elements of the criteria in the program (Sutanto, Kumala p, Pramudya, & Utomo, 2020). For this reason, this study aims to examine environmental permits, especially the type of UKL UPL environmental permit with the Greenship Indonesia Rating Tools version 1.0 approach and the implementation of the application by applicable laws for building management, especially hospital buildings. Thus, it is hoped that it can provide direction for policymakers in enacting environmental permits aimed at sustainable environmental management, especially UKL UPL for health facilities (hospitals).

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RESEARCH METHOD

The theoretical approach used in this study uses the Greenship Indonesia Rating Tools Version 1.0, which aims to achieve green building standards that are environmentally friendly from the planning, construction to daily operation and maintenance stages. (GBCI, 2010). Greenship Indonesia Rating Tools have assessment criteria that are grouped into six categories, namely:

1. Appropriate site development (ASD)
2. Energy efficiency and conservation (EEC)
3. Water conservation (WAC)
4. Material resources and cycle (MRC)
5. Indoor air health and comfort (IHC)
6. Building and environment management (BEM)

In line with the Environmental Permit that has been stipulated by the Government through the Peraturan Menteri Lingkungan Hidup no 16 tahun 2012 tentang Pedoman Penyusunan Dokumen Lingkungan Hidup, it is stated that in environmental documents of the type of UKL UPL (environmental management efforts and environmental monitoring efforts) it is necessary to describe activities that can have an impact. to the environment according to the project implementation stage, namely the pre-construction stage, the construction stage, the operational stage, to the post-operational / closure stage. So that the environment can be well maintained between humans and the environment, UKL UPL is carried out in the activity plan carried out at the beginning (pre-construction) until the end of the activity (operational) (yasa, santiana , wibawa, suasira, & sudiasa, 2019).

In the UKL UPL document, it is necessary to describe the Scale of the business plan and/or Activities which in general consist of 10 indicators:

1. Land area and buildings
2. Equipment and machines used
3. Use of electric energy and fuel
4. Commodities business services
5. Labor
6. Water Use
7. Garbage
8. Water Conservation and Green Space Development Program
9. Parking Needs Analysis
10. Fire-fighting installations

The UKL UPL document also contains an outline of the business components/ activity plan which includes the suitability of the location of the activity plan with the spatial layout, an explanation of the principal approval for the activity plan as well as a description of the activity components that can cause environmental impacts. The resulting environmental impacts need to be explained to the source of the impact, namely the sub-activities of each activity stage, the types of impacts that may arise from each activity stage, and the magnitude of the impact which is stated quantitatively. Apart from that, as an explanation of the form of environmental management and monitoring efforts, it is necessary to explain the form of the effort, the location for the implementation of the effort, and the period of the effort to the institution that is responsible for the management and monitoring of the environment.

The research variables were taken from the main parameters listed in the Peraturan Menteri Lingkungan Hidup no 16 tahun 2012 tentang Pedoman Penyusunan Dokumen Lingkungan Hidup and Greenship Indonesia Rating Tools version 1.0 which consists of. The research variables listed in the following table:

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Table 1. variables, parameters, and research indicators (source: Peraturan Menteri Lingkungan Hidup no 16 tahun 2012 tentang Pedoman Penyusunan Dokumen Lingkungan Hidup and Greenship Indonesia Rating Tools version 1.0)

VARIABLES	PARAMETERS	INDICATORS
1) UKL UPL Document Components in Peraturan Menteri Lingkungan Hidup no 16 tahun 2012 tentang Pedoman Penyusunan Dokumen Lingkungan Hidup	1. the Scale of the business plan and/or Activities	1. Land area and buildings 2. Equipment and machines used 3. Use of electric energy and fuel 4. Commodities business services 5. Labor 6. Water Use 7. Garbage 8. Water Conservation and Green Space Development Program 9. Parking Needs Analysis 10. Fire-fighting installations
	2. Environmental Management and Monitoring Efforts	1. Environmental impacts that arise (Source of impact, the magnitude of impact, type of impact) 2. Environmental management efforts (efforts/programs, location, period) 3. Environmental monitoring (efforts/programs, location, period) 4. Environmental management and monitoring institutions
2. The assessment criteria for the Greenship Indonesia Rating Tools version 1.0	1. Appropriate site development (ASD)	Precondition-1. Basic Green Area ASD-1. Site Selection ASD-2. Community accessibility ASD-3. Public Transportation ASD-4. Bicycle ASD-5. Site Landscaping ASD-6. Micro Climate ASD-7. Stormwater Management
	2) Energy efficiency and conservation (EEC)	Precondition-1. Electrical Sub-Metering Precondition-2. OTTV Calculation (overall total transfer value) EEC-1. Energy Efficiency Measure EEC-2. Natural Lighting EER-3. Ventilation EER-4. Climate Change Impact EER-5. On-Site Renewable Energy
	3) Water conservation (WAC)	Precondition -1. Water metering WAC-1. Water Use Reduction WAC-2. Water Fixture WAC-3. Water Recycling WAC-4. Alternative Water Resources WAC-5. Rainwater Harvesting WAC-6. Water Efficiency Landscaping

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VARIABLES	PARAMETERS	INDICATORS
	4) Material resources and cycle (MRC)	Precondition -1. Fundamental Refrigerant MRC-1. Building and Material Reuse MRC-2. Environmentally Process Product MRC-3. Non-ODS Usage MRC-4. Certified Wood MRC-5. Modular design MRC-6. Regional Material
	5) Indoor air health and comfort (IHC)	Precondition -1. Outdoor Air Introduction IHC-1. CO2 Monitoring IHC-2. Environmental Tobacco Smoke Control IHC-3. Chemical Pollutants IHC-4. Outside View IHC-5. Visual Comfort IHC-6. Thermal Comfort IHC-7. Acoustic Level
	6) Building and environment management (BEM)	Precondition-1. Basic Facility for Waste Management BEM-1. GP as a Member of Design Team BEM-2. Pollutant of Construction Activity BEM-3. Advance Waste management BEM-4. Proper Commissioning BEM-5. Submission Green Building Implementation Data for Data Base BEM-6. Fit-Out Agreement BEM-7. Occupant Survey

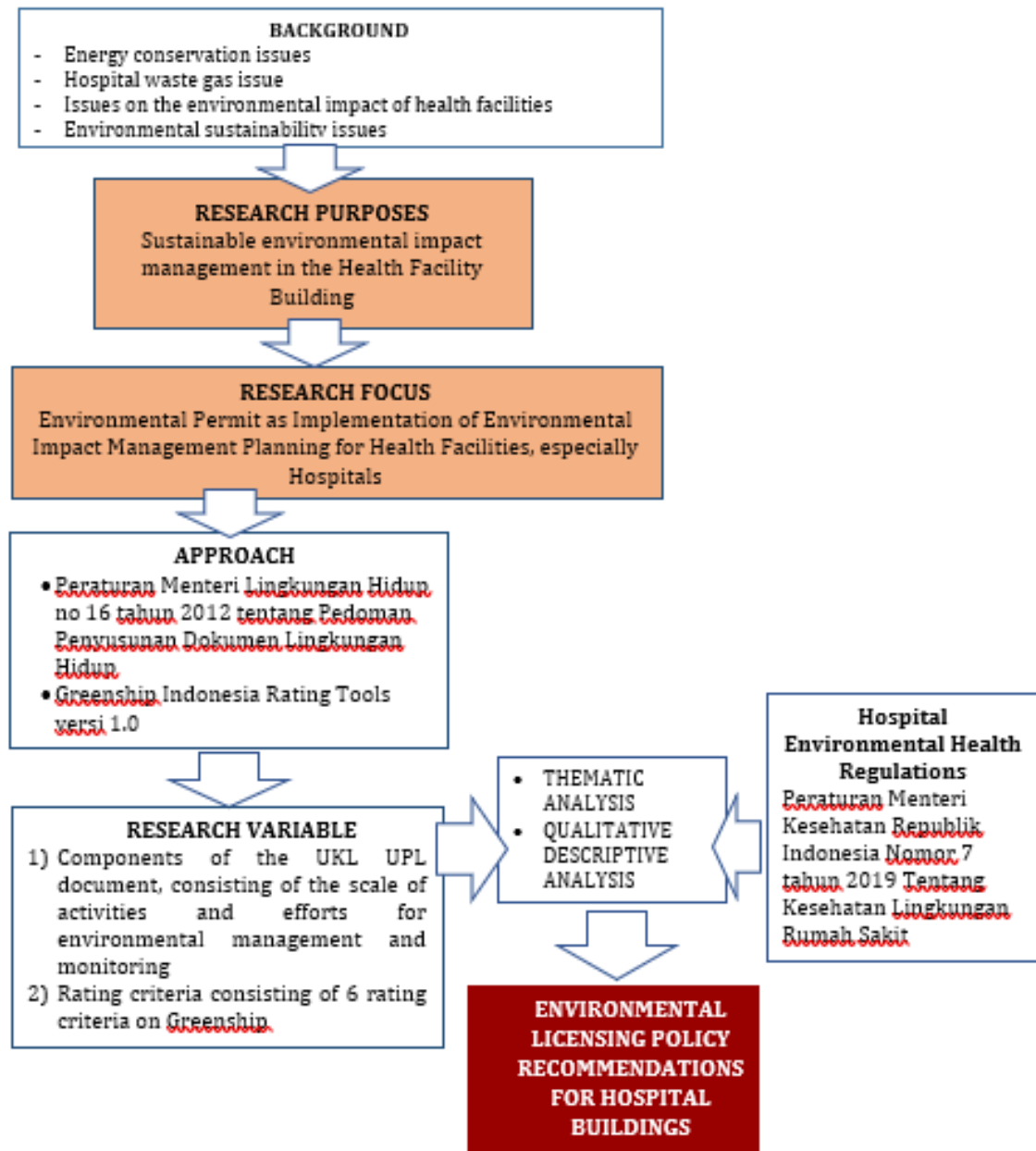
The analysis used in this study is a thematic analysis which will consist of 3 analyzes, namely finding similarities, finding differences to make conclusions, and criticizing using personal opinions. Each stage of the thematic analysis will be carried out, namely finding similarities, differences, and conclusions from the UKL UPL type environmental permit with Greenship rating tools version 1.0 with a qualitative descriptive model, as well as criticizing compliance with applicable regulations or regulations related to the management of the impact of hospital buildings. So it is hoped that a conclusion will be drawn to the Environmental Permit Policy Direction for the Implementation of Environmental Impact Management Planning in Health Facilities, especially Hospitals.

The framework of the research flow of thought is shown in the following diagram:

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Picture 1. Research Flowchart Framework (source: Author's Analysis, 2021)

RESULT AND DISCUSSION

The first thematic analysis stage, namely the equation of the Greenship Indonesia Rating Tools version 1.0 with the UKL UPL Environmental Permit includes the following:

1. The framework of the same objectives is the management of the environmental impact of a building in a sustainable manner

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2. Applies to new buildings, namely buildings that have not been built with an area of more than > 2500m². In Greenship, the minimum is 2500m² and UKL UPL is less than 10,000m² and does not enter SPPL requirements.
3. The scope of impact management is analyzed from the design to the operation of the building. In Greenship, namely to achieve green building standards that are environmentally friendly from the planning, construction to daily operation and maintenance stages. The UKL UPL is an effort to manage environmental impacts and an effort to monitor environmental impacts starting from the pre-construction stage, the construction stage to the operational and closing stages.
4. Comply with the prevailing regulations and rules, especially the Regional Spatial Plan.
5. The Greenship Indonesia Rating Tools version 1.0 also requires the inclusion of an approved UKL UPL / environmental permit document.

The second thematic analysis stage, namely the difference from Greenship Indonesia Rating Tools version 1.0 with the UKL UPL Environmental Permit, is seen in the following research variables:

Table 2. Thematic analysis of differences in research variables (source: author's analysis, 2021)

Component Variables of the UKL UPL document (Peraturan Menteri Lingkungan Hidup no 16 tahun 2012 tentang Pedoman Penyusunan Dokumen Lingkungan Hidup)		Variable Criteria for Greenship Indonesia Rating Tools version 1.0
1. Land and Building Area	In UKL UPL, the area of land includes RTH and RTNH, as well as the percentage of built and undeveloped land. In Greenship, this criterion is included in Criterion One, namely Appropriate Land Use which includes 7 parameters, namely: 1) Site Selection 2) Community Accessibility 3) Mass Transportation 4) Facilities for bicycle users 5) Landscaping 6) Micro Climate 7) Rainwater Runoff Management	1. Appropriate Land Use 2. Energy Efficiency And Conservation 3. Water Contervation 4. Source And Material Cycle 5. Air Quality And Comfort Of The Room 6. Building Environmental Management
2. Equipment and machines used 3. Electricity and fuel users	UKL UPL includes facilities and infrastructure that both require energy to be used or not during construction and building operations. In UKL UPL, the use of electrical energy includes other energy for building construction and building operations. In Greenship, this criterion is included in Criterion Two, namely Efficiency and Energy Conservation which consists of 2 parameters, namely Sub-Meter Installation and OTTV (overall total transfer value) including indicators in it, namely 1) Energy efficiency measures	

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Component Variables of the UKL UPL document (Peraturan Menteri Lingkungan Hidup no 16 tahun 2012 tentang Pedoman Penyusunan Dokumen Lingkungan Hidup)		Variable Criteria for Greenship Indonesia Rating Tools version 1.0
	<ul style="list-style-type: none"> 2) natural lighting 3) ventilation 4) the effects of climate change 5) new and renewable energy that comes from within the site 	
<ul style="list-style-type: none"> 4. Business service commodity 5. Labor force 	<p>not analyzed on Greenship Indonesia Rating Tools version 1.0</p>	
<ul style="list-style-type: none"> 6. Water usage 7. Water conservation programs and green space developmen 	<p>In UKL UPL, water use includes water needs for buildings and building occupants both during construction and building operations to the resulting liquid waste.</p> <p>In Greenship, this criterion is included in Criterion Three, namely Water Conservation which consists of installing water metering including indicators in it, namely reducing water use.</p> <ul style="list-style-type: none"> 1) Selection of water outlet regulator 2) Recycle water 3) Alternative water sources 4) Collecting rainwater 5) Water saving landscaping 	
<ul style="list-style-type: none"> 8. Waste (trash) 	<p>In UKL UPL, waste includes solid waste generation from buildings and building users during the construction and operational stages of the building. In Greenship, this criterion is included in Criterion Six, namely Building Environmental Management which consists of Basic Water Management Facilities including 7 indicators in it, namely:</p> <ul style="list-style-type: none"> 1) Involving Greenship Professional (GP) from Stage 2) Design 3) Pollution from Construction Activities 4) Advanced Waste Management 5) Good and Correct Commissioning System 6) Submission of Data 7) Implementation of Green building as Basic Data 8) Agreements on Fit-Out Activities 9) Survey to Building Users 	
<ul style="list-style-type: none"> 9. Parking needs analysis 	<p>The UKL UPL includes the availability of motorized vehicle parking lots and a fire fighting system on each floor.</p>	

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Component Variables of the UKL UPL document (Peraturan Menteri Lingkungan Hidup no 16 tahun 2012 tentang Pedoman Penyusunan Dokumen Lingkungan Hidup)		Variable Criteria for Greenship Indonesia Rating Tools version 1.0
10. Fire extinguishing system	In Greenship, this criterion is included in Criterion 1, namely Appropriate Use of land, including 2 indicators, namely Mass Transportation, Facilities for Bicycle Users. As for the fire extinguishing system, it is not discussed at Greenship	

Based on the discussion table, the conclusion of the differences is as follows:

- 1) In UKL UPL, there are components of business services and labor commodities which are analyzed both at the construction and operational stages of the building including the types of building services and the number of building users.
- 2) In UKL UPL there is a Parking Needs Analysis component which is analyzed both at the construction and operational stages of the building including parking facilities provided by the building.
- 3) In UKL UPL, there is a Fire Extinguisher installation component that is analyzed by the fire extinguisher system at both the construction and non-construction stages.
- 4) Greenship has analyzed the material sources and cycles, namely the application of fundamental refrigerants which consists of 6 indicators, namely reuse of buildings and used materials, products with friendly manufacturing processes, use of materials that do not contain ODS, certified wood, designs using modular materials, Materials Available from Nearby Places.
- 5) In Greenship, the related analysis is Air Quality and Building Comfort, namely Outdoor Air Introduction which consists of 7 indicators, namely monitoring carbon dioxide levels, monitoring cigarette smoke pollution, hazardous chemical pollution, visual scenery, visual comfort, thermal and acoustic comfort.

The third thematic analysis stage is to criticize the existing UKL UPL environmental permits based on applicable regulations/rules related to hospital environmental management. According to Mukhtasor (Puspita Sari, Makmur, & Rozikin, 2019) states that pollution is the entry of materials or substances that enter the soil, water, or air environment and cause the concentration of their substances to disturb the environment. Based on this, criticism is emphasized on waste pollution on soil, water, air. Applicable regulations/rules is Peraturan Menteri Kesehatan Republik Indonesia Nomor 7 tahun 2019 Tentang Kesehatan Lingkungan Rumah Sakit. Some points that need to be criticized in the UKL UPL document, especially for hospitals, are as follows:

- a) Article 6 regulates the commitment of hospital managers to support the implementation of hospital environmental health
- b) In the attachment to Chapter Two, which regulates Environmental Health Quality Standards and Health Requirements included therein
 - Quality standards and requirements for water health, including the implementation of sanitation
 - Quality standards and health requirements for air quality, including the implementation of sanitation
 - Quality standards and requirements for soil health, as well as the implementation of sanitation

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- Quality standards and health requirements of ready-to-eat food, as well as health management
 - Quality standards and health requirements for facilities and buildings, including the implementation of sanitation
 - Quality standards and health requirements for disease-carrying animals, including the implementation of their health.
- c) Handling of non-medical and medical / B3 solid waste, non- medical and medical / B3 liquid waste, Gas Waste and including radiation

CONCLUSION

From the results of the above discussion, the scope of the UKL UPL document, especially for environmental permits for health facilities, especially hospitals, needs further policy directives that regulate and analyze the following:

1. Addition of analysis to the components of the Activity Scale, namely the scale of activities related to the source and use of building materials as well as air quality and building comfort as contained in the Greenship rating.
2. Addition of analysis to components of Environmental utilization and monitoring efforts, especially those related to quality standards for water, soil, air, foodstuffs, and vectors of disease-carrying animals. This is in line with the criteria for the Greenship rating, namely Criterion 3 and Criterion 5.

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