Analysis of Building Damage Level Building Palangka Raya University

Lisa Wati[1], Veronika Happy Puspasari[2], Apria Brita Pandohop Gawei[3]

[1,2,3] Program Studi Teknik Sipil, Fakultas Teknik, Universitas Palangka Raya
e-mail: lisawaticivil1998@gmail.com[1], vhappypuspasari@jts.upr.ac.id[2],
apriagawei@jts.upr.ac.id[3]

Abstrak

Gedung perkuliahan sama dengan gedung pada umumnya yaitu gedung yang terbuat dari konstruksi kayu atau beton. Dalam pengoperasiannya, potensi kerusakan bangunan lama atau bangunan yang relatif baru dibangun sangat besar. Tidak ada data kerusakan di Universitas Palangka Raya yang menyebabkan turunnya tingkat produktivitas kegiatan yang dilakukan oleh pemilik atau pengguna gedung sehingga kondisi gedung perguruan tinggi tidak terjaga dengan baik. Penelitian ini dilakukan dengan melakukan survey pengisian formulir di gedung kuliah pertama Fakultas Ekonomi dan Bisnis Universitas Palangka Raya. Dari form survey yang dianalisis lebih lanjut, muncul 3 kategori jenis komponen yaitu Arsitektural: Pondasi, Sloof, Kolom, Ring Balk, Dinding, dan Rangka Atap, Arsitektur: Atap, Plafon, Lantai, Kunci, Rangka dan Daun, serta Pengecatan , Utilitas: MCK, dan Elektrikal : Elektrik. Analisis yang digunakan adalah analisis deskriptif. Hasil analisis ini menunjukkan bahwa 3 komponen yang memiliki persentase kerusakan kunci 0,5%, bingkai dan daun 0,7%, dan lukisan 7,37%, dengan total 8,6% masuk dalam kategori tingkat kerusakan ringan. rusak, dengan anggaran Rp. 759.736.00 untuk kunci, Rp. 3.495.992.39 untuk rangka dan daun, dan Rp. 106.463.066.64 untuk pengecatan, dengan total biaya kerusakan Rp. 110.718.795,02. Penelitian ini bermanfaat bagi pengelola dan penelitian selanjutnya dapat menjadi acuan dalam meningkatkan kualitas bangunan.

Kata kunci: *Gedung Kuliah; Tingkat Kerusakan; Rencana Anggaran Biaya*

Abstract

The lecture building is the same building as the building in general, namely a building made of wood or concrete construction. During its operation, the potential for damage to an old building or a relatively newly constructed building is very large. There is no data on damage at the University of Palangka Raya that has caused a decrease in the level of productivity of activities carried out by building owners or users so that the condition of the college building is not well maintained. This research was conducted by conducting a survey of filling out the form in the building of the first lecture building of the Faculty of Economics and Business, University of Palangka Raya. The survey form was analyzed further, 3 categories of component types emerged, namely Architectural: Foundations, Sloof, Columns, Ring Balk, Walls, and Roof Frames, Architectural: Roofs, Ceilings, Floors, Locks, Frames and Leaves, as well as Painting, Utilities: MCK, and Electrical : Electric. The analysis used is descriptive analysis. The results of this analysis show that 3 components, which have a percentage damage of 0.5% of keys, 0.7% of frames and leaves, and 7.37% of painting, with a total of 8.6% fall into the category of damage levels, namely lightly damaged, with a budget of Rp. 759.736.00 for keys, Rp. 3,495.992.39 for frames and leaves, and Rp. 106.463.066.64 for painting, with a total cost of damage of Rp. 110,718,795.02. This research is useful for managers and further research can be a reference in improving the quality of the building.

Keywords : *Lecture Building; Level of Damage; Budget Plan*

INTRODUCTION

Building is a physical form resulting from construction work that is integrated with its domicile, partially or wholly located above and/or in the ground and/or water, which functions as a place for humans to carry out their activities, either for or as a place to live, religious activities, business, culture, and special activities (Permen-PU No. 11 of 2018).

The potential for damage to an old building or a relatively newly built building is very large, usually the appearance of the damage that occurs is seen after the building starts operating so that the function of the building, especially its comfort, is decreasing (Rohmat, 2020).

So that the damage that occurs does not get worse in the Palangka Raya University building, it requires maintenance and maintenance measures (Per-PP No. 16 of 2021).

If the condition of the building as a whole as well as the volume of damage from each of its components can be known, then the building owner should also prepare an estimate of the required cost. In determining the costs used to carry out maintenance, there are several ways, such as estimating the cost of building maintenance and maintenance by using a rough estimate of the estimated price (Nurtanto, 2020).

Based on the literature study, the identification of the level of damage and the budget for building damage at the University of Palangka Raya itself has never been carried out and there has been no previous research regarding the level of damage to college buildings. Therefore, this study is intended to examine the implementation of the activities of the identification stage of the level of damage to the lecture building specifically at the University of Palangka Raya.

It is hoped that this research can provide information about how the development of the application of the concept of identifying the level of damage to college buildings to the damage budget plan, especially at the University of Palangka Raya, is expected.

The purpose of this study was to determine the components of damage, analyze the level of damage, and analyze the budget plan for the damage to buildings at the University of Palangka Raya.

The limitations of the problem in this study include: 1. This research is focused on non-storey college buildings, namely building I faculty of economics and business at the University of Palangka Raya. 2. This research was conducted to assess the physical condition based on the survey form that had been prepared and the level of damage, namely light damage, moderate damage, and heavy damage. 3. The calculation of the initial budget plan only includes the work of: soil, concrete, split stone, iron, floors and walls, door and window frames, toilets, electricity, roofing, and finishing. 4. Calculation of RAB using AHSP 2016 and Basic Price Palangka Raya City Semester II 2021.

The benefits of this research are: 1) For building managers, this research is useful to provide a reference on the application of early identification of damage levels and to know the estimated cost of damage to college buildings which they manage and can be a reference in improving the quality of the building. 2) For researchers as prospective civil engineering graduates who will later enter the world of construction, this research is useful in providing more knowledge about the level of damage to buildings.

METHODS

This research uses a survey method. The research data was obtained from the survey form. The survey form consists of building components, the size of the initial building, the size of the damaged building, instructions for filling out the form. The study was conducted for 2 months (August-September 2021). The survey form filling technique was carried out by the researcher himself. Data were analyzed using descriptive analysis method.

Types of Data

There are two types of data used in this study, namely primary data and secondary data (Sugiyono, 2018).

1. Primary data is data obtained directly from the object of research. Direct data collection was carried out by filling out survey forms and documentation.
2. Secondary data is data obtained, namely the calculation of the initial budget plan, AHSP 2016, the basic price of the city of Palangkaraya in the second semester of 2021 and literature studies, both from writings, relevant references, journals, book articles and other sources that support research.

Research Instruments Research

Instruments The instruments in this research are survey and documentation forms, namely data collection through forms that are arranged to obtain information on direct observation activities using all the five senses and obtain data through research on written objects, such as books, magazines, diaries. , artifacts, videos and so on (Sugiyono, 2018).

Data Processing Techniques

As for the steps in data processing in this study, as follows:
1. Collecting data drawing plans for existing buildings.
2. Calculate the initial building cost budget plan using AHSP (labor unit price analysis) 2016, basic price semester II Palangkaraya City 2021 using Microsoft Excel 2010.
3. Compile the components of damage to non-storey college buildings with Microsoft Excel 2010.
4. Calculate the percentage rate Damage to damaged components using Microsoft Excel 2010.
5. Calculating the budget plan for damage using Microsoft Excel 2010.

RESULTS and DISCUSSION

Preparation of Research Data

Before analyzing research data, first calculate the RAB (Cost Budget Plan) building I Faculty of Economics and Business , AHSP (Analysis of work unit prices) 2016, and Basic Price for the second semester of Palangka Raya City 2021.

Components of Damage to Lecture Buildings

Based on the results of an identification survey and documentation in the field on the lecture building I Faculty of Economics and Business, University of Palangka Raya, there are 3 components that have damage, namely key components, frames and leaves, as well as painting on types of architectural components. The results of the survey and documentation can be seen in Figure 1 below:
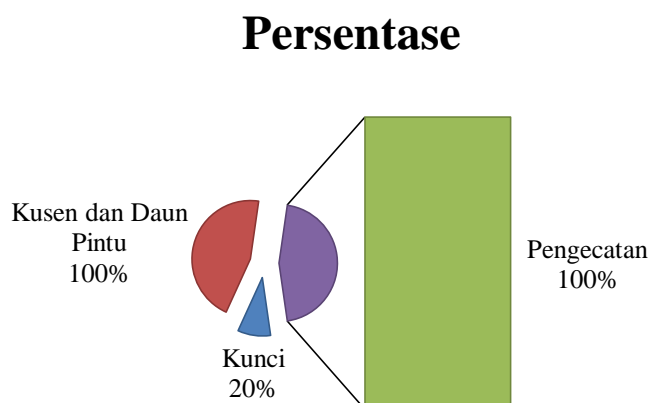

Figure 1. Damage Level

Source: Data Analysis (2021) The

Total percentage of damage to the component is 8.6% in the category of Light Damage.
Cost of damage to buildings
Comparison of the initial cost with the cost of damage to non-storey buildings can be seen in Figure 2 below:
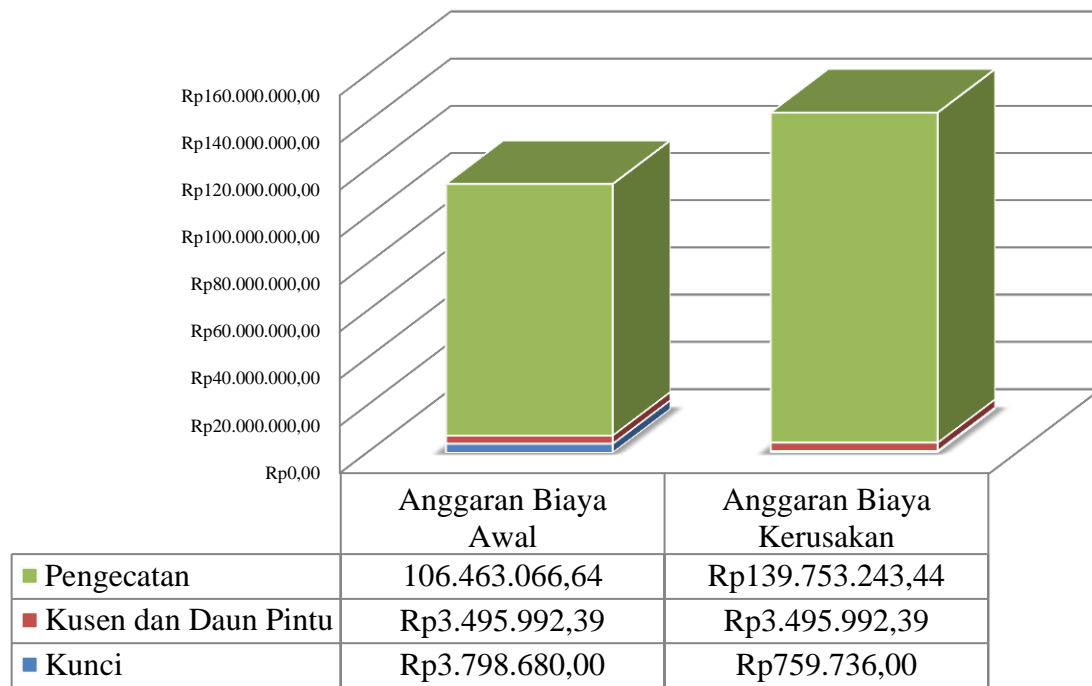

	Anggaran Biaya Awal	Anggaran Biaya Kerusakan
■ Pengecatan	106.463.066,64	Rp139.753.243,44
■ Kusen dan Daun Pintu	Rp3.495.992,39	Rp3.495.992,39
■ Kunci	Rp3.798.680,00	Rp759.736,00

Figure 2. Budget Comparison
Data Source: Data Analysis (2021)

The results of the recapitulation of the damage budget based on percentages and the cost budget based on the quantity of damage, can be seen in table 3 below:

Table 1. Data Validity

No	Cost Based on	Total Cost
1	Quantity of building damage	Rp110,718,795, 02
2	Percentage of damage to buildings	IDR 110,718,795.02
	Difference	IDR 0

Source: Data Analysis (2021)

CONCLUSIONS
There are 3 categories of component types in the building of the first lecture building of the Faculty of Economics and Business, University of Palangka Raya, namely Structural, Architectural, Utilities, and Electrical. Each of these types has components, namely Architectural : Foundations, Sloof, Columns, Ring Balk, Walls, and Roof Frames, Architectural : Roofs, Ceilings, Floors, Locks, Frames and Leaves, as well as Painting, Utilities : MCK, and Electrical : Electricity . 2) There are 3 components, which have percentage damage, namely 0.5% locks, 0.7% frames and leaves, and 7.37% painting, with a total of 8.6% falling into the category of damage levels, namely Light Damage. 3) The budget for the cost of damage is found in 3 components, namely the key of Rp. 759,736.00, the frame and leaf of Rp. 3,495,992.39, and the painting of Rp. 106,463,066.64.

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