Temporary Occupancy Permit (SLF) for Building Sustainable Strategy

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Abstract. When both deterioration and obsolete being considered reutilizing, it needed to assess a temporary occupancy for this existing Building. Temporary Occupation Permit as an assessment stage on function properly as building operation. Deterioration and obsolete both are a result of a condition on utilizing for more than 20 years. Hence, as a visual, it has a few decreasing physical values caused by utilization usage. Present, the buildings in Indonesia started to focus on this process. So, how this assessment to be a part of sustainability building, related that matter. Bank Jawa Barat in Jl Naripan, is a case study for this paper. As one of a few multi-stories buildings in Bandung, this Building runs into decreasing quality. Directions of the paper aim at strategy on building sustainable based and methods to take adaptation, certification, and building age aspects into account. These will define temporary occupation, deterioration, and obsolescence related to the current Building of new construction. In this paper, the perspectives of the building sustainability of a whole building are presented, based on state of the art, a study of function properly as building operation on the temporary occupation of life-cycle assessment for buildings. Finally, the Building of Bank Jawa Barat will illustrate to answer all regarding evidence the topic, that occupancy permit is a sustainable building strategy.

Keywords: building management; building sustainable; occupation permit

1. Introduction

According to Indonesian Building Act [1], named by UUBG, stated that define a building is a result of construction work that is integrated partly or fully in its places, such as land or water. Which carry out human activities, such as housing, religious activities, business activities, social, cultural, or special activities. Moreover, the UUBG for building management conducts utilization activities of designated functions, periodically maintenance [2], building treatment [2], and inspection activities to maintain the reliability of the Building, infrastructures, and facilities to functioning properly. The building reliability requirements consist of requirements for safety, healthy, comfort, convenience, and harmony with the surrounding environment.

In the development framework of the building sector, UUBG stipulations stated that building management is not only an activity stage but also processes of technical planning and construction, such as building utilization, preservation, and demolition activities. Moreover, created a functional and Building structure should be harmonious and harmony in the environment. It gains guarantees the reliability of the Building in terms of safety, health, comfort, and convenience. Meanwhile, the government [3] stated that every Building must have administrative and technical requirements for all
functions of the Building. Building administrative requirements such as the status of land rights and occupation permits from stakeholders. While building technical requirements include building layout requirements and building reliability requirements. Then, utilization of the Building occurred after a temporary occupation permit issued by the regional government, named Sertifikat Laik Fungsi (SLF). This is mentioned in regulation [4] that concerns the occupation stage. This temporary occupation permit will be issued by certification for utilization to operate the Building as well. Then this Building is certified properly to use.

1.1. Bandung City and the Buildings

There are 868 medium to high-rise buildings (5 floors and above) built in Bandung City until 2019. Some of the buildings in Bandung City have around 1-100 years old that included heritage buildings. However, these buildings are still operating to serve the public properly. Several buildings in the city of Bandung have changed their function, such as the old row of shops on Jalan Kapatihan which several blocks turned into a hotel, not only changed their function but also increased the intensity of using the Building. Caused by obsolescence, improper maintenance and monitoring will result in being vulnerable to decreasing quality, thus reducing their reliability and properness. Not only for old construction must be considered a proper function, but also for new construction must eligible requirements before and when used. New construction usually has a higher usage intensity so they must-have requirements, namely being reliable to ensure the safety of their users.

SLF issuance for Bandung is directly supervised by the Spatial Planning Agency (Distaru). The issuance of this SLF refers to government rules [4] that concern on temporary occupation and also specifically regulates the designation of buildings in the Bandung. However, practically SLF assessment in Bandung City is only carried out when an applicant submits an SLF issuance. As shown in table 1, data compiled from the Bandung government, there are at least 28 units medium to high-rise buildings that have received Temporary Occupation Certification which active for 2020.

| Year | Number of Medium to High Rise Building | Number of Active Certificates | % |
|------|----------------------------------------|-------------------------------|----|
| 2015 | 179                                    | 9                             | 5.03% |
| 2016 | 179                                    | 7                             | 3.91% |
| 2017 | 179                                    | 2                             | 1.12% |
| 2018 | 179                                    | 3                             | 1.68% |
| 2019 | 179                                    | 2                             | 1.12% |
| 2020 | 266                                    | 5                             | 1.88% |

* Bandung City Spatial Planning Office, 2020

Figure 1 Graph of the number of buildings with the number of SLF

source: Bandung City Spatial Planning Office, 2020
Jakarta is a benchmark that policies related to SLF must be carried out intensively and immediately caused by the lack of law enforcement from both the Central Government (PUPR Ministry) and the Regional Government. Nevertheless, figure 1, illustrated that city of Bandung as one of the metropolitan cities in Indonesia must be ready for more rapid development by seeing that the fulfillment of SLF is strategic to ensure the feasibility of buildings, especially at the utilization stage, the Regional Government of Bandung City needs to know what are the challenges in implementing this Building Certification for Occupation (SLF). So that these challenges can be found solutions and always carry out evaluation and continuous improvement.

1.2. Case Study: Bank of Jawa Barat (BJB)
Bank of Jawa Barat (BJB) tower located on Jl. Naripan, Bandung, is one of the infrastructures owned by Bank of Jawa Barat as the Central Office Bank that completed in the 90s decade has eleven stories connected with old construction, heritage building, as shown in figure 2 and 3. The more increasing economic growth, the more increasing the bank activities of BJB as a Regional Bank Company owned by the Province government. Nevertheless, caused by increasing the economic and activities impact on the building utilization.

Figure 2. Left side view (from parking view) of Bank of Jawa Barat photograph.

Figure 3. Front side view (Naripan view) of Bank of Jawa Barat photograph.

Figure 4. A typical plan of a basement, ground floor, first floor, and second floor (four stories) as a podium of tower Bank of Jawa Barat.
As shown in Figure 4, approximately 12,000 m² for all podium spaces, also in Figure 5 shown that 88,800 m² for tower spaces. Nevertheless, the tower was utilized more than 25 years ago. According to the rule should be assessed for an occupancy permit, caused by more than five terms periodically since this completion. It would be a problem in how to assess an existing building.

2. Related on Building Sustainable Strategy

An understanding of building sustainable strategy, that in many advanced countries norms, laws, and standards have been adopted that define the life cycle of a country's buildings from design to demolition. Unfortunately, not all countries are concerned about the sustainability of buildings, which requires a responsible approach to the environment, awareness of the problem from the public and private sector, and a common understanding of society. This Building sustainable strategies might be a big problem to an understanding of the sustainability of the Building [5]–[12]. Lee (2014) stated that the occupancy requirements on thermal comfort, visual illumination, indoor air quality, and other energy-consuming needed to design for the buildings. Moreover, energy-efficient of the buildings designed to integrate this minimally energy-intensive manner, while simultaneously reducing or eliminating unnecessary energy consumption [13].

Furthermore, Maija (2016) found that sustainability of the Building contributes to meeting the global goals regarding climate change and human rights, as well as national and local goals of reducing poverty, creating jobs, economic growth, saving of energy, public health, and others. A few major indicators were applied for evaluating building performance. An innovative and complex way to green measuring by assessing the human comfort and performance – moreover, costs and emissions of CO2 are used as metrics of performance [14].

According to those meanings, Indonesian Building Act [3] stated that the Building has included requirements for safety, health, comfort, and convenience. Providing the criteria in building reliability principles, the government issued a regulation regarding the Certification for temporary occupation permit, named SLF. This is related to how to maintenance and treatment of the Building [2] when utilized. Furthermore, this certificate is issued by the regional government to declare the proper building function for both administrative and technical requirements on pre-utilized.

Hence, this often-used about installing new building systems, such as improving occupant health or increased adaptability, durability, and resilience of the buildings. This would be evidence of an occupancy permit is a building sustainable strategy such as utilizing, maintenance, and managing.
2.1. Building as an Adaptation of Utilization

According to utilize of the Building, as a consequence of current and the next obsolescence, so redundancy needs to be considered in every adaptation proposal that responds to obsolescence and redundancy. They are divided into three categories: economic, technical, and functional [15]. Then Macek (2014), created the base of the Buildpass (Building Compliance Testing Certification). Then maintenance and renovation represent a high cost within the whole lifecycle of a built asset. Rational owners and facility managers try to minimize the outlay on maintenance and improvement [16]. This kind of response to an adaptation stage for a building, maintenance, and improvement.

Moreover, Aliakbar (2017) discovering a new holistic development that simplified in making sustainable decisions to support the work needed for the construction of the built environment on building renovations. It permitted us to use supporting the success that developed to audit, develop and support building improvements, and support success throughout the project life cycle. Thus, the work agreement that takes holistic sustainability decisions to support project development and communicate results with relevant stakeholders [17].

The researcher subsequently argues that it is whereas an inductive approach. Douglas (2006) shown in figure 6, the life cycle of a building is essential to be understood by researchers [15]. This addressed creating a concept of a life cycle framework for the existing building utilization in the adaptation stage.

![Figure 6](image)

**Figure 6.** A Linear Model of the Whole Life Cycle of a Building.
Source: Douglas, 2006

Based on adaptation, it comes from Latin ‘ad’ (to) and ‘aptare’ (match). According to this paper, including some works to change its capacity, function, or performance on the Building and maintenance (ie, any interventions to adjust, reuse, or increase the Building to fit new conditions or requirements). Moreover, the adaptation of existing buildings traditionally had a limited meaning which shows most forms of performance and change in usage. There are many different terms used to describe the intervention in buildings that go beyond maintenance related to adaptation. Repairs, rehabilitation, renovation, or restoration are sometimes considered identical to each other, even by some in the construction industry [15], as shown in figure 7.
However, this conduct to increased adaptability, durability, and resilience of the buildings for improving occupant comfort during operation stage supporting to building sustainable strategy.

2.2. Building Certification for Occupation

Building certification is defined by a completion that is constructed and compliant to achieve the requirements and standardize on provisions of by-law specified. This stems from the most frequent use of the term sustainability [18]–[25]. Related to the occupancy, Indonesian Building Act [1] requires; safety, health, comfort, and convenience that should be the building reliability principles. The government issued a regulation regarding the Certification for sustainability on building as a building certification intended to be a reference officially for occupation permits and utilized [4].

Buildings that are declared eligible properly are carrying out a technical assessment that is certified. Moreover, the buildings that are not functional are still allowed to repair them until they are declared fit to function. Caused by the owner is unable to repair, by countermeasures taken. If residential houses are not fit for function and cannot be repaired and endanger the safety of residents or the environment, the Building vacated. When the Building hazardous every public interest, the local government can carry out its demolition. Next, this is a mechanism for a building assessment procedure [4].

According to the Australian, Malaysian, and Singapore Building Authority, mentioned that Certification of Occupation Permit is a document that issued by a local government agency or building department who certified a building's compliance with applicable building codes and other regulations, and indicating it to be in a condition suitable for occupancy.
As shown in figure 7, illustrates the procedure of issuance certification of occupancy. Then periodically for five years as public buildings reassessed and renewal the certification status. Moreover, a technical requirement for buildings more specific to assess the existence of architectural, structure and construction, utilities, and site management. That based on the requirement which stated in the regulation of Temporary Occupation Permit [4], as follows:

1. Status of land rights
2. Building ownership status
3. Building Construction Permit (IMB) Documents.

2.3. The Age of the Building

Building age depends on the quality of construction and Building typology. All stated that are caused by physical deterioration and obsolescence. The studies found that the assumption of a strong association between building age, quality, and value, to be a firm component related to each other. Furthermore, building age is a significant parameter in building specifications.

None study stated that the Building has a limited age. All will occur decreasing of quality, such as material or construction caused by utilizing. During utilization, the Building influences the user, climate, operating system, maintenance, and management [26]–[30]. Hence, these conditions validating to all types of construction, as new and old construction.

Nevertheless, Indonesia stated for the age of the Building approximately fifty years for new construction [31] and over fifty years for old construction [32] as the conservation building category. However, for this study related to the case study that was completed in the 90s decade, it means that the tower of BJB has more than twenty years existed.
3. Discussion

In the case study, BJB tower is an existing building. In the beginning 90s decade, BJB tower has more than twenty years or about 25 years old built. This tower is a new construction category and connects with a heritage building which a part of the podium side, grey block as shown in figure 10. But this study does not include the heritage side.

According to figure 8, there is three stages process of Occupancy Permit submission (pink, yellow, and green). The pink-stage is an initial process of pre-submission on the assessment of physical dan authentically document. And the yellow-stage is the second process when all authentically document and physical check recorded as a submission to the process. Next, the green-stage is the final process when all document records are checked and the process of certification issued by a regional government agency (PTSP).

Related to the significance of utilization, this Building never assessed for an occupancy permit. This would be the first time to do. Douglas (2006) stated that utilization of the Building, has three categories for current condition and the next obsolescence impact, as economic, technical, and functional. A consequence that needed to be considered in adaptation to the response.

Moreover, those categories influence the condition physically since this tower was built. Shown in figure 11, illustrated that a process related to yellow-stage in figure 8.
The assessment stage occurs during the second process in yellow-stage on the evidence of the building components and authentically document. The construction components for assessment are architecture, structure, utility, and site management. And for document components are building permits, as-built drawing, spatial planning permit, land use, flight cover area, and others related to environment spatial. Assessment occurred on those aspects, current construction, and administration documents.

Refer to Figure 11, which started from checking on building permit and as-built drawing, all stages as a whole system as input, process, and output. Input is collecting and observation data, the process is analysis data, and output is a statement result. Nevertheless, every result has two conditions one is proper, and the other is not. If the result is not proper, proceed to the audit stage with a laboratory test completed to have two recommendations, renovated or retrofitted completely to reassessed.

Therefore, this provides a better understanding by defining keywords and terminology related to the concept of building sustainability related to ‘adaptation of building utilization’, ‘building occupancy certification’, and ‘building age’ to evidence. As a whole system, a building is a thing that completely creates to realize. Moreover, the comprehensible arrangement of separate elements to be completely and even more being tricky, caused by problems of sociology, culture, psychology, management, and engineering being complexity related to the building sustainable strategy. An understanding of building sustainable strategy, that in many advanced countries norms, laws, and standards have been adopted that define the life cycle of buildings from design to demolition.

According to Indonesian Building Act stated that the Building requires included safety, health, comfort, and convenience. Providing the criteria in building reliability principles, the government issued a regulation regarding the Certification for temporary occupation permit. This is related to how to maintenance and treatment of the Building when utilized. Hence, this often-used about installing new building systems, such as improving occupant health or increased adaptability, durability, and resilience of the buildings. Due to that adaptation, the Building should have adaptable to users during operation stage, as shown on Figure 12.
Furthermore, as shown in **figure 12**, the building system as a life cycle illustrated that implying for the sustainability of a building. From design to adaptation, then the last to anticipate caused by deterioration and obsolescence proceed to demolish, renovated, or retrofitted.

![Figure 12. Definition of Building Performance and Adaptation](https://ocw.tudelft.nl/course-readings/1-2-1-introduction-managing-building-adaptation-processes/)

**Figure 12.** Definition of Building Performance and Adaptation

![Figure 13. Building System as a Building Life Cycle](https://ocw.tudelft.nl/course-readings/1-2-1-introduction-managing-building-adaptation-processes/)

**Figure 13.** Building System as a Building Life Cycle

![Figure 14. Illustration of Building Sustainability](https://ocw.tudelft.nl/course-readings/1-2-1-introduction-managing-building-adaptation-processes/)

**Figure 14.** Illustration of Building Sustainability

Related to this study BJB tower is on the existing Building, **figure 14** illustrated that also prepared for new and old construction as well. Focus on BJB tower, on **figure 13** for occupation permit assessment will put in stages in that life cycle as utilization, adaptation, deterioration, and obsolescence, then demolish, renovation or retrofitting stage.

**Figure 15** shows that assessment framework for issuance occupancy permit and building life cycle, both are illustrated on how the Building occurred the system as a creating the new building systems. From programming until adaptation stage for the users to response and decide to do demolish or preserve.
4. Conclusion

Occupancy permits are affected by many considerations. They are the intention of the owner to create and completion, building administration stage, building maintenance and treatment, building management, towards the end of the journey as demolition. Based on adaptation, related to utilization that permitted us to use supporting the success of audit, develop and support building improvements, and support success throughout the building life cycle. Not only this could be essential that why building utilization more important for its sustainability. But also, this would be evidence of an occupancy permit is a building sustainable strategy such as utilizing, maintenance, and managing that regarding all evidence to answer. Based on adaptation, related to utilization that permitted us to use supporting the success of audit, develop, support building improvements and success throughout the building lifecycle.

![Figure 15. Building Sustainable Diagram](image)

This paper obtained the recommendation for further study in all aspects conducted on building performance and building sustainability. This idea developed increasing the quality of building sustainability for its life. Furthermore, for government that sustainable Building will focus on efficiency and effectiveness for building operation and performance, hence, this will completely fulfill the gap in the post-occupancy stage. All of them used by professionals according to the project types, nevertheless, for the new Building and new construction. This research will continue to guide forward the building lifecycle completely.

And lastly, the recommendation for professional engineers and architects will guide to many current buildings on obsolescence and deterioration condition. May not only for new construction, moreover, for old or heritage buildings. Increasing the quality of building management (maintenance, treatment, utilization) to achieve on sustainability of the Building.

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