

When looking at the level of fire hazard risk, refer to Republic of Indonesia Government Regulation Number 16 of 2021, concerning Implementing Regulations of Law Number 28 of 2002 concerning Buildings, Green House Display Buildings are included in buildings with a high level of fire risk, because they contain a lot of flammable materials such as leaves, wood and so on, it is even possible that fires may occur due to the actions of irresponsible visitors.

The Green House Display building is very prone to fires, like forests in Indonesia, especially in Kalimantan and Sumatra, this is caused by weather factors or human activities. Therefore, the Building Fire Safety Management (MKKB) system in this building must be implemented as well as possible. The fire safety management system in question is an active and passive fire protection system. These systems include:

- 1) fire detection systems, both smoke and heat detectors;
- 2) firefighting system (hydrant and sprinkler);
- 3) use of fire-resistant/non-flammable building materials;
- 4) adequate fire evacuation routes and fire safety training.

To ensure the reliability and safety of buildings, it is necessary to manage fire hazards correctly and in a planned manner. Fire safety management requires a planned program called Fire Safety Management. By conducting this research, it is hoped that it will provide benefits such as:

- 1) It is hoped that it will be helpful for Green House Display - BRIN building managers to obtain information related to building data regarding the Building Fire Safety Management System implemented in the building.
- 2) From the analysis results, whether the fire safety equipment installed in the Green House Display building is appropriate for its function and has good reliability can be seen.
- 3) Can repair/perfect the fire safety systems installed in the building if, in the future, after the research, things are found that could be better.

2. Method

The research method used in this research is a quantitative descriptive research method, where direct observations are carried out according to conditions in the field. Data collection was carried out by direct observation to obtain data directly by observing things related to research on the research object and being directly involved in activities. Apart from this, direct interaction is also carried out with the actors involved in the research object. As secondary data, relevant information regarding the theoretical basis was also collected from pertinent references to the research topic, such as applicable legislation and guidebooks. To carry out research analysis, a building inspection was carried out based on building inspection standards from the Center for Settlement Research and Development, Public Works Research and Development Agency, Department of Public Works in 2005 (Pd-T-11-2005-C).

3. Results and Discussion

Quoted from the Research and Development Center for Settlements, Public Works Research and Development Agency, Department of Public Works, 2005, "Execution of building reliability checks against fire hazards must be carried out by experts appropriate to their field, and competent agencies must validate the results."

Building Safety System Reliability (KSKB) value checks carried out include (a) site equipment, (b) means of rescue, (c) active protection system, and (d) passive protection system. Value weighting standards are based on PD-T-11-2005-C, as seen in the following table.

Means of Rescue

Based on Pd-T-11-2005-C, rescue facilities consist of:

- a) Way out
- b) There are 2 exits to the Green House Display building, but one of the doors is only 120 cm wide. The door leads directly to the stairs and does not have a smoke-free lobby, so the assessment for the exit is only rated "Adequate", because there is one condition in Pd-T-11-2005-C which is not fulfilled, so the condition value is 7.6%.
- c) Exit Construction
 For exit road construction, the score is "Good", because all the criteria in Pd-T-11-2005-C are met, so the condition score is 8.8%.
- d) Helicopter Platform
 There is no helipad in the Green House Display building, nor the surrounding areas, so this point received a "Poor" score with a condition score of 4.1%

Table 3

Calculation of Rescue Means Components (Pd-T-11-2005-C)

No	KSKB/SUB KSKB	Rating result	Booth. Evaluation	Weight	Condition Value	Number of Values
1	2	3	4	5	6	7
Means of Rescue				25		
1	Way out	C	80	38	7.6	
2	Exit Construction	B	100	35	8.8	
3	Helicopter Platform	K	60	27	4.1	
					Amount	20.4

Active Protection

a. Detection and Alarm

In the Greeb House Display building, fire detection tools use Addressable Smoke and Heat Detectors and Aspirating Smoke Detectors (ASD) specifically for indoor mountain areas. Installation is correct 03-3986, so it can be categorized with the "Good" value criteria. For the condition value, namely 1.9%.

b. Siamese Connection

Easy-to-reach Siamese connections have been installed in this building area, so it can be rated "Good" with a condition score of 1.9%.

c. Light fire extinguisher

The type of APAR installed is by SNI 03-3988, but the number does not correspond to the building area required in PD-T-11-2005-C, so it is assessed as "Fair" with the condition value obtained being 1.5%.

d. Building Hydrant

Geding hydrants in this building, have been installed on every floor, and all the "Good" criteria can be met. So, the condition value is 1.9%

e. Sprinklers

The sprinklers have been installed according to the "Good" criteria, resulting in a condition score of 1.9%.

f. Overflow Extinguishing System

An overflow extinguishing system is not installed in this building so it can be categorized as "Poor" with the condition rating of 1.0%

g. Smoke Control

Control equipment is not installed according to the requirements, whether in type, quantity, or location. So, the value criteria for smoke control are categorized as "Poor". The condition value is 1.2%

- Badan Standarisasi Nasional. (2000). *Tata cara perencanaan sistem proteksi pasif untuk pencegahan bahaya kebakaran pada bangunan rumah dan gedung. SNI 03-1736-2000*. Jakarta: Badan Standarisasi Nasional.
- Badan Standarisasi Nasional. (2000). *Tata cara perencanaan, pemasangan dan pengujian sistem deteksi dan alarm kebakaran untuk pencegahan bahaya kebakaran pada bangunan gedung. SNI 03-3985-2000*. Jakarta: Badan Standarisasi Nasional.
- Badan Standarisasi Nasional. (2001). *Sistem Pengendalian Asap Kebakaran pada Bangunan Gedung. SNI 03-6571-2001*. Jakarta: Badan Standarisasi Nasional.
- Effendie, M. I. (2017). Penerapan Fire Safety Management pada Bangunan Gedung Grand Slipi Tower Dikaitkan dengan Pemenuhan Peraturan dan Standar Teknis Proteksi Kebakaran. *Jurnal Media Teknik & Sistem Industri*, 66-71.
- Fitriyanti, P. N. (2022). Evaluasi Sistem Proteksi Kebakaran Pada Bangunan Gedung Hotel Bertingkat. *Jurnal Ilmiah Teknik Sipil*, 1-10.
- Hardy, F. R. (2019). Evaluasi Manajemen Keselamatan Kebakaran Gedung (MKKG) Dalam Penanggulangan Kebakaran di Gedung Instalasi Teratai dan Instalasi Prof. Soelarto RSUP Fatmawati Tahun 2018. *Jurnal Ilmiah Kesehatan Masyarakat*, 1-7.
- Ir. Dian Irawati, MT. (2020). *Pengantar Keselamatan Kebakaran Hunian Rumah Susun*. Jakarta: Kementerian Pekerjaan Umum dan Perumahan Rakyat.
- J. Wahyu Kusumosusanto. (2022). *Buku Saku Petunjuk Konstruksi Proteksi Kebakaran*. Jakarta: Kementerian Pekerjaan Umum Dan Perumahan Rakyat.
- MT., I. N. (2003). Kajian Penerapan Sistem Proteksi Pasif Desain Site Planing Pada Beberapa Kasus Rumah Susun di Jakarta dan Bandung. *Digitized by USU digital library*, 1-18.
- Nugraha, R. (2018). Penerapan Sistem Manajemen Kebakaran di PT. Adiluhung Saranasegara Indonesia, Bangkalan. *The Indonesian Journal of Occupational Safety and Health*, 378-386.
- Peraturan Menteri Tenaga Kerja dan Transmigrasi No : PER.04/MEN/1980. (1080). *Syarat-syarat Pemasangan dan Pemeliharaan Alat Pemadam Api Ringan* . Jakarta: Menteri Tenaga Kerja dan Transmigrasi.
- Permen PU NOMOR : 26/PRT/M/2008. (2008). *Persyaratan Teknis Sistem Proteksi Kebakaran pada Bangunan Gedung dan Lingkungan*. Jakarta: Menteri Pekerjaan Umum.
- PP No.16 tahun 2021. (2021). *Peraturan Pelaksanaan Undang-undang Nomor 8 Tahun 2002 tentang Bangunan Gedung*. Jakarta: Presiden Republik Indonesia.
- Pusat Penelitian dan Pengembangan Permukiman. (2005). *Pemeriksaan keselamatan kebakaran bangunan gedung*. Jakarta: Badan Penelitian dan Pengembangan PU.
- Putri, N. A. (2019). Analisis Sistem Proteksi Kebakaran Sebagai Upaya Pencegahan Kebakaran. *Bangun Reka Prima*, 1-11.
- Ratnayanti, K. R. (2019). Evaluasi Sistem Proteksi Aktif dan Pasif sebagai Upaya Penanggulangan Bahaya Kebakaran pada Gedung Sekolah X Bandung. *Jurnal Rekayasa Hijau*, 1-14.
- Sari, M. L. (2020). Sistem Proteksi Aktif dan Sarana Penyelamatan Jiwa dari Kebakaran di RSUD Kabupaten Bekasi. *Jurnal Ilmu Kesehatan Bhakti Husada*, 1-14.
- Saugani, M. S. (2020). Evaluasi Pengelolaan, Pengawasan dan Pengendalian Sistem Proteksi Kebakaran pada Gedung di Universitas Muhammadiyah Yogyakarta. *Semesta Teknika*, 1-7.
- Wulandari, R., Febriani, A., & Rahmalisa, U. (2019). Sistem Informasi Presensi Fingerprint Diktendik Berbasis Web (Studi Kasus: Ma Ar-Rosyidiyah Bengkalis). *Jurnal Informatika Polinema*, 6(1), 1-8..