LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW*
KARYA ILMIAH : JURNAL ILMIAH

Judul Jurnal Ilmiah (Artikel)	:	The Empirical Analysis Model on Identifying Sick Building Syndrome in Hot Humid Tropical Buildings
Jumlah Penulis	:	3 orang (Nurrahmi Kartikawati, Erni Setyowati, **Djoko Indrosaptono**)
Status Pengusul	:	penulis ke-3
Identitas Jurnal Ilmiah	:	a. Nama Jurnal : Civil Engineering and Architecture
		b. Nomor ISSN : ISSN: 2332-1091 (Print), ISSN: 2332-1121 (Online)
		c. Vol, No., Bln Thn : Vol. 9 No. 1, Page : 52-73, 2021
		d. Penerbit : Horizon Research Publishing
		e. DOI artikel (jika ada) : 10.13189/cea.2021.090105
		f. Alamat web jurnal : https://www.hrpub.org/journals/article_info.php?aid=10484
		Alamat Artikel : https://www.hrpub.org/download/20210130/CEA5-14821795.pdf
		g. Terindex : Scopus, Q3

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- [ ] Jurnal Ilmiah Nasional Terakreditasi
- [ ] Jurnal Ilmiah Nasional Tidak Terakreditasi

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d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	6,00	6,00	6,00
Total = (100%)	**29,00**	**29,00**	**29,00**
Nilai Pengusul = (20% x 29,00) = 5,80			

Semarang, 26 Februari 2021

Reviewer 2

Prof. Dr. Ir. Edi Purwanto, M.T.
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Unit : Arsitektur FT UNDIP

Reviewer 1

Prof.Dr.Ing.Ir. Gagoek Hardiman
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Unit : Arsitektur FT UNDIP

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Hasil Penilaian *Peer Review* :

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b. Ruang lingkup dan kedalaman pembahasan (30%)	12,00			11,00
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	12,00			9,00
d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	12,00			6,00
Total = (100%)	**40,00**			**29,00**
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1. **Kesesuaian dan kelengkapan unsur isi jurnal:**
   Artikel sudah ditulis secara sistematis sesuai dengan kaidah penulisan ilmiah; dilengkapi dengan Appendix dan Acknowledgement serta 38 referensi ilmiah terkait dengan tema penelitian. Pengusul merupakan penulis ke tiga.
2. **Ruang lingkup dan kedalaman pembahasan:**
   Tema penelitian/ artikel adalah sick building syndrome pada 2 bangunan di Kampus Undip (Donmitory dan apartement mahasiswa. Dibahas dengan mendalam serta memperhatikan pula kaitannya dengan hal actual pandemic covid 19.
3. **Kecukupan dan kemutakhiran data/informasi dan metodologi:**
   Data data primer diambil sesuai dengan tahun penelitian malalui pengukuran langsung serta wawancara.metode yang digunakan mixed method dari Creswell dengan pengukuran quantitative persepsi data qualitative. Analisa menggunakan perbandingan data quantitative dengan data qualitative.
4. **Kelengkapan unsur dan kualitas terbitan:**
   Civil Engineering and Architecture dengan ISSN: 2332-1091 (Print), ISSN: 2332-1121 (Online). Penerbit: Horizon Research Publishing merupakan Penerbit jurnal yang masuk dalam Beall's List sebagai publisher predator. Terindex Scopus Q3.

Semarang,
Reviewer 1

Prof.Dr.Ing.Ir. Gagoek Hardiman
NIP. 195308191983031001
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b. Ruang lingkup dan kedalaman pembahasan (30%)	12					10
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d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	12					6
Total = (100%)	**40**					29
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a. Kelengkapan unsur artikel:
1. Sistematika penulisan sudah ada keterkaitan antara "*title*" dengan IMRDC (*Introduction, Methods, Result, Discussion, Conclusion*).
2. Jumlah referensi yang digunakan mencukupi, dari 38 referensi, 27 merupakan jurnal internasional bermutu.
3. Terdapat 5 referensi berbahasa Indonesia

b. Ruang lingkup dan kedalaman bahasan:
1. Temuan-temuan penting yang memberikan pengkayaan terhadap bidang ilmu arsitektur belum muncul secara eksplisit, temuan penelitian lebih banyak membahas aspek persepsi terkait kenyamanan termal, kualitas udara dalam ruangan, dan sick building syndrome (SBS) pada bangunan beriklim tropis lembab, namun implikasi terhadap kearsitekturalnya belum dikaitkan, dengan demikian belum merupakan temuan yang spesifik/khas dan berkontribusi kebaruan dibidang ilmu arsitektur.
2. Diskusi dan pembahasan sudah cukup mendalam dengan melibatkan sejumlah referensi.

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2. Data yang digunakan sudah mencukupi.
3. Terdapat inkonsistensi penggunaan metode penelitian yang digunakan, dalam abstrak tertulis metode penelitian menggunakan ASHRAE 2017, namun dalam isi artikel metode yang digunakan mengacu pada metode campuran Creswell dan metode campuran paralel konvergen, menjadi pertanyaan apa kaitan ASHARE 2017 dengan metode campuran Creswell dan metode campuran paralel konvergen? Masih terdapat kerancuan antara pemahaman pendekatan penelitian dengan metode/teknik yang digunakan.

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1. ISSN sudah sesuai.
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Semarang, 26 Februari 2021
Reviewer 2,

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The empirical analysis model on identifying sick building syndrome in hot humid tropical buildings

Kartikawati N.[a], Setyowati E.[b], Indrosaptono D.[b]

Save all to author list

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Abstract

Author keywords

SciVal Topics

Metrics

Funding details

Abstract

A tropical hot humid climate provides high humidity that influences the occupant's comfort. This study highlights a comparison of physical measurements and perceptions related to thermal comfort, indoor air quality, and sick building syndrome (SBS) in tropical humid climate buildings. The research method used ASHRAE 2017 and analysis using SPSS 24 by two analytical models, i.e., Model 1 and Model 2. The Model 1 included measurement data of independent variables T, RH, V, and CO_2, and SBS dependent variable, while the Model 2 used perception data of independent variables T, RH, V, and QA, and SBS

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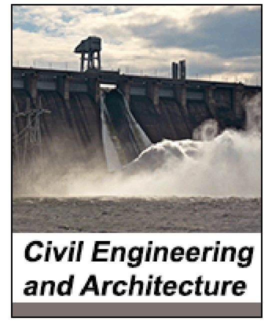

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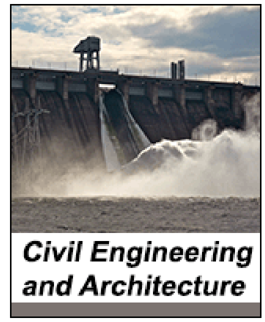

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Vol 9(Jan, 2021) No 1

Environmental Innovation Model with Product and Outcomes Dimension of Green Kampung in Surabaya City

Filipus Priyo Suprobo, Ririn Dina Mutfianti
[Abstract] [Full Text] [Full Article - PDF] pp. 1 - 8
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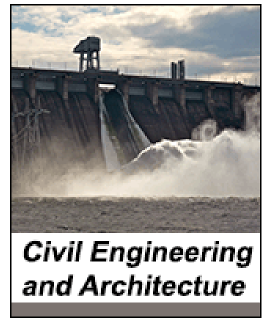

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Civil Engineering and Architecture 9(1): 52-73, 2021 http://www.hrpub.org
DOI: 10.13189/cea.2021.090105

The Empirical Analysis Model on Identifying Sick Building Syndrome in Hot Humid Tropical Buildings

Nurrahmi Kartikawati[1], Erni Setyowati[2,*], Djoko Indrosaptono[2]

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Abstract A tropical hot humid climate provides high humidity that influences the occupant's comfort. This study highlights a comparison of physical measurements and perceptions related to thermal comfort, indoor air quality, and sick building syndrome (SBS) in tropical humid climate buildings. The research method used ASHRAE 2017 and analysis using SPSS 24 by two analytical models, i.e., Model 1 and Model 2. The Model 1 included measurement data of independent variables T, RH, V, and CO_2, and SBS dependent variable, while the Model 2 used perception data of independent variables T, RH, V, and QA, and SBS dependent variable. The study found the conditions were unsuitable with ASHRAE 2017, however, the new SBS index model for the hot-humid tropic has been established. The average temperature was 29.4-31.3°C, the perception of 'neutral' was responded by 50.6% of all respondents, 36.7% stated 'warm' and 7.6% stated *'hot*'. The average relative humidity was between 77-82.4%, but about 50.6% of respondents declared '*neutral*', only 8.9% declared '*slightly damp*', and 2.5% stated '*damp'*. The test results showed Model 2 performed the cyclical effect on SBS, in contrast, Model 1 had no significant effect on SBS because of the varied adaptation of occupants.

Keywords Hot Humid Tropical Buildings, Thermal Comfort, Indoor Air Quality, Sick Building Syndrome

1. Introduction

One of the remarkable things in occupancy is the indoor comfort aspect and the occupant's health. The comfort and health of the residents are inseparable from thermal conditions and indoor air quality. Thermal comfort condition is determined by climatic aspects, such as in Indonesia, which has a hot humid tropical climate. As the main character of the humid tropical climate is high rainfall, high humidity, and warm to hot temperatures becomes the influential factors for indoor thermal comfort. Building with high moisture and warm temperatures can be a habitat for fungus and other microorganisms that can interfere with occupant's health [1]. On the other side, air pollutants coming from inside and outside the building affect the air quality in the building. Air quality degradation brings a notable impact on human health. Approximately 4-5 million people passed away due to air pollutions in 2017 [2]. In contrast, a good air quality takes part in effective healing for some patients that are too sensitive to air pollutants [3]. Particulate matter PM 2.5 is considered as the most remarkable factor to influence the air quality index for more than 90% [4]. The particle of PM 2.5 is associated with vehicle and traffic emission [4]. Due to the vast effect of air quality, providing a pure air policy and implementation plan is necessary, especially for areas with high air pollution [5].

During this pandemic, the environmental hygiene aspects of both outdoor and indoor become important. The

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Effect of Additional Reinforcement Length in Beams on Base-Shear Capacity in Performance-based Design of Low-Rise Buildings

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(b):*Poleswara Rao Kovela, Balaji K. V. G. D, Phanindranath T. S. D, B. Santhosh Kumar(2021).Effect of Additional Reinforcement Length in Beams on Base-Shear Capacity in Performance-based Design of Low-Rise Buildings. Civil Engineering and Architecture, 9(1), 9-22. DOI: 10.13189/cea.2021.090102.*

Abstract Most of the existing low rise RCC buildings with 4 to 6 floors were constructed pursuant to the code provisions without detailed Earthquake analysis. To comply with the revised code provisions, it is essential to build up the seismic resistance of the existing buildings. International building safety agencies such as NEHRP, FEMA, and ATC etc., formulated the Performance-based design methods to verify the seismic resistance of the existing buildings and also recommend the retrofit the building to achieve the targeted performance. Pushover method (nonlinear static analysis) is one of the methods. This paper describes the increase of seismic capacity of structure with the additional steel contribution from 25 % to 75% increase in the beams near the beam-column joints. Moreover, this additional steel is placed up to 02.L, 0.25L and 0.3L of the beam span. To accomplish the above parameters, 4-storey, 5-storey and 6-storey rectangular framed structures are analyzed with the pushover analysis. The seismic capacity curves in terms of base shear versus displacement are illustrated. It is found that 10 to 25% of base shear is increased when beams are provided with additional reinforcement from 25% to 75% @0.2L. In this case of increasing the additional steel length from 0.20L to 0.3L, nearly 5% increase of the base shear is observed in width direction but no augmentation is observed in the length direction of the building.

Keywords Pushover Analysis, Base Shear Capacity, Seismic Demand, Hinge

1. Introduction

Buildings in urban India are predominantly observed from 4 to 6 floors which were constructed long back as per the code provision applicable at that point of time. The codal provisions for the seismic design are being updated/revised based on the research done in the field of seismic engineering. About thirty earthquakes occurred in India during the last 50 years. It was estimated that more than one lakh people died and more than two lakh people injured in the last 20 years due to the damages occurred to the buildings and other structures during the earthquakes in the Indian subcontinent.

To reduce the human loss and property damage in future, it is essential to provide the adequate seismic capacity to the existing buildings. In this context, a lot of research work is being carried out in the USA and other developed countries. Guidelines were formulated in

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Energy Equivalent of Rainwater Harvesting for High-Rise Building in the Philippines

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***(b):** Jibsam F. Andres, Michael E. Loretero (2021). Energy Equivalent of Rainwater Harvesting for High-Rise Building in the Philippines. Civil Engineering and Architecture, 9(1), 74 - 84. DOI: 10.13189/cea.2021.090106.*

Abstract The Philippines is in a tropical location where rainwater is abundant for the frequent rain in a year. Rainwater becomes waste flowing down the drains causing flood, especially in urban areas. This problem initiates local governments in some cities in the Philippines to adapt and implement Green programs that require the installation and utilization of rainwater catchment system. Though this program addresses the control of flood caused by the rain, the generation of energy by utilizing rainwater as an energy source is not yet considered. With this, the study computes the equivalent energy generation by utilizing rainwater. The rainwater energy equivalent includes the following: the increasing number of high-rise building construction as catchment facility; the rainfall precipitation of 58 stations in the Philippines; the floor area and the types of the building; and the volume of water consumption per person per day. The energy equivalent was computed using the 40% of the time the rainfall precipitation equaled or exceeded the other with the average floor area specified from the approved building permit as of 2017. The study established a mathematical equation as an equivalent energy of rainwater utilization. The equation of energy equivalent was derived using the initial building height of 5 meters and an additional succeeding height of 3 meters per floor level.

Keywords Rainwater, Rainfall Precipitation, Energy, High-Rise Buildings

1. Introduction

Heavy rainwater precipitation, which in other contexts is welcomed because it provides and supplies the necessary water for agricultural purposes and even for domestic use. On the other hand, heavy rainwater precipitation may also cause deadly and destructive flash floods. The presence of rainfall exists in many locations and is considered an abundant source of water. Though it might have a negative impact in a few aspects, the utilization of this water resource was studied in terms of rainwater harvesting system abbreviated as RWH or RHS. Studies on rainwater harvesting were considered sustaining shortage of water supplies for irrigation, washing purposes as well as potable water. Rainwater harvesting is an indigenous resources considered as a source of renewable energy. This implies that this RWH contributes importance for sustainable development since it has zero environmental impact compared to conventional energy [1].

The study on hybrid system, solar-wind-rain eco-roof system also includes and mix Rainwater harvesting [2]. Rainwater in this study is collected in the tanks purposely for the efficient use of energy in which the collected rainwater will be used to spray the roof to maintain cooling in the building. Another tank in the design system was used for washing purposes. Rainwater harvesting technique was significantly studied as a supply of water needed mostly for non-potable water application followed by rainwater treatment for potable or drinking water purposes.