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

Judul Jurnal Ilmiah (Artikel) : The Role of Vegetation and Landscape in the Energy Efficiency—of Tropical Building  
 Jumlah Penulis : 3 orang (Eddy Prianto, **Jaka Windarta**, and Bernard Harianja)  
 Status Pengusul : penulis ke-2  
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Dr. Wahyudi, ST, MT  
 NIP. 196906121994031001  
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- Kecukupan dan kemutakhiran data/informasi dan metodologi:**  
Separuh lebih referensi diterbitkan kurang dari 10 tahun, namun banyak referensi berbahasa Indonesia bahkan bukan dari jurnal seperti dari koran.
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Reviewer 1



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**2. Ruang lingkup dan kedalaman pembahasan:**

Isi artikel ini berkaitan dengan peran dalam efisiensi energi – bangunan tropis. Metode dan Langkah yang dilakukan cukup jelas. Data-data yang ditampilkan cukup banyak, jelas dan detail yang dilengkapi dengan table dan gambar guna memperjelas pembahasan tentang konservasi energi sebagai bagian dari konservasi energi dalam bangunan. Pembahasan tentang efektifitas selubung bangunan yang memiliki kemampuan melakukan konservasi energi dengan mengangkat kebutuhan akan mesin pendingin yang bertenaga listrik untuk beroperasi merupakan pembahasan yang diharapkan menjadi kontribusi tulisan ini.

**3. Kecukupan dan kemutakhiran data/informasi dan metodologi:**

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**4. Kelengkapan unsur dan kualitas terbitan:**

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Kualitas penerbitan cukup bagus dan tulisan dapat dibaca dengan baik

Semarang,  
Reviewer 2

A handwritten signature in black ink, appearing to read 'Facta', enclosed within a simple, hand-drawn rectangular border.

Mochammad Facta, S.T., M.T., Ph.D.  
NIP. 197106161999031003  
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Advanced Science Letters  
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## The role of vegetation and landscape in the energy efficiency—of tropical building (Article)

Prianto, E.<sup>a,b</sup>, Windarta, J.<sup>a</sup>, Harianja, B.<sup>b</sup>

<sup>a</sup>School of Postgraduates Studies, Diponegoro University, Semarang, Indonesia

<sup>b</sup>Department of Architecture, Faculty of Engineering, Diponegoro University, Semarang, Indonesia

### Abstract

View references (23)

Achieving energy efficiency in the building depends on the use of passive and active designs on the building constructions. Active design can be referred to a way in designing building that consumes electricity, meanwhile the passive design pointed to building design that take advantages of prevailing climate and natural energy resources. The building heat load mostly due to the elements of building envelope which consumes much electric energy for obtaining indoor comfort. It is the responsibility of building designer to design a comfortable building without consuming much energy. In this study, we used the OTTV (Overall Thermal Transfer Value) and the ECOTECT software version 4 Beta. The result shows passive environmental solution reduced the building heat load significantly about 30% to the Indonesian National Standard (SNI). The numerical prediction of energy demand inside the building has many advantages, such as time saving and easily applied in the design stage. © 2017 American Scientific Publishers. All rights reserved.

### SciVal Topic Prominence ⓘ

Topic: Natural Ventilation | Thermal Comfort | Wind Pressure

Prominence percentile: 92.809 ⓘ

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Building Energy Landscape OTTV Tropical

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👤 Harianja, B.; Department of Architecture, Faculty of Engineering, Diponegoro University, Semarang, Indonesia  
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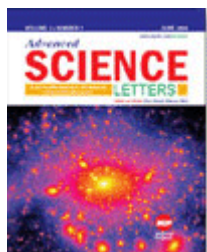
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# The Role of Vegetation and Landscape in the Energy Efficiency—of Tropical Building

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Achieving energy efficiency in the building depends on the use of passive and active designs on the building constructions. Active design can be referred to a way in designing building that consumes electricity, meanwhile the passive design pointed to building design that take advantages of prevailing climate and natural energy resources. The building heat load mostly due to the elements of building envelope which consumes much electric energy for obtaining indoor comfort. It is the responsibility of building designer to design a comfortable building without consuming much energy. In this study, we used the OTTV (*Overall Thermal Transfer Value*) and the ECOTECT software version 4 Beta. The result shows passive environmental solution reduced the building heat load significantly about 30% to the Indonesian National Standard (SNI). The numerical prediction of energy demand inside the building has many advantages, such as time saving and easily applied in the design stage.

**Keywords:** Building, Energy, Landscape, OTTV, Tropical.

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## 1. INTRODUCTION

As the result of rapid economic growth in Indonesia, energy consumption increased dramatically. The energy consumption increased by 7% annually from 2000–2013. Energy conservation and saving are the national policy to reduce energy consumption, and greenhouse gas emissions that related to global warming and climate changes.<sup>1</sup> The industrial sector and the office buildings consumed huge amount of energy in Indonesia. Many sophisticated tools have been developed to achieve energy efficiency in the both sectors. The building sector is a great contributor to energy consumption in Indonesia, account for 30% of national energy consumptions due to inappropriate building designs and materials, and the greenhouse gas emission consumes approximately 30% of total energy consumption.<sup>2</sup>

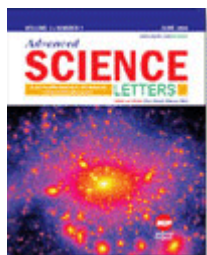
The standard of energy conservation quantify the energy performance of building envelope using OTTV (*Overall Thermal Transfer Value*) to account the solar heat gain of the building and its surrounding nature.<sup>3–6</sup> To reduce the total energy consumption, the National Energy Standards of Indonesia introduced OTTV value to regulate the energy performance of buildings. However, the use of OTTV alone would not ensure energy efficient and cost effective buildings.<sup>7,8</sup> The energy consumption of building sector in Indonesia are varies. The previous studies showed the estimation of energy consumptions in various buildings. It can be seen in the Figure 1.

A city is not merely a drove of buildings and infrastructure. Structuring green open space will improve urban air quality,

reduce the air temperature, pollutant, and noise. Law No. 26 Year 2007 of Urban Space Planning stated Municipal Government is obligated to provide public green open spaces as much as 30% of the urban area. However, the urban development is frequently neglected this requirement. Semarang city recently only has public green space as much as 7.5% of the territory.<sup>9,10</sup> The impact of evapotranspiration of plants significantly reduces the amount of the heat that caused the urban heat island phenomenon: the temperature difference between cities and rural areas. High urban temperature caused the increase of green open spaces demand.<sup>11–15</sup> Green areas in the urban produce lower temperature compared to massive construction material that are mainly stored and re-radiated solar radiation in urban areas. Building envelopes took an important role in providing comfortable indoor air temperature of building in the tropics that must be taken into account in building designs besides prevailing climate to obtain thermally indoor comfort without using mechanical system that consumes much energy.<sup>16–18</sup>

The regulations of building design issued by the Ministry of Public Works (PU PERMEN). Moreover, Ministry of Energy and Mineral Resources (ESDM PERMEN) also issued regulations on energy efficiency. According to the Ministerial Decree No. 80 Year 2015, energy efficiency strategies can be conducted by passive and active design strategies.<sup>1</sup> Building landscape and vegetation can be counted to passive design approach that focuses on heat gain control in buildings.<sup>19–22</sup> This study aims to find out the energy saving in building because of structuring building landscape and vegetation in the tropical buildings.

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# Biodegradable Polymer Nanoparticles of Anti-Tubercular Drug: Formulation and *In Vitro* Release Studies

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Tuberculosis (TB), has been a serious global health problem, resulting in millions of deaths annually. In India itself, 40% of the population are having Latent TB infection and approximately 10% of infected individuals have higher risk of developing active disease, especially those who are immune compromised like HIV infected and patients on immune suppressants. The Latent TB evolves through different stages to become active disease, hence treating latent infection has better scope in controlling TB. Current TB treatment poses several problems and also leads to emergence of drug resistance strains. The biodegradable nanoparticles are promising drug carriers as it has high stability, less toxic and can release the drug in sustained manner. The objective is to provide a new mode of drug delivery through nanoparticles (NP) incorporated with current anti-tubercular drugs that could solve issues with current drug treatment regimen and make available for treatment of latency and active form of TB in long term. In the present study, single emulsion solvent evaporation method was used to formulate and optimize front line anti-tubercular drug with the polymer Poly(lactic co-glycolic acid) PLGA, which is biocompatible and biodegradable. Characterization studies and determination of drug loading efficiency were studied to know the effect of formulation variables. *In Vitro* drug release study was conducted and reverse phase high pressure liquid chromatography method (RP-HPLC) was developed for the analysis of drug. Hence, optimized PLGA, nanoparticles loaded with anti-tuberculosis drug (ATD) have shown good

encapsulation efficiency and drug release profile resulted slow and sustained release over a period of several days. In order to target therapeutic molecules, the biodegradable Nano particulate carriers has the potential for improving the efficacy of TB treatment.

**Keywords:** Latent Tuberculosis; Nanoparticle; PLGA

**Document Type:** Research Article

**Affiliations:** Department of Biotechnology, Manipal Institute of Technology, Manipal University, Manipal, Karnataka, 576104, **India**

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# Counterproductive Work Behavior: Mitigating Role of Spiritual Leadership

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Spiritual leadership is achieving universal recognition as an effective leadership construct. However, the construct needs robust investigation of the relationship to diverse organizational behaviors in diverse cultural contexts. This study examined how spiritual leadership influences counterproductive work behavior (CWB) within a Korean cultural context. Research results confirmed that spiritual leadership positively impacts employees' sense of work meaning, which in turn can help mitigate CWB to the organization. Additionally, research findings revealed that employees' sense of work meaning mediated the relationship to CWB to the organization. However, the impact of spiritual leadership through employees' sense of meaning or membership on CWB to the individual was not significant. The results of this study increase our understanding of how the effects of spiritual leadership can help alleviate employees' counterproductive work behaviors to the organization.

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**Keywords:** Counterproductive Work Behavior; Spiritual Leadership; Workplace Spirituality

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