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# International Conference on Sustainability in Architectural Design and Urbanism 2017

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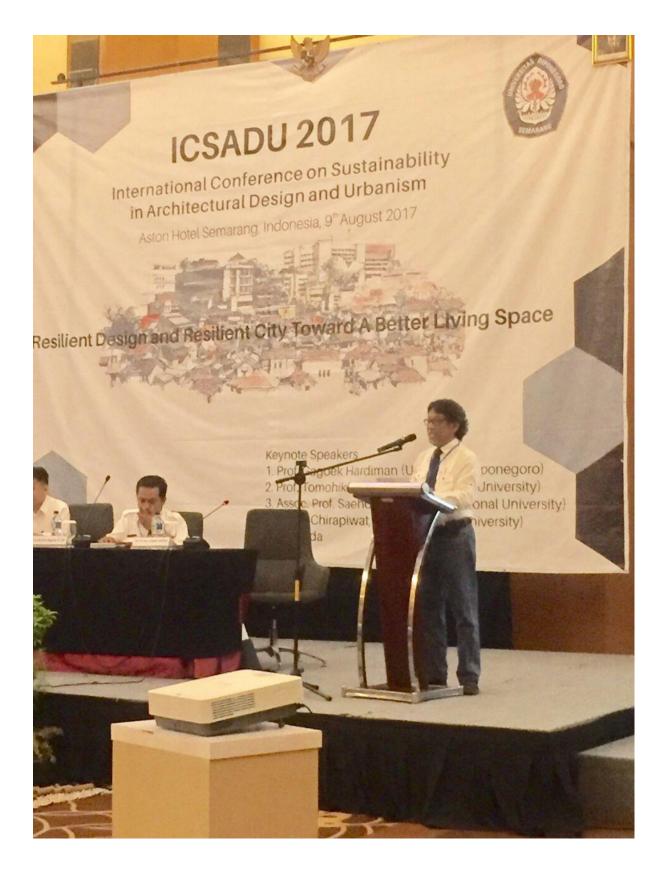
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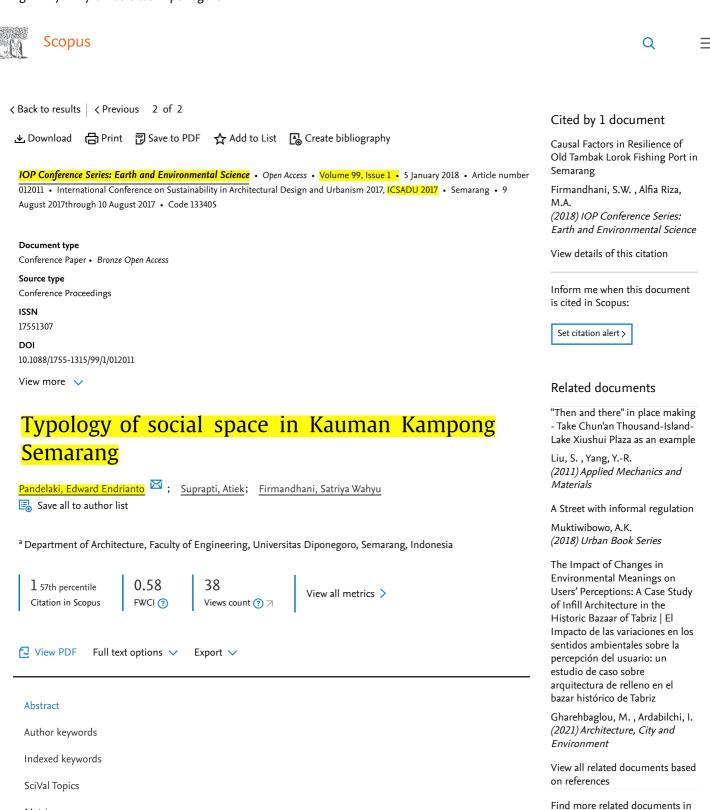
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#### Abstract

Social space is various forms of spaces used by community in conducting social interaction. These kinds of spaces should be given more attention since they serve as catalyst in the implementation of good social cohesion in community. The effort includes giving concern toward their various implemented form. This concern will give benefits in the creation of resilient built environment. Kauman Kampong in Semarang, is an old urban kampong and still exist up until now. During its development, the inhabitant live and conduct their activities in good shape. Therefore this kampong is an appropriate place to learn and explore social spaces which is formed and utilized by the community who conduct their activities in this kampong in Semarang. Qualitative method is used in this research since the nature of this research is explorative. There are various social activities in Kauman Kampong in Semarang, such as religious, trading, and other social

interaction, which have formed various social spaces. These social spaces have their own physical characteristics and with various intensity of activities. Based on collected data in field survey, the typology of social spaces that could be inferred are: permanent, temporary, and dynamic social space . © Published under licence by IOP Publishing Ltd.

#### Author keywords

Kauman Kampong Semarang; Social space; Typology

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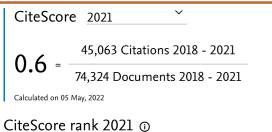


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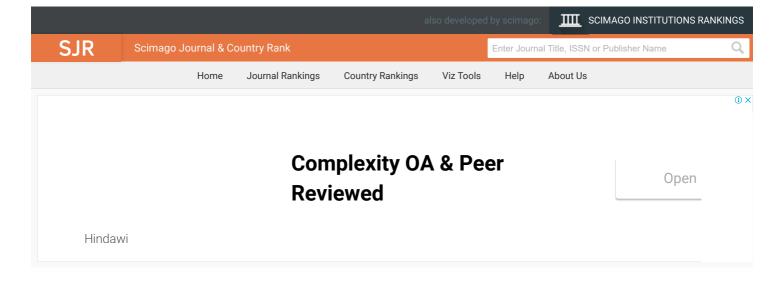
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# The impact of green building approach to office property value

**Yosephine Sitanggang<sup>1\*</sup>, Dalhar Susanto<sup>1</sup>** <sup>1</sup>Universitas Indonesia, Depok, Indonesia

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Abstract. A real estate development often produces negative impacts towards the environment such as the reduction of the ecological capacity in the site and its surroundings, energy exploitation, and excessive pollutant emission. To overcome these issues, the green building concept or approach has been adapted by several real estate businesses in Indonesia especially in the office sector. According to the data provided by GBCI in 2017, there are 17 buildings listed as a certified green building office in various levels. As what has been known, the green building approach results in the increase of price in the planning, construction and the building's maintenance. This paper will discuss about the research results regarding the effect of the green building approach towards the property value of office buildings especially in Jakarta. The research will be executed through the comparison method, which is the process of comparing office building that have already adapted the green building concept with the one that have not, or in other words, the conventional office buildings. Data gathering is done through observation and interviews with developers and building managers. The research results show that by adapting the green building approach for office buildings in Jakarta, the property value regarding the utility, scarcity, effective demands, and transferability aspect can increase.

Keywords: real estate, green building approach, office, property value

#### **1.Introduction**

A real estate development activity that proceeds excessive construction can harm the environment. The building sector are the biggest energy consumer and primary contributor of gas emission in global warming [1]. Human activities that dominantly contribute in terms or the main energy consumption happen in the building sector [2]. To lessen buildings' negative impact towards the environment, a certain approach has been developed to improve environmental awareness, which is also known as the green building concept.

Green building constructions are more costly compared to those conventional buildings, especially its soft-cost expenses due to the addition of design, analysis, technical, efficiency calculation, and green building certification cost [3]. As quoted by [4] according to CalRecycle, green building approach might need a bigger capital expenditure, but by applying its purposed concept, green buildings can save operational costs [4]. Therefore, an important question rose: will the amount of capital expenditure due to the application of green building concept on a certain real estate development project be proportional with the kind of benefits green buildings can provide so that it can increase the value of a property, in this case office buildings.

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# **Proposal of stack Effect technology for predicted future years**

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**Abstract.** Recently, stack effect is a general problem solver in providing vertical ventilation for urban environmental issues. However, study on resilient technology of stack effect for future years as predicted by climate trend should be conducted. Therefore, this research proposes a design of new technology on operable and adaptable vertical ventilation to the environmental change. The research method is conducted by comprehensive simulation of Ecotect Analysis, ANSYS Fluent and Matlab. Urban environment of Surabaya, as the research location, is the representative of tropical region. The results showed that the stack effect height and area could be modified instantly adjusting the environmental condition time by time in the future years. With 1.8 m of stack width, the proposed technology could capture 40 m<sup>3</sup> of vertical air flow which is useful for physiological cooling and its dimension could be modified and sustainable ventilation method is offered to anticipate an unpredicted global warming and environmental change.

Keywords: air flow, building technology, stack effect, sustainable design, urban space

#### 1. Introduction

In general, passive control for thermal environment could be distinguished into four basic strategies (Szokolay, 2008): (1) passive solar heating (with 0.5 and 0.7 efficiency), (2) mass effect (summer and winter + for summer with night ventilation), (3) air movement (physiological cooling) effect, for 1 and 1.5 m/s, and (4) evaporative cooling (direct and indirect). For Indonesia, the tropical country, the suitable method could be mass effect, air movement and evaporative cooling. Considering of high both air temperature and relative humidity in tropical climate and material cost, the ventilation development with accelerating of the air movement is the most possible way. The mass effect is very expensive and the evaporative cooling has risk in raising relative humidity. Nguyen and Reiter (2014) reported that natural ventilation and direct evaporative cooling have the similar effect. Natural ventilation is low-cost, easy to apply and provides good indoor air quality, but it relies strongly on natural wind and the building configuration as well as the building location. Prianto and Depecker (2003) explained that the indoor thermal comfort could not be reached by a higher air speed only. The integration between other environment factors and building design elements was required.

If solar irradiance is more than 700 W/m<sup>2</sup>, the significance of the ambient air speed will drop (Tan and Wong, 2014). Furthermore, under the tropical weather conditions of high solar irradiance and low ambient air speed, cross ventilation performs better than a solar chimney which is recommended under a zero ambient air speed. In addition, Chungloo and Limmeechokchai (2007) reported that at high ambient temperatures and high solar intensity in the daytime, the solar chimney can reduce the indoor temperature by  $1.0-3.5^{\circ}$ C compared to the ambient air of  $32.0-40.0^{\circ}$ C. The velocity magnitude can be increased to 4-25% (Kasaeian *et al.*, 2014). Recently, stack effect is a general problem solver in providing vertical ventilation for urban environmental issues. Resilient technology of stack effect for future years as predicted by climate trend should be conducted. Therefore, this research proposes a design of new technology on sustainable vertical ventilation in future environmental change.

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# Problems of low-rise residential area of Seoul - Focused on Malmi village of Guemcheon-gu, Seoul, Korea -

#### Yeoryung Seo<sup>\*</sup>, Saehoon Kim

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Abstract. In Korea, there are many low-rise dwellings that are under five floors. In Seoul, for instance, about 38.2% of the total residential area is occupied by low-rise dwellings. The area has a wide variety of problems, like Malmi village. Among the many low-rise buildings, Malmi village of Guemchoen-gu, Seoul, is constructed spontaneously. Infrastructure problems such as narrow roads and the lack of parking lots, pose great challenges. When the infrastructure was initially made, the plan was based on the traditional spatial use. The infrastructure problem came out continuously due to the increases in the size of houses and density. These problems are commonly found in many low-rise dwellings in Seoul as well as in the Malmi village. Therefore, it is the time to look into the problems of the low-rise dwellings and seek solutions.

Keywords: low-rise residential area, semi-industrial district housing, multiplex housing

#### **1. Introduction**

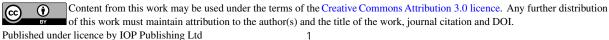
The residential areas of Korea can be divided into low-rise residential neighborhoods and mid/highrise apartment complexes based on the type of housing that is distributed. Low-rise residential areas are concentrated on housing such as detached and multiplex houses. According to the research of the Seoul Institue[1], the low-rise residential area is currently widely distributed among the city, accounting for 38.2% of the total residential area of Seoul. Unlike apartment complexes, the low-rise residential environment is often characterized by the lack of parks and amenities, and the residential environment is undermined. In particular, some problems emerged as a result of the surging number of households, causing inconveniences among residents.

Malmi village of Guemchoen-gu, Seoul, is located in the semi-industrial district and it's near Gvalley (Seoul Digital Industrial Complex). Also, the village is mixed with diverse small size factories and houses. The village also has many problems facing the low-rise residential areas of Seoul.

Therefore, the purpose of this study is to analyze the physical problems of the low-rise residential area and the inconvenience factors experienced by the residents. The information might be used as basic data to solve the problem of residential settlements.

#### 2. Methods

At first, the authors analyzed the contents of the village through the internet, news reports, etc., and analyzed the physical condition of the village through on-the-spot inspection. In addition, the authors looked into the previous surveys from Guemcheon-gu office, population data, and traffic accidents data, among others, to identify the problems facing the village. Afterwards, through cooperation of



# Planning a new type of cultural community space in Goyang City, Korea

#### Jeonghye Kim<sup>1\*</sup>, Saehoon Kim<sup>2</sup>

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**Abstract.** Between March and June 2017, Seoul National University Graduate School of Environment Studies and Goyang City organized a course titled 'Environment Design and Planning'. At the beginning stage of the project, even though the Unified Korean Silicon Vally Project was initiated, our team members in the class decide to reconsider whether a large redevelopment project aimed at attracting tourists is actually a desirable goal for the residents or not. What would be truly needed for space users living in the area? How should we preserve and maintain the existing meaningful space? Meanwhile, we come up with the Gyeongui Railroad, which passes through Goyang and Ilsan. It was a railway line that shared memories of the past, the daily lives of the residents, and the joys and sorrows of them. Among the railways, 'Baek-Ma Station' was the place which was filled with the memories of the people who spent their youth in the city in the 1980s. The station is currently not in use, because this place is abandoned and empty. We wished to make this space more accessible for the residents and also to create a place that would give an opportunity to the resident's social comeback. The space could be activated again with the revival of local cultural activities. And we hope the residents will be able to create new memories of 2017 in this space.

Keywords: Culture, Community, Community exchange, Social comeback, Railroad station

#### 1. Introduction

'Environment Design and Planning' is the class that gather 4 different majored students in Graduate School of Environment Studies and find the problem of subject space, draw up a problem resolution. Here, four different majors - Landscape Architecture, Urban Planning, Environmental Management, and Transportation - have gathered. About 10 students formed a team to work and to study together in order to find new space content for the local region. Since every single member had different academic background, each had its own perspective. It was required to coordinate the transformation of the urban space in Goyang according to the needs from the local government and the residents.

The 'Unified Korea Silicon Valley Project ' was a large-scale urban development project that developed the spaces which were not often used in Goyang City, based on four subjects : high-tech, education, housing, and culture. Here, our team focused on finding and fixing the problems of the current residents of Goyang City, rather than the original large-scale urban development project aimed at the project. This was a different approach than most of the groups that focused on other urban developments involving the city's Silicon Valley project. So we visited the housing area of Goyang, and listened to resident's stories, and focused on the ' absence of emotional community ' with the

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