3rd International Seminar on Livable Space

Promoting Inclusive, Safe, Resilience, and Sustainable Human Settlement in Disruptive Era | 27 August 2020

Background

The first 'IS LivaS' International Seminar on Livable Space was held on 16-17 February 2012 with the theme 'Creating Space for Better Life'. The seminar was made possible through collaboration among the Department of Architecture, FTSP, Universitas Trisakti (as host) with IAI, Universitaet Stuttgart – Germany, IALI, IAP, Aptari, Polytechnic University of Milan – Italy. The second seminar was held on 1 December 2016 with the theme 'Applying Local Knowledge for Livable Space'. The seminar was conducted in collaboration with Ministry of Education and Culture, Ministry of Land Affair and Spatial Planning and Bung Hatta University.

The third seminar will be conducted online using Webinar system on 27 August 2020. For more information about confirmation ID Meeting and password for Webinar please routinely check the "webinar" menu.

Department of Architecture
Faculty of Civil Engineering and Planning
Trisakti University

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Rule of thumb for the calculation of overall transfer thermal value in Bandung

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Abstract

The rule of thumb for heat transfer in building envelopes is made to make it easier to calculate heat transfer using the OTTV formula from SNI. Using this formula, it often makes it difficult for architects to quickly estimate the heat transfer value of a building. The OTTV formula variable issued by SNI is not an architectural design variable. Only one variable that is in accordance with the field of architecture is the window to wall ratio (WWR). The use of the OTTV formula is very dependent on the location of the building and solar radiation. So to overcome this difficulty, the researcher tries to offer a rule of thumb formula for calculating heat transfer . To get the OTTV formula by rule of thumb by means of design variable regression. With the rule of thumb formula for calculating OTTV, it is hoped that it can make it easier for architects to consider designs that are adapted to local conditions. © Published under licence by IOP Publishing Ltd.

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IOP Conf. Series: Earth and Environmental Science **780** (2021) 012003 doi:10.1088/1755-1315/780/1/012003

The arrangement of Hamdan Sukaraja Slum Settlements in Medan Indonesia, through the concept of affordable vertical village

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Abstract. Initially, the city of Medan consisted of villages, often called urban villages, which evolved to form cities. Sukaraja and Hamdan villages are old villages that are part of the Sultanate of Deli and reflect the sociocultural character of the local people of Medan. Now, these villages have grown to the banks of the Deli River. The residents choose to live in riverbank areas that are not well-designed and create unhealthy slums that have social, economic, and cultural problems. These villages will be displaced soon by the discourse of the toll project in the city of Medan on the Deli River. This paper aims to analyze and provide solutions to the problems of the development of slums in the Deli River area. Both environmental, architectural, social, and economic issues of the population. Based on data analysis, the people of Hamdan and Sukaraja villages need livable housing at an affordable cost and can support the community's economy. This study recommends a vertical village design with an Ecological Architecture approach and integrated with sustainable economic systems. The vertical village design also accommodates the economic empowerment of Sukaraja and Hamdan villagers by developing and integrating businesses that have grown previously in this village.

1. Introduction

Settlements are formed through a continuous process in a functional place based on patterns of human activity, both those caused by the influence of physical and non-physical conditions [1]. A residential area is a part of the environment outside a protected area in the form of an urban or rural area, and it functions as a residential area or a place for activities to support life and livelihood [2]. Housing and settlements are basic human needs that cause problems for big cities in developing countries, including Medan City, Indonesia. The availability of affordable land in urban areas is decreasing and becoming more high-costed, while the number of population increases and the number of demands for housing needs increases. The financial condition of urban residents is a factor in the growth of urban housing. The low-income urban people prefer to live in areas near the city center and suburbs that are not well-designed. This problem creates many slum areas that are not healthy and have an impact on causing social, economic, and cultural issues. One of the slums that has developed in the city of Medan is Hamdan and Sukaraja Villages. They develop illegally along the Deli River. It is due to the decreasing amount of affordable land for low-economy urban communities. It Recorded in 2012, Medan City has several slums that spread in seven districts and 18 villages with an area of about 403 hectares [3]. Sukaraja is an ancient settlement during the Deli sultanate. Nowadays, the conversion of residential land

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Smart tourism village, opportunity, and challenge in the disruptive era

L A Rudwiarti, A Pudianti, A W R Emanuel, V R Vitasurya and P Hadi

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IOP Conf. Series: Earth and Environmental Science **780** (2021) 012009 doi:10.1088/1755-1315/780/1/012009

Energy efficiency through façade design model of Nobel house building

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Abstract. One of the triggers to global warming is the increase of CO_2 trace caused by fossil energy consumption. The escalation of fossil energy consumption in urban area comes from industrial sector, housing sector, and commercial sector. Commercial buildings in urban area play a major contribution in CO_2 production level. That is why, electricity efficiency efforts are needed. The high energy consumption in commercial buildings are commonly caused by less precise façade construction, either on its design, material, and orientation. The objective of this research is to evaluate the effect of façade design on energy efficiency level at Nobel House Building. The participation of Nobel House to lower CO_2 is actually an effort to improve GBCI green building certification valuation result, from Gold to Platinum. Energy aspect is a priority in certification valuation to improve their rank. The research method utilized in this research is a descriptive qualitative method with OTTV analysis on 15 Nobel House Building façade models. The research is further narrating the initial 15 models with gold certifications. The result of this research is used to determine 4 façade model with energy efficiency below the base line. (SNI 6389-2011, GBCI,2013) with two main considerations which are easy in construction and maintenance work.

1. Introduction

At this moment, energy consumption level has reached 60% and is predicted to reach 80% on 2040. If the consumed energy comes from fossil energy, the unavoidable impact would be the increase of carbon dioxide/CO_2 production as pollutant that would leads to global warming which will endanger the lives all over the world [1]. Indonesian energy consumption on industrial sector is at 36%, on housing sector is at 31%, on transportation system at 28%, meanwhile the commerce and service sectors are at 5% [2]. Energy consumption level of buildings in urban area contribute up to 43%, industrial at 25%, and transportation at 32%. Whereas, these buildings are categorized into 5% of industrial building, 17% of commercial building (one of them is rented office), and 21% of residential buildings [3].

Urban building performance evaluation must be conducted with reference of: (1) Regulation of Public Works Minister Number 29 Year 2006 on Building Technical Requirements [4], (2) Regulation of Minister of Environmental Issues Number 8 Year 2010 on Eco-Friendly Building Criteria and Certification [5]. (3) Regulation of Ministry of Public Works and People Housing Number 02/PRT/M/2015 on Green Building Construction [6], (4) Regulation of Governor of Jakarta Number 38 Year 2012 on Green Building [7]. For the area of Jakarta, all of these four regulations are mandatories for new building design with certain area and function.

Smart tourism village, opportunity, and challenge in the disruptive era

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Abstract. Tourism villages in the disruptive era inevitably have to adapt to technological advancements and the needs of millennials. The speed and clarity of information is a demand for the development of tourism villages today in addition to the innovation and uniqueness of tourist attractions. Efforts to build a model that is in line with these demands have begun to involve relevant stakeholders, i.e., village tourism managers, local governments, and tourists. Nevertheless, more in-depth studies are needed regarding the local wisdom of rural communities who are key actors in the development of tourism villages. This paper aims to explain the initial research in formulating a development model of smart tourism village based on information and communication technology. The case taken is tourism villages in Sleman district. A sampling of study cases in the form of tourism villages following the categories that have been determined by the Sleman Regency tourism office Initial search results show that there is no integration between village potential, systematic management, and meeting the needs of balanced tourists. This finding is the first step to formulate an ICT-based intelligent tourism village development model that is effective and efficient while still based on local wisdom in the effort to preserve nature and culture as a determining factor for the sustainability of tourism villages.

1. Introduction

The development of tourism village in Indonesia started since *PNPM Program Nasional Pemberdayaan Masyarakat Mandiri Bidang Pariwisata* (National Program in the Empowerment of Community Participation for Tourism Development) established in 2008 [1] although rural development concept based on traditional tourism has begun before. Improving tourism concept in the rural area started from the idea of rural development by Sri Sultan HB IX in the era of 2000, by establishing Brayut tourism village and Tembi tourism village [2]. This rural tourism development concept was in the form of life in activity, learning together with the indigenous society while enjoying the natural circumstance coloured by agricultural, and cattle as the main occupation [3,4].

The rapid development of tourism village as one of the major tourism industry sectors in Indonesia need clear and integrated guidance, especially in the disruptive era which should be more speedy and informative for tourists. The study of tourism village development with the smart village concept, then become the starting point of the integrated tourism village planning.

Disruption, more than just disruption to the establishment. It is an opportunity for innovation [5]. Also, a disruption could be meant to give a new experience for the customer [6].

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L A Rudwiarti, A Setiadi, K F Mustaqim and J M T Longa

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Problems and urban sustainable development in wetlands based on the thermal conditions

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Abstract. Indonesia's landscape surrounded by oceans causes weather anomalies from the Indian and Pacific oceans. In the dry season, drought causes frequent forest and land fires. Forest and land fire is a problem for the government and society. The causes of forest and land fires in 2019, according to BMKG, are El Nino and La Nina (ENSO), Indian Ocean Dipole (IOD), Sea Surface Temperature (SST), and the influence of wind movement (Monsoon). Forest and land fires are closely related to climate and weather conditions. WWF Indonesia said that fires in wetlands, especially peatlands, are alarming. In Sumatra and Kalimantan, peatland fires reached an average of 32.1% and 25.1%. Peat contains fuel (plant residues) below the surface, as a result, fires in peatlands spread below the surface of the soil slowly and are difficult to detect and cause thick smoke. The phenomenon of drought in wetlands especially peatlands has been proven to cause forest and land fires. Based on this condition, it is necessary to conduct research related to the thermal conditions of the peat environment, especially the surface thermal conditions in the swamp. This research is important to know the thermal characteristics of swamps so that urban problems due to thick smoke can be identified. This research is quantitative research based on measurement data collected from the field study. This research was conducted in 2 provinces and 3 cities in Kalimantan: Banjarmasin, Kapuas, and Pulang Pisau. This location was chosen because the city is located in wetlands and is often affected by forest and land fires. The measurement results show high thermal conditions during the day when the intensity of solar radiation is also high around 1400 watts / m2.

1. Introduction

Climate and environmental aspects are one of the things that affect architectural products [1]. The climate, or average weather, is primarily a function of the sun. Climate word is used by scientists to divide the earth region based on the different seasons experienced. Countries with two seasons are grouped in tropical climates, and countries with four seasons are grouped in subtropical climates, and countries outside the group, categorized as cold countries. Scientists agree the air temperature of a region is the boundary between tropical climate and subtropical climate. Regions with the average temperature above 20°C are grouped in the tropical climate, and regions with the average temperature below 20°C are grouped in sub-tropical regions [2]. The climate of Indonesia is a humid tropical climate. This is due to the

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