

PENERAPAN KONSEP BANGUNAN RAMAH LINGKUNGAN MELALUI KONSTRUKSI *GREEN PANEL* SEBAGAI ALTERNATIF PENINGKATAN KENYAMANAN DALAM RUANG

Fitriyah Nurul Hidayati Utami¹⁾, Kaswanto¹⁾, Akhmad Arifin Hadi¹⁾

ABSTRACT

IMPLEMENTATION OF GREEN BUILDING CONCEPT BY GREEN PANEL CONSTRUCTION AS AN ALTERNATIVE IMPROVEMENT OF ROOM AMENITY

Warmer air condition as the impact of global warming had effect to human building scale, i.e. the increasing of room temperature (T) and relative humidity (RH). It causes an uncomfortable situation inside one building without using mechanical controlling temperature equipment, such as air conditioner (AC). Therefore, there is an alternative to improve indoor amenity by using green panel construction which appropriate with green building concept. The terminology of green panel in this research was designated a panel made by an iron material, which has a function as secondary skin (second layer) that protect room inside from direct solar radiation, and also as an attempt for green building, or as a media for liana-plant growing. This research was conducted in Department of Landscape Architecture (DLA) Class Room and its corridor (Wing 13, Level VI). As a comparison location was General Laboratory which is managed by Department of Agronomy and Horticulture (DAH) located in the same wing and level, and DAH's seminar room in the same level, but in another wing. The effect of micro climate (T and RH) in DLA's Class Room were showed from the value of Temperature Humidity Index (THI) around 25.7 to 30.6, with average 28.1 which is categorized as uncomfortable zone. The THI of DLA's Class Room were about 25.7-27.1 (in the morning), 25.8-29.3 (in the afternoon) and 25.8-30.6 (in the evening). Amenity level (THI value) of DLA's Class Room after green panel constructions were changed to 25.4 until 30.2 with average 27.7 which is still in uncomfortable category. However, THI value in the morning was in comfortable category. If green panel coverage's reach 100%, the average THI value will decrease to comfortable category (THI 21.0-27.0). The result of SBE test shows that the SBE value has positive correlation with green panel construction. Four photos with the highest SBE's value were the photo after green panel constructed. This mean the construction of green panel could increase landscape beautification.

Keywords: green panel, micro climate, room amenity, scenic beauty estimation (SBE), temperature humidity index (THI)

ABSTRAK

Kondisi udara yang semakin panas akibat *global warming* dirasakan manusia sampai pada skala bangunan, yaitu dengan bertambah panasnya suhu ruang. Hal tersebut menimbulkan perasaan kurang nyaman ketika berada di dalam ruangan tanpa bantuan alat pendingin ruang mekanis, seperti *air conditioner* (AC). Salah satu alternatif peningkatan kenyamanan dalam ruang (*indoor*) adalah dengan *green panel* yang sangat sesuai dengan konsep bangunan ramah lingkungan. Istilah *green panel* dalam penelitian ini adalah panel yang terbuat dari material besi, berfungsi sebagai *secondary skin* (lapis dinding kedua) yang melindungi ruangan di dalamnya dari terik matahari langsung, serta sebagai upaya penghijauan bangunan atau menjadi media rambatan bagi tanaman. Penelitian ini berlokasi di ruang Studio Atas - Departemen

Arsitektur Lanskap (ARL) dan selasanya (*Wing 13, Level VI*). Sebagai lokasi pembanding adalah Laboratorium Umum yang dikelola oleh Departemen Agronomi dan Hortikultura (AGH) pada *wing* dan *level* yang sama, serta ruang Seminar AGH dan selasanya yang terletak pada level yang sama, namun *wing* yang berbeda (*Wing 14, Level VI*). Pengaruh iklim mikro pada SA dapat dilihat dari nilai *Temperature Humidity Index* (THI) yang berkisar 25,7-30,6, dengan rata-rata 28,1 yang merupakan kategori tidak nyaman. Nilai THI SA berkisar 25,7-27,1 (pagi hari), 25,8-29,3 (siang hari) dan 25,8-30,6 (pada sore hari). Tingkat kenyamanan SA sesudah pemasangan *green panel* mengalami perubahan mencapai kisaran 25,4-30,2 dengan rata-rata 27,7; termasuk kategori tidak nyaman. Nilai THI pagi hari tergolong kategori nyaman. Penutupan *green panel* 100%, diharapkan nilai rata-rata THI akan menurun hingga mencapai kategori nyaman (THI 21-27). Hasil uji *Scenic Beauty Estimation* (SBE) menunjukkan bahwa sebaran nilai SBE cenderung memberi korelasi yang positif terhadap pemasangan *green panel*. Empat foto dengan nilai SBE tertinggi merupakan foto sesudah pemasangan *green panel*. Hal ini menunjukkan bahwa pemasangan *green panel* dapat meningkatkan kualitas keindahan lanskap.

Kata kunci: *green panel*, iklim mikro, kenyamanan ruang, *scenic beauty estimation* (SBE), *temperature humidity index* (THI)

¹⁾ Departemen Arsitektur Lanskap Fakultas Pertanian-Institut Pertanian Bogor, Jl. Meranti Kampus IPB Darmaga 16680 Bogor
*) Penulis Korespondensi: Tel/Fax: (+62251) 8422415