

Indoor Air Quality Analysis for Renovating Building: A Case Study of Student Studio, Department of Landscape, Chiangmai, Thailand

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Abstract : The rapidly increasing number of population in the limited area creates an effect on the idea of the improvement of the area to suit the environment and the needs of people. Faculty of architecture Chiang Mai University is also expanding in both variety fields of study and quality of education. In 2020, the new department will be introduced in the faculty which is Department of Landscape Architecture. With the limitation of the area in the existing building, the faculty plan to renovate some parts of its school for anticipates the number of students who will join the program in the next two years. As a result, the old wooden workshop area is selected to be renovated as student studio space. With such condition, it is necessary to study the restriction and the distinctive environment of the site prior to the improvement in order to find ways to manage the existing space due to the fact that the primary functions that have been practiced in the site, an old wooden workshop space and the new function, studio space, are too different. 72.9% of the annual times in the room are considered to be out of the thermal comfort condition with high relative humidity. This causes non-comfort condition for occupants which could promote mould growth. This study aims to analyze thermal comfort condition in the Landscape Learning Studio Area for finding the solution to improve indoor air quality and respond to local conditions. The research methodology will be in two parts: 1) field gathering data on the case study 2) analysis and finding the solution of improving indoor air quality. The result of the survey indicated that the room needs to solve non-comfort condition problem. This can be divided into two ways which are raising ventilation and indoor temperature, e.g. improving building design and stack driven ventilation, using fan for enhancing more internal ventilation.

Keywords : relative humidity, renovation, temperature, thermal comfort

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