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Achieving energy efficient buildings via retrofitting of existing buildings: A case study

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1 Achieving energy efficient buildings via retrofitting of existing buildings: A
2 case study

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12 **Abstract:** Retrofitting of existing buildings plays a critical role to achieve sustainable development.
13 There are a number of factors that affect the effectiveness of building energy efficient retrofitting.
14 These factors can be broadly categorised as technology and management. A case study approach was
15 employed in this study to examine effective ways of building energy efficient retrofitting based on
16 one year of monitoring. Several feasible schemes of building energy efficient retrofitting were
17 identified according to the characteristics of the case building. The best scheme was chosen according
18 to results of simulation, comparison and analysis. The focuses of building energy efficient retrofitting
19 were placed on energy conservation and indoor environment quality. In particular, during the
20 operation stage, staff can regulate the terminal unit in accordance with their own demands. Results
21 showed that the building operation can satisfy staff's individual requirements after the retrofit.
22 Similarly, the annual energy consumption can be reduced by 57% compared to the national average of

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