

Field Study for Evaluating Winter Thermal Performance of Auckland School Buildings

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Abstract : Auckland has a temperate climate with comfortable warm, dry summers and mild, wet winters. An Auckland school normally does not need air conditioning for cooling during the summer and only needs heating during the winter. The Auckland school building thermal design should more focus on winter thermal performance and indoor thermal comfort for energy efficiency. This field study of testing indoor and outdoor air temperatures, relative humidity and indoor surface temperatures of three classrooms with different envelopes were carried out in the Avondale College during the winter months in 2013. According to the field study data, this study is to compare and evaluate winter thermal performance and indoor thermal conditions of school buildings with different envelopes.

Keywords : building envelope, building mass effect, building thermal comfort, building thermal performance, school building

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