

Indoor microclimate in a South Africa School: impact of indoor environmental factors

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SUMMARY

Demand for good indoor air quality is increasing as people recognise the risks to their health and productivity from indoor pollutants. There is a tendency to reduce ventilation rates to ensure energy conservation in buildings; in this instance schools. However, evidence reviewed shows that this can be detrimental to health and wellbeing in schools because of the learner density within a small area (1.8 - 2.4m²/person); eventually indicating that carbon dioxide (CO₂) levels can rise to very high levels in classroom occupancy periods. A preliminary study to investigate the impact of indoor environmental parameters has been performed in a secondary school classroom in Pretoria, South Africa. Factors monitored include temperature, relative humidity, lighting, air velocities and CO₂ concentrations. From the results low air velocities are recorded (i.e. 0.1-0.3m/s) impacting on the retention of CO₂ build-up in the classroom. Results presented in this paper are the initial findings of ongoing research.