

Abstract Submitted  
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**Flows and Stratification of an Enclosure Containing Both Localised and Vertically Distributed Sources of Buoyancy**<sup>1</sup> JAMIE PARTRIDGE, PAUL LINDEN, University of Cambridge — We examine the flows and stratification established in a naturally ventilated enclosure containing both a localised and vertically distributed source of buoyancy. The enclosure is ventilated through upper and lower openings which connect the space to an external ambient. Small scale laboratory experiments were carried out with water as the working medium and buoyancy being driven directly by temperature differences. A point source plume gave localised heating while the distributed source was driven by a controllable heater mat located in the side wall of the enclosure. The transient temperatures, as well as steady state temperature profiles, were recorded and are reported here. The temperature profiles inside the enclosure were found to be dependent on the effective opening area  $A^*$ , a combination of the upper and lower openings, and the ratio of buoyancy fluxes from the distributed and localised source  $\Psi = \frac{B_w}{B_p}$ .

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