

The ‘Plate House’ plywood transitional shelter

Joseph M. GATTAS*, Kim BABER^a

*School of Civil Engineering
University of Queensland, Queensland, Australia
j.gattas@uq.edu.au

^a School of Architecture, University of Queensland, Queensland, Australia

Abstract

Folded sandwich structures are a new type of modular structural form that can be rapidly fabricated with non-specialist manufacturing plant and rapidly assembled without tools or lifting equipment. This presentation will describe the outcomes of a three-year project to develop a low-cost transitional shelter application, utilizing the folded sandwich structure technology. The latest version of the ‘Plate House’ transitional shelter design introduces a number of new innovations, including use of lost-cost floor cassettes for tilt-up assembly, external post-tensioned packaging strapping, and reduction to 7mm plywood sheet material thickness. Cumulatively, these result in reduced weight and packaging volume and faster manufacture and assembly times.



Figure 1: 20m² ‘Plate House’ transitional shelter prototype, constructed February 2019.
Top: erected structure. Bottom: packaged kit-of-parts.