Green building materials from spinifex. Gamage, H., De Silva, S., Flutter, N., O'Rourke, T., Memmott, P., Martin, D., Schmidt, S. (*University of Queensland, Australia; h.gamage@uq.edu.au; sujeewa@kln.ac.lk; flutter.n@gmail.com; t.orourke@uq.edu.au; p.memmott@uq.edu.au; darren.martin@uq.edu.au; Susanne.schmidt@uq.edu.au*).

Spinifex grasslands dominate arid and semi arid Australia, covering ~27% of the continent. Traditionally, Aboriginal people used spinifex grass (*Triodia* species) resin and shoots for hafting, cladding, and medicine. We are evaluating material properties of spinifex shoots and resin for use as a sustainable building material by combining indigenous and western scientific knowledge. We focused on widespread species *T. pungens* (resinous) and *T. longiceps* (non-resinous). Leaf cross sections show that *T. longiceps* and *T. pungens* contain 47.5% and 30.4% fibres, respectively. Fibres of *T. longiceps* had greater tensile strength and aspect ratio than *T. pungens*. A resinous leaf epidermis is unique to *Triodia*, and resin cells are in the outer epidermis of leaves from tip to base and also in the leaf sheath. Vigorous resin production occurs at certain times of the year. Thermal and volatile properties were analysed using GS/MS, ATR-FTIR, H and C NMR, TGA, DSC, and head space SPME techniques. Plant-derived resin melts at ~60 °C and we identified 38 volatile compounds. Here we present results from insulating batts and earth blocks with resin and shoots for use as building materials. Futher work is currently underway that examines material properties and sustainability of these products.