New York artist Paul Villinski has transformed a 'toxic tin can' trailer into an ingenious prototype for eco-friendly emergency accommodation.

Interview by Fiona Leonard

Visiting New Orleans the year after Hurricane Katrina swept through inspired me to build the Emergency Response Studio – a work and living space that could operate 'off the grid' in a post-disaster environment.

Trailers that had been supplied as emergency housing were subsequently investigated over claims of toxic levels of formaldehyde and many were recalled. I obtained a similar trailer to modify to show how they could be transformed.

My trailer was gutted down to the studs and aluminium skin. For a while it seemed all I did was cut holes in the thing, including ones for a three-metre-wide spherical skylight and a wall that lowers out to form a deck. Over seven months I rebuilt the trailer using sustainable materials like reclaimed wood and bamboo cabinetry, painted it with non-toxic paints and lined it with insulation made from recycled denim scraps.

The trailer is powered by a photovoltaic solar system. I've had an interest in renewable energy and solar technology since I was 15, and this was the chance to get my hands on it and have a bit of a play. There are eight batteries under the floor, with a 6,000-watt-hour capacity, storing power from nine solar panels and a micro wind turbine. When the solar system was installed it powered all my tools – it was as if the trailer was building itself from the inside out!

This trailer is designed with artists in mind, but could definitely be used by disaster workers or people working in remote locations. For now it's a prototype, but maybe it will inspire others to rethink temporary housing and to explore creative, 'clean tech' solutions.