

World Student Environmental Summit 2012 Special Assignment.

The Meridian First Light house

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In order to create environmentally neutral and sustainable communities in the future, we will need to change and innovate the buildings that we live in. This was the goal of the 'Meridian First Light' design by students from the University of Victoria Faculty of Architecture and Design. As the impact of anthropogenic climate change becomes more pressing, as a society and international community, we will need to develop alternatives to current building practises and designs.

For this reason, the focus of the Meridian First Light project was to design a house that could be produced and maintained in an environmentally sustainable method. The house was designed to “work with a changing climate rather than against it” by minimising energy consumption and maximising solar energy were at the forefront of the design and influenced the beachfront house both inside and out. Due to the various environmental extremes within New Zealand, the house was envisioned to be able to be flexible and suit number of climates. The roof was specially designed with photovoltaic panels and solar water heaters to provide sustainable energy for use in the homes, with the goal of being as carbon neutral as possible. Increasing the domestic use of technologies such as solar panels in the future will be a fundamental steps towards developing a society which is less dependent on the consumption of fossil fuels such as coal and gas.



Additionally, lighting and heating systems in the interior of the house were optimised to be highly energy efficient. These systems aim to reduce the overall carbon footprint of the future owners. Overall, the



house utilizes the kind of environmental technologies which could be incorporated in future building guidelines or requirements. Such technologies include an interactive energy monitoring system to show peak energy use and production, a drying cupboard using solar-heated hot water through a heat exchanger, and recycled sheep's wool as insulation.

The 2011 VUW Meridian First Light house was invited to compete in the US Department of Energy Solar Decathlon. Here the house demonstrated the inventive clean-energy solutions developed by the Victoria University student team. The cost-effective, energy-efficient construction enabled the group to win third place in the very competitive international competition.

