

Engineering Consultancy Services



Introduction

Energy Conscious Design was established in 2003 and now has offices in New Zealand and Australia. With over twenty years of Solar Water Heating experience, Energy Conscious Design is widely recognised as the leading solar water heating design consultancy in New Zealand.

Our experienced Chartered Building Services Engineers have a key emphasis on providing well engineered, reliable and cost effective solutions. We are either engaged directly by the client or sub contracted by other engineering consultancies to provide feasibility reports, solar computational modelling and detailed engineering design for many of the largest and most complex solar water heating systems in the country.

Whether you are an installer requiring a “One Off” or an ongoing design service, an engineering consultancy requiring a partner to provide specialist solar design services or feasibility reports or just general guidance, talk to us about how we can provide a seamless service for you and your clients.

Areas of Expertise

- Solar Water Heating Computational Simulation Modelling, Conceptual and Detailed Design
- Solar Water Heating Feasibility Studies and Reporting
- Solar Water Heating System Review and Problem Solving
- Energy Conservation within Buildings
- HVAC Design
- Plumbing and Drainage Design
- Fire Services Design
- Mechanical and Industrial Ventilation Design
- Project Management



Largest single flat plate collector system in New Zealand (2007), 106m² Installation on the Millennium Copthorne Hotel and Resort, in the Bay Of Islands.

Typical Projects

- Detailed design and project management of solar water heating for Ryman Healthcare rest home New Plymouth
- Solar hot water feasibility studies for seven large scale Wellington City Council multi tenancy buildings
- Solar hot water feasibility studies for three large scale Wellington City Council multi tenancy buildings
- Solar hot water feasibility studies for three Wellington Regional Council buildings
- Solar hot water feasibility study and performance modelling for an Auckland swimming pool, Auckland City Council
- Solar hot water feasibility study for a school gymnasium, New Plymouth
- Review of feasibility reports and proposed designs, providing recommendations and detailed design to optimise system performance, for high rise offices, accommodation, hostels, hotels, commercial, industrial and swimming pools as well as domestic installations.
- Cost effectiveness reporting and conceptual solar water heating designs for 10 multi tenancy buildings, Wellington
- Detailed solar water heating design for multi tenancy buildings and several high rise office buildings in Auckland and Wellington
- Detailed solar water heating design for hotels and school buildings
- Detailed solar water heating design for an animal hospital, Wellington
- Detailed solar water heating design for many domestic systems from a 900m² house, home-stays and bed and breakfast accommodation to a single collector retrofit system.

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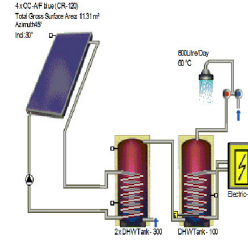


Computational Simulation Modelling

Energy Conscious Design can provide Computational Modelling using the latest computerised simulation methods. These can be used to refine a system design to optimise system performance and compute likely savings and payback periods of the proposed design.

The reporting is often used in feasibility reports and to secure funding from either Government Grant schemes or from an internal budget. The reports provide details on the optimum size of the system, collector area, tank storage, pipe sizing, system control, hot water demands, monthly system efficiency and performance, system losses, solar fraction as well as likely savings and payback periods.

Following simulation modelling we can provide detailed design providing, system design and schematics and technical specifications as required.



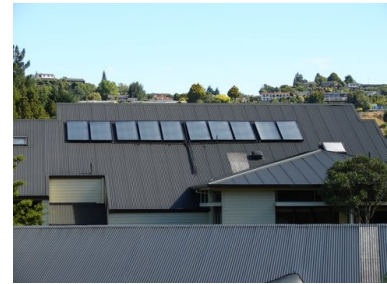
Computational Modelling helps to refine system design, optimise savings and computes likely savings and payback periods

Publications

Ian Sumner, Engineering Director of Energy Conscious Design, is a Chartered Building Services Engineer and has written many articles and reports on solar water heating.

Ian is the author of the solar water heating training articles that are published in each of the Plumbers Journals and have been published since 2006.

Ian Sumner sits on the Chartered Institution of Building Services Engineers, (CIBSE) Australian and New Zealand Regional Committee and represents the region on Standards Committees and for developing the CIBSE Technical Guide for Solar Water Heating.



System serving a Catering School at Waiariki Polytech, Rotorua

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Ryman Healthcare, Resthome, New Plymouth