



WE DO ENERGY

STEAMFIELD DEVELOPMENT SYSTEMS



MB Century provides a total design and/or construction service for geothermal steamfield development.

MB Century is in a unique position of being able to provide a complete service from investigation and development to construction, operation and management of a geothermal resource.

Steamfield Development

MB Century's expertise has been gained through continued involvement in the development of all geothermal fields in New Zealand and numerous overseas fields.

MB Century have developed, and field proven, design rules and best practises which enable us to ensure that pipelines and equipment can be put in place for a minimum installation cost while completely satisfying the design criteria.

These design services further include complete conceptual and detail design of separation plants, pump stations and control systems incorporating the latest technology.

MB Century's experience as an operator

and constructor provides valuable feedback to ensure constructability and ease of operation.

Experience

Kawerau

- > Two phase fluid supply to TOPP1 binary plant. Including new separation plant, production well connection and reinjection pH control.
- > KA24 power station two phase and reinjection lines.
- > Well connections, separation plants and separation plant upgrades for the pulp mill steam supply.
- > 90MW power station steam vents.

- > Well connection designs for make up production and reinjection lines

Wairakei

- > Te Mihi Power Station Steamfield process and detailed design
- > Design of K, S and T lines, Poihipi B line, Flash plants 12 and 14, including 1050 to 1500mm pipelines.

Ohaaki Steamfield

- > The design and construction of wellheads and two phase piping to increase the steamfield output by more than 40MW was completed in only a few months.
- > More than 600 drawings produced by MB Century's design team, for the original steamfield covering 25km of

pipelines, including reinjection lines and 5 separation plants.

Rotokawa Steamfield

- > Design and construction of production and reinjection lines for the Nga Awa Purua 140MW power station.
- > Design and construction of complete steamfield and reinjection system for the Rotokawa 25MW power station
- > The Rotokawa power station piping was also designed and erected by MB Century.

Ngawha Steamfield

- > Design and construction of complete steamfield and reinjection system for the 9MW power station and 15MW expansion.
- > The 9MW power station piping was also designed and erected by MB Century.

Mokai Steamfield

- > Steamfield design and in-plant piping at Mokai II. Separation plant and in-plant piping Mokai 1A expansion.
- > 30t/h clean steam plant using geothermal steam to supply the Miraka milk factory.
- > Design and construction of make up connections for new production and reinjection wells.

Ngatamariki

- > Separation plant and in-plant piping design for 80MW station.
- > Design connections for new production wells.

Lihir Island, Papua New Guinea

- > Design and construction of complete steamfield and separation plants for 6MW and 30MW power stations. Feasibility study and power plant specification for 6MW plant.

Wayang Windu, Indonesia

- > Steamfield planning for Units 2 and 3 with each unit being +117MW each.

Sarulla and Ulubelu, Indonesia

- > Separator design

Resources

Complementing MB Century's design service is the ability for MB Century to provide a total steamfield construction service using the latest and most cost effective techniques available.

MB Century's design team is equipped to prepare feasibility studies for steamfield development and to undertake design reviews of existing or proposed facilities.

Separation Plant Design

MB Century is able to provide a design service that includes:

- > Cyclone separators designed to BS5500 or ASMEV111. Including FEA modelling and reporting
- > Single cyclone silencers for two phase or separated water discharge, with acoustic treatment designed to comply with stringent community noise criteria.
- > Steam vent silencers.
- > Strainers.
- > Design of specialist geothermal control

valves for wellhead flow control and hot water atmospheric discharge.

- > Packaged valve control systems using hydraulic or pneumatic operation.
- > Reinjection pump installations.

Additional Services

- > Packaged separation plants can be completely designed, constructed and commissioned in MB Century's workshops before transporting to site.
- > Computer based steamfield control and monitoring systems.
- > Purging and commissioning.
- > Steamfield operations and maintenance.
- > Well flow testing equipment.

