



aquatherm
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Chisholm Road Prison, Lara, VIC

Chisholm Road Prison is a 1248-bed male maximum security prison currently under construction in the vicinity of the existing Barwon Prison Precinct. The project commenced in 2019 and will be completed in late 2022.

Construction is being managed by John Holland, overseen by the Community Safety Building Authority, which delivers infrastructure on behalf of the Department of Justice and Community Safety.

Integral Group (formerly Umow Lai Consulting) were engaged to prepare the Mechanical Services Specification, part of which required direct buried pre-insulated Heating Hot Water (HHW) and Chilled Water (CHW) pre-insulated pipework.



Chisholm Road Prison Project (CRPP)
Lara (VIC)

The direct buried site-wide pipework included an approx. 2.5 km DN250 HHW and an approx. 2.5 km DN350 CHW ring main and branch reticulation from Central Utilities Building to 51 individual site buildings.

Requirements

Some of the requirements for the direct buried site-wide CHW and HHW pipework were as follows:

- Chilled Water under following conditions Operating pressure: 400 kPa. Operating temperatures: 7°C (flow) and 14°C (return).
- Heating Hot Water under following conditions: Operating pressure: 400 kPa. Operating temperatures: 65°C (flow) and 45°C (return).
- Select a durable, non-corroding,

easy to install and low-maintenance pipe material.

- The pipe material has to be suitable in combination with reactive soil in the trench.
- The pipe material has to withstand heavy traffic loads. (safe traffic load for aquatherm blue pipe TI is 60 tons; SLW60).
- The pipe material should ideally have a degree of flexibility, to follow the trench lay-out.



aquatherm blue pipe TI CHW and HHW systems installed in the trench

Solution

For the direct buried HHW and CHW pipework Integral Group specified pre-insulated medium pipes made of Polypropylene (PP-R) pipes, including a Polyurethane insulation and a casing pipe made of Polyethylene. An example



aquatherm blue pipe TI for district heating and cooling

of an acceptable pipework system was the Aquatherm blue pipe TI system.

Result

Entire Geelong and Regional were awarded to supply and install the aquatherm blue pipe TI for the direct buried CHW and HHW systems. Some of the advantages, considered by Entire Geelong and Regional in selecting the Aquatherm blue pipe TI over conventional metal pipework, were:

- Experienced in installing aquatherm blue pipe TI on previous correctional centre projects.
- Already employed qualified PP-R fusion/butt welding installers.
- No in ground thrust blocks or expansion facilities required.

Even under challenging COVID-19 pandemic restrictions, Aquatherm was able to supply, within 5 months, the approximately 16km Aquatherm blue pipe TI SDR11/SDR17.6 pipes (in selected lengths L= 11.6 mtr. and L= 5.8 mtr. through sizes Ø32-Ø355mm) and fittings in 32 forty foot sea freight containers directly, from source of manufacturing in Germany, onto site.

Client: Community Safety Building Authority

Managing Contractor: John Holland

Mechanical Contractor: Entire Geelong and Regional

