



Civil Engineering

Earthworks, pipes and roading don't make great work stories but good civil engineering as a component of any land development or subdivision sets quality projects apart from the rest.

The civil engineering at Bonisch is not just about a standard product installed in a standard manner, it is about designing and implementing solutions to unique problems where the ultimate result compliments both the project and the surrounding environment.

Design, Approvals and Project Management

We take care of the entire civil engineering design and approval process, including all consultation with territorial authorities and the management of any additional resource that maybe required. We utilise state of the art software that produces design work that can be easily distributed between project partners, including contractors that require digital files for GPS machine controlled equipment.

Once approvals are achieved we then project manage the implementation including all site and contract management. *Please refer to our "Land Development" and "Project Management" inserts for more information.*

Earthworks

From the alluvial gravels of the lake areas to the challenging river sediments, the soils present are the foundation of all projects. Good geotechnical assessment both at the beginning and throughout a project allows appropriate designs to be progressed with accurately quantified costs. Turning the first sod of a project can either be a cause for celebration or a nasty surprise.

The volume of earthworks also has a significant bearing on project cost, particular if material needs to be carted off site. Our designs endeavour to be earthwork neutral, where material is kept on site and landscaped into the project.

Roading

Good road design in both layout and vertical alignment is as important as the structural integrity of the road. Where possible our road designs compliment the natural land form, take account of stormwater management, as well as provide logical access to the land in which the road services.

Road formation design is also important as it is easy to take the "if in doubt – double it" approach but each additional construction layer adds cost. Experience, along with good testing procedures ensure our road formation designs are cost effective and compliant with the relevant standards.



Foul Sewer

No one likes to talk about the finer points of what happens when you flush but it has to go somewhere.

We can assist with capacity assessments, gravity system design, pressure systems and primary pump stations. We can also help with standalone treatment options where all foul sewerage is processed and disposed of on the development site.

The Kepler farm subdivision (see website) was developed on the border of Lake Manapouri where any possibility of sewer effluent runoff into the lake environment was deemed totally unacceptable. To mitigate this possibility we promoted and installed a pressure sewer system from the development to the existing township reticulation – some 3.6kms away. Whilst this did add the cost of a domestic pump to the house construction budget, it was still cost comparable to a septic tank treatment option. A good outcome for all.

Stormwater

A glance through the Gallery or Project sections of our website will confirm that the majority of our projects promote innovative and sustainable stormwater management.

Starting with a comprehensive catchment analysis we can model how a project fits in with the bigger stormwater picture and how the proposed change in land use will impact on this catchment. This information is then analysed, along with cost/benefit, to determine a preferred option.

Our current thinking is to manage stormwater by creating detention areas which remove peak flows, manage sediment runoff and effectively mitigate any downstream affects. Often they form a major feature of the development to create an environmental and community amenity. Where site constraints are such that detention areas are not feasible then other options can be explored like piped systems or rain gardens/soak-pits contained within road reserves.



Water

The majority of water reticulation designs relate to the impact of what an extension or new consumption demand will create on an existing reticulation. Many of our subdivisions such as Inverurie and Ascot Heights all had significant extensions from existing reticulation; in fact the Eyrewell subdivision in North Canterbury required the installation of over 4.0kms of new reticulation to the development site, including a 200m stretch through Eyre riverbed.



Power/Telecom

Bonisch don't design power and telecommunication reticulations but as they do form part of the majority of land development projects we master plan for them within our designs to ensure an integrated services approach across the entire site. We also project manage reticulations on behalf of our clients as often the principal is responsible for all civil installation works.

Landscaping

With so much of our best design work ending up buried, landscaping through earthworks, stormwater management, street furniture and appropriate plantings ultimately becomes the signature of a project. We work closely with landscape architects and designers to ensure the nuts and bolts are covered but the project finish is well considered.

For other related services we provide, please refer to our "Land Development" and "Subdivision" inserts or refer to our website.