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Landfill cell construction nears completion

It's taken more than 18 months, a team of up to 12 staff working at any time and a 100 tonne crane to build the latest 'cell' in the Kate Valley Landfill.

Transwaste Canterbury Ltd (Transwaste) owns the Landfill and Chairman Mr. Gill Cox says ensuring there's sufficient space available in empty cells to hold 12-18 months worth of waste is a key component of operating a safe, efficient Landfill.

'Transwaste ensures there's always space available to receive and bury waste in the Kate Valley Landfill, no matter what type of waste or the volume being delivered', says Mr. Cox. 'We have to prepare for all situations, such as after the earthquakes when large volumes of waste had to be disposed quickly and safely.'

The Kate Valley Landfill was consented in March 2004 and opened to receive the first delivery of waste fifteen years ago in June 2005. The development of the Landfill, along with the general location and phasing of the cells, was planned from the day the facility was consented. The construction of this new cell is part of that 'whole of life' plan. Further new cells will be developed during the life of the Landfill, as additional space for waste disposal is required.

The groundwork for the cells, including excavating soil and rocks, can be significant though Transwaste aims to achieve the maximum holding capacity for waste with the minimal amount of earthworks, says Mr. Cox.

'We make the best use possible of all the materials stripped out to prepare the cell for receiving waste', says Mr. Cox. 'Topsoil is stockpiled to use on the final Landfill surfaces which are grassed. Hard rock is stored on site to line drains and for other structures. Other excavated soils are generally used to construct what are referred to as 'engineered fills' that form the foundations of all cell development. Balancing the volumes of excavated soil to match the requirements of the engineered fills around the Landfill is important to reduce costs and increase efficiencies.'

Once the foundation work is completed the crane, which reaches an astonishing 82 metres, is used to lay the liners, including a 1mm High-Density Polyethylene (HDPE) liner, a geo-synthetic clay liner and a second HDPE liner. Then a 500mm permeable gravel layer is laid to enable drainage of leachate (liquid from decomposing waste), and to protect the liner from damage caused by sharp objects in the waste.

Once the cell is filled, depending upon its size and location, it could be temporarily covered (so more waste can be added to it later) or be capped and grassed. Once this new cell starts receiving waste, work usually begins preparing the next cell.

'We develop the Landfill only as it's needed to ensure we're not spending time and money creating storage space before it's required', says Mr. Cox. 'We aim to have sufficient available space to receive 12-18 months of waste at any time and that approach has worked perfectly for the past 15 years even with the extra demands of the earthquakes and the Covid-19 crisis.'