

# MANCO MATTERS

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## CIVIC CONTRACTORS SET A NEW BENCHMARK IN WATER USE SUSTAINABILITY

Nationwide environmental resources company, Civic Contractors have recently embraced Manco Water's new technology of providing efficient water recycling at an affordable cost.

As both environmental standards and water discharge costs ramp up, so have Civic Contractors environmental sustainability policies. The principles of waste water recycling makes sound business sense, as local authorities and central government address the complex issues surrounding deteriorating water quality.

Located at their Auckland Otahuhu facility, Civic have installed a Manco Water closed loop, wash water recycling system, with its above ground portable truck wash pad. A key aspect was utilising the limited space efficiently. The Manco above ground system, being fully relocatable, eliminates civil works and significant consent issues have proven to be a genuine solution.

In operation, the float controlled sump pump feeds a series of primary particle separators, followed by the utilisation of ultra violet and bromine treatment, combined with further progressive filtration and fine particle separation.

Rain water is also stored and used to "top up" natural evaporation and water reduction during the vehicle cleaning process. A triple tank, receiving and storage system, ensures this closed loop plant has adequate capacity for a total wash of their refuse/recycling fleet dealing with all the leachate issues.



## ENVIRONMENTAL CONSCIOUS CAL ISUZU TAKE WATER DISCHARGES VERY SERIOUSLY

New Zealand's largest Isuzu dealership has taken its water use and discharge obligations very seriously.

When Cal Isuzu took over the Auckland based Isuzu dealer TCL in late 2012, they created a retail trucking operation covering the whole of the upper North Island.

Managing Director of Cal Isuzu Ashok Parbhu is proud to say that when his brother created CAL back in 1987, his vision was to provide more of what the trucking industry wanted.

**More service, more honesty, more experience and above all more time on the road for his service clientele's fleets.**

As part of this philosophy CAL ISUZU have established a smart new satellite service centre at Highbrook amongst the intense commercial vehicle activity of South Auckland.

Given CAL ISUZU's desired level of service, by working on component clean vehicles, Manco Water was engaged to install the first above ground dealer vehicle cleaning pad with a complex water recycling and filtration facility.

The Manco technology should not be confused with the conventional "truck wash" where road film is the key focus. In this application a high degree of grease, oil and other hydrocarbons are removed during the filtration process, allowing the recycled water to be consistently reused.

**CAL ISUZU**

## NEVER COMPROMISE COMPOST!

Manco Environmental's new range of Trailer Compost Shredders looks a winner for Australian and New Zealand Transfer Station operators.

The Manco ZAGO Ecogreen Composter offers a legal road speed capability of 90kph, a 20m<sup>3</sup> receiving hopper, a production rate of 50 tonnes an hour, 5 metre load out conveyor and optional self loading crane. The composter sets a new standard for biological activities for microorganisms that cannot be found with high HP and high RPM drum shredders.

It also has serious productivity processing other products such as used wooden pallets, and comes complete with a roller magnet.



A detailed NZ operation will feature in our next issue.



## IT'S NOT ALL HORSES

Over the last 156 years the Auckland Racing Club (ARC) has been at the forefront of thoroughbred horse racing in New Zealand due to its truly unique blend of the finest entertainment, corporate hospitality, food and fashion. However, behind these glamorous scenes, the club operates a strong culture of waste minimisation and sustainability, installing initiatives to do things smarter, more cost effective while eliminating as many negative environmental impacts as possible.

Earlier in the year, the ARC installed one of the world's newest technologies in the food waste industry, the Manco-BioHitech Eco-Safe 4. Utilising aerobic digestion and cloud based monitoring systems, the racing club now diverts up to 137 tonnes of food waste from landfills annually.

Executive General Manager of Hospitality and Events, Craig Fenwick states; "by installing the digester, we saved money by reducing the waste going into the commercial compactor which has resulted in the compactor being collected less, reducing both our costs and our overall carbon foot print. Additionally, the digester has eliminated any offensive bin odours and eliminating the chance of pests, creating a high hygienic standard and better working environment for the kitchen staff."

The digester's cloud based technology has an interactive dashboard that provides the weight status of the food waste and the corresponding equivalent value of the reduced carbon foot print. Using an Ipad or smart phone Manco's product support engineers are able to remotely set water flows and temperatures as well as a full fault finding capability.

"Prior to installing the digester, we could only estimate the volumes of food waste that was being produced. The Eco-Safe 4 has enabled the facility to see what days are producing the largest volumes of waste allowing the ARC to make possible changes to menu's to ensure that waste is truly minimised." says Craig.





## ANOTHER MAJOR CONTRACT FOR 100% KIWI CONTRACTOR

Enterprising and 100% NZ Owned, Smart Environmental have commenced a fifteen year new kerbside refuse and recycling contract with Rotorua Lakes Council.

The contract is a major upgrade with the introduction of wheelie bins and kerbside recycling using an extensive and exclusive range of Manco model options. This includes the Low Entry Vehicles (LEV) in both kerbside glass colour sort and refuse configuration and Tri-Combi that introduces kerbside glass colour sort with a split compaction body for recyclables and refuse. Complementing the fleet are automated Side-Loaders with RFID (Radio Frequency identification) and hybrid LEV Rear Packers. This is a real first for New Zealand. Offering high environmental efficiencies, and health & safety, the first hybrid Low Entry Vehicle rear packer offers dual control, and natural operator left side exit and entry.

With the contract encompassing operation of the districts transfer stations in rural areas, and all park's and reserve's litter collection services throughout the entire district, Smarts experience and attributes, although well within their capabilities, are well tested as the contract settles into the new methodologies.

Sustainable Living Portfolio Lead Councillor Janet Wepa says now is a good time to be making changes as Rotorua's aging rubbish truck fleet needed replacing.

"We want to reduce costs, improve services, increase recycling, lessen the amount of rubbish going to landfill and better protect the environment.

The residents of Rotorua have been asking for kerbside recycling for a long time. Recycling centres and transfer stations will also still be available, so we're going to be providing more services and more options for people."

"Reducing health and safety risks, which were high under the previous manual collection system, was also a significant driver."



*"We want to reduce costs, improve services, increase recycling, lessen the amount of rubbish going to landfill and better protect the environment."*

LEAD COUNCILLOR, JANET WEPA

*We look forward to growing our relationship, with further innovation and creating new jobs in the Rotorua community.*

SMART ENVIRONMENTAL MANAGING DIRECTOR GRAHAME CHRISTIAN



"As a council, we need to balance the need for a high standard of service with the cost of providing it. Paper bags are quite expensive as very few councils use them now, and the wheelie bins have a long lifespan." she says.

Smart Environmental Managing Director Grahame Christian says the company is pleased to be working with Rotorua Lakes Council and is excited to bring these new services to Rotorua residents.

"We look forward to growing our relationship, with further innovation and creating new jobs in the Rotorua community."

"This is to my knowledge, one of the largest and longest term contracts in New Zealand. Integrating multiple related services into one contract will provide certainty and bring long-term savings to the ratepayers.

In addition, the new services will also see a reduction of waste going to landfill which will continue reduce further over time." says Mr Christian.





## XTREME EFFORTS BRING XTREME ENVIRONMENTAL BENEFITS

Xtreme Zero Waste is a community enterprise established in 2000 to manage Raglan's solid waste within the principles of zero waste to landfill. Xtreme Zero Waste operates Raglan's Resource Recovery Centre, transfer station, kerbside refuse & recycling collections, business and event zero waste services, miniskip hire, street litter & bin servicing, rural recycling drop off facilities, enviropod servicing and a range of other local services. To support these services Xtreme is contracted to provide zero waste education in Waikato and Waipa Schools. This includes a behaviour change programme, mentoring and consultancy and research and development.

Xtreme is achieving 74% diversion of solid waste (by volume) from the landfill. With a zero waste philosophy and a strong local social development ethic, Xtreme is continuously looking for community recycling solutions to reduce and minimise the remaining 26% volume that is still going to the landfill, all whilst providing employment opportunities and resources for locals.

With the high recyclable diversion rate from households, Xtreme suspected that food waste would be the bulk of the remaining 26% going to landfill, the smells of the hook bins in summer was evidence of this. These initial trials were conducted with the full support of the Waikato District Council, which also included the initial composting trials.

Research indicated the best equipment set up was an aerated corn starch bag kitchen caddy which is easy to open and close, has a secure lid, and is durable, hygienic and easy to clean.

As part of the trial Xtreme practiced covered, mini, hot composting windrows and ground level, covered worm farms. Both these methods used mulched carbon material from chipped garden waste from their greenwaste processing facility.



*The selection of bins and caddies used in the foodwaste collection trials*

They have continued with the mini hot compost windrows since the end of the trial in 2013 and this has enabled them to hone their compost management skills and perfect the product development. Positive trial results led to agreement with Waikato District Council to implement the food waste collection service for the whole of Raglan's township; around 2000 households.

One of the challenges of the trial collection phase was Xtreme's limited selection of vehicles within the Xtreme fleet. As a result of discussions with Manco, Xtreme has effectively introduced the 1st purpose built foodwaste collection truck in Australasia. The Manco-Hino Hybrid LEV introduces a radical new body constructed out of recyclable Plaztuff polymer sheets, making it a third lighter than steel as well as being corrosion and rust-free without the need for protective coatings.

With a left hand drive, multi compartment sealed interior and bin lift systems, the Manco designed vehicle, as well as its main food waste collection operations, can handle street litter and street bin contracts as well as supporting our other vehicles with kerbside collections.

# ENVIRONZ FRONT LOADER CANCER SOCIETY SUPPORT

Waste collection in South and West Auckland has become lot more colourful with the unveiling of a new EnviroNZ Manco Front Loader, in support of the Cancer Society. Manco is proud to be involved in the supply of EnviroNZ's new sunshine yellow and dark blue front loader, featuring a giant Cancer Society daffodil.

The truck is part of a new sponsorship relationship with Cancer Society Auckland/Northland that will see EnviroNZ provide sponsorship to the Society over the next two years.

The sponsorship will go towards funding research into the causes and treatment of cancer, as well as providing support services for people affected by cancer.

EnviroNZ Managing Director, Gary Saunders, says the 900-strong EnviroNZ team is proud to support a cause that touches the lives of so many.

"Cancer does not discriminate. We all know someone who has been touched by cancer whether it is a family member, friend or colleague.

EnviroNZ is proud to support Cancer Society and the incredibly important work they do in supporting Kiwi's living with cancer.

We hope this will just be the beginning of a long-term partnership with Cancer Society," he says.

Cancer Society Auckland Northland Chief Executive, John Loof, says support from organisations like EnviroNZ is important in helping to support the Society's crucial work.

"We love the bright and beautiful truck and can't wait to see it out on the streets raising awareness for Cancer Society."

"Support from organisations like EnviroNZ helps us to continue to provide free practical support and care to people going through cancer treatment, fund vital cancer research and helps to reduce cancer for future generations."

Manco & EnviroNZ encourages everyone to give generously to street collectors for Daffodil Day each year.



*"We love the bright and beautiful truck and can't wait to see it out on the streets raising awareness for Cancer Society."*

CANCER SOCIETY AUCKLAND NORTHLAND  
CHIEF EXECUTIVE, JOHN LOOF



# MANCO RAIL WINS MAJOR SUPPLY CONTRACTS IN MELBOURNE

The significant Level Crossing Removal Project from Caulfield to Dandenong is a massive undertaking involving an alliance including Lendlease, CPB Contractors, WSP Parsons Brinckerhoff, Aurecon and Metro Trains Melbourne.

Essentially the project involves the removal of nine level crossings over 72 kilometres of rail by creating new elevated structures over the road crossings which will carry the rail line and five new futuristic styled rail stations. The project had to address complex environmental, civil, architectural, cultural and ultimate use train operations.

The public consultation process has been extensive, covering a wide range of issues, from the 22.5 hectares of new open spaces, train noise levels, cycle & walking lanes, new multi-level station car packs, and the key area addressed of subsequent road traffic movement particularly in peak hours.

Starting with the new elevated sections, the Manco Rail team has completed the design of special radio remote controlled 12 tonne capacity straddle cranes that will carry the concrete plinths, and then in turn, ultimately carry the rail. Once the plinths are in place, Manco Rail designed rail trolleys will lift and transport the 110m long rail sections, position them over the plinths and lower them into place at the correct gauge ready for final bolt down.

Following this phase, Manco designed and manufactured Elevated Work Platforms (EWP) that will assist with the erection of the catenary masts and structures that will ultimately carry the contact wire to power the extensive train network.

The unique feature of the Manco EWP design is that the road/rail vehicles, when on track, are controlled by remote radio control, which includes not only the platform operations but also the vehicle's travel direction and speeds.

Extensive safety features are obviously paramount when embracing such technology, which requires strict compliance to the new rail standard AS 7502 and the crane code AS1418:10. Such involves; extensive service, park and automatic failsafe brakes, adjustable boom height control, left and right slew lockout with backup systems (vital when working alongside live track.)

A vigilance control system ensures constant reporting by the operator and all functions (speed, braking, location, horn application, geographical location) are recorded for down loading when necessary.



*Manco EWP Rail Trucks working on the Melbourne contract*



*Straddle CAD design lifting a plinth section on top of the viaduct*



*Rail Trolley consist under rail transfer mode*



# HAURAKI SET A NEW BENCH MARK IN SMART TECHNOLOGY



Manco's first Bigbelly client, the Hauraki District Council, clearly understands the importance of utilising smart technology to gain measurable results, replacing approximately 120 standard 60 Litre bins with 70 Bigbelly Solar powered compactors.

The district covers 1144km<sup>2</sup>, and has a population of approximately 19,550 residents, with the key industries being farming; mining and tourism.

For over a year now they have been operating the Bigbelly Bins and are now in the same league as New York City, Dubai, London, Sydney and Melbourne in terms of public sustainability technologies.

The key driver for the council's decision to roll out Bigbelly Bins was to increase the quality of service provided to the ratepayers by eliminating refuse overflows while minimising the associated collection costs created by the influx of tourists throughout the summer months.

The Bigbelly's fully enclosed design increases the bin capacity up to 10 fold (60 litres to 600 litres) and most importantly, the cloud based asset management software, notifies council staff of the bin's fullness level.

Hauraki have decreased their collections by up to 70%, going from daily collections down to two collections per week, while eliminating their overflow issues and reducing their carbon footprint.

Another benefit to the council is the accessible cloud based software providing valuable data on historic use. In one particular area several bins were replaced by one Bigbelly. The subsequent report showed this particular Bigbelly was taking over 30 days on average to fill, with only 3,400 litres of waste passing through the bin over the previous twelve months.

*Auckland Airport*



# HIGH TECH BINS SOLVE RUBBISH WOES AT PIG OUT POINT



New Plymouths, "Pig-Out Point" have installed Bigbelly bins to combat the ongoing refuse problems created by rats, birds and wind. These issues have plagued the Mt Bryan Domain, colloquially known as Pig-Out Point, for years with rats and scavenging seagulls adding to the problem. By installing the Bigbelly bins the council was also able to reduce the number of bins by 50%.

In 2013 the New Plymouth District Council controversially removed the bins in an attempt to reduce litter but the trial failed and the 60 Litre bins were returned a few months later.

Council parks and outdoor spaces manager Stuart Robertson was convinced that the 60 Litre Bigbelly solar powered compaction bins were the answer, and engaged Manco to lease the bins to council.

"The beauty of this is that we don't own them. There are electronics (in the bins) and it's a harsh environment there, so if anything goes wrong they'll fix it as part of the lease." Previously the old bins were emptied twice a day, and by 3.30pm on a Monday, after the old bins had been emptied for a second time, they were already overflowing,

With Bigbelly installed, average collection is reduced to five times weekly with no overflows.

New Plymouth District councillor Murray Chong advised he had been pushing for something to be done about the rubbish situation for about five years and getting the Bigbelly bins was a great result.

"The council has obviously been aware of it. Stage one was the trial at Kawaroa, which was obviously successful. Stage two are the bins at Pig-Out Point and stage three will be having them at other venues."

Mr Robertson said the new bins were part of a new strategy throughout the district around how the council is dealing with rubbish.

Next the New Plymouth District Council will look at remote sites, where trucks have to travel long distances to pick up a bin that might not need emptying.

*"As we identify savings we are looking at how we deal with things. It will go into the 10 year Long Term Plan, because it's all part of a wider strategy."*

COUNCIL PARKS AND OUTDOOR SPACES  
MANAGER STUART ROBERTSON

New Plymouth



# FREEDOM CAMPING PROBLEMS SOLVED

In light of recent complaints about the problems being caused by freedom campers, more and more local authorities have become interested in new technology to enhance the services being provided.

With the Bigbelly's compaction and communication capabilities, they have proven to be a key solution in a variety of New Zealand's most popular tourism destinations.

These include Dunedin City Council, Queenstown Lakes District Council, Taupo District Council and Tasman District Council to name a few.

An example of the Bigbelly bin's impact with freedom campers is at Warrington Dunedin. This year a marked turnaround was achieved from the previous year's camping season. Previously, some residents and the local runanga were calling for freedom camping to be banned at Warrington Domain amid concerns about human waste and rubbish being dumped in the sand dunes.

Warrington resident Ken McHoull said the council initiatives, which included upgrading toilet facilities and installing Bigbelly high-tech rubbish bins, has meant such problems are now a thing of the past.

Mr McHoull, counted the number of freedom campers at the domain every morning and even on the busiest day this season, when there were 77 vehicles, there were no issues.

"The DCC has done magic at Warrington. It has shown that improving facilities is the way to go, as going down the punitive route of banning freedom camping altogether does not work.

The naysayers who last year were calling for camping to be banned have been pretty well shut up now because they have got nothing to moan about".

Waikouaiti Coast Community Board chairman Alasdair Morrison agreed the situation was much improved over last year, "There had been no complaints to the community board and the situation was "light years ahead" of the same time last year."



# TRIAL AND ROLL-OUT OF BIGBELLY SOLAR COMPACTING BINS

THE BIGBELLY BIN OFFER THE FOLLOWING BENEFITS:

- Compacting capability – greater bin capacity up to 600L (10 times a standard 60L street bin).
- Solar powered – the bin is powered (for compaction and telematics) from solar power.
- Telematics – the bins send a daily summary of bin level and an alert if bins become full.
- The bin is fully enclosed eliminating overflowing waste, odour, and pest issues.
- Reduced bin servicing – due to greater capacity and notifications of when bins are required to be serviced, the number of site visits drop.

As a result of installing the Bigbelly bins, the number of visits required to service Pokeno bins has reduced significantly, with a bin service visit now only required every 3 or 4 days. The over-flowing bin issue has also been resolved. We have since ordered an additional 20 Bigbelly bins which we will deploy into our Auckland Southern Streetscapes contract.



"In our Waikato contract we service a number of street bins including the township of Pokeno - a fast growing town with a lively farmers market held every Sunday. In this contract we were making up to 14 trips per week to service the bins (and multiple visits in a day) with a common issue of overflowing bins from the farmers market. At our initiative and expense and with the help of Manco Environmental (one of our key suppliers) we installed 3 Bigbelly bins."

Article provided by Civic Contractors, Managing Director Bjorn Revfeim.



## FOOD DIGESTER HITS NEW HEIGHTS!

Queenstown's award winning Stratosfare Restaurant at the top of the Gondola has set many records with its iconic New Zealand cuisine and the fact it sits atop of the steepest lift in the Southern Hemisphere on Bob's Peak, some half a mile from the Gondola base.

The panoramic views from the restaurant are breath taking and compliment the quality dining ambiance.

However on an early day in December it had a new visitor who elected to take the journey to the top via a Squirrel B3 Helicopter. The visitor was none other than a 1000kg new Manco Bio Hitech Food Digester!

Skyline Enterprises, a major nationwide tourist operator provides an extensive array of quality accommodation and attractions that extend from helicopter and fixed wing operations, to apartments and lodges.

From their Queenstown casino to luge activities, the group maintains a strong ethic on environmental awareness and sustainability with all its activities operating in harmony with the environment.

Practicing, "what we preach", the group's programs include staff initiatives, such as paper and print usage reduction through to significant native tree planting.

*"We've been very pleased with the results to date, results that have translated to clear cost savings, with the potential for plenty more to come."*

SKYLINE FOOD & BEVERAGE MANAGER, PIERRE POYET

With the Queenstown operation feeding over a quarter of a million people per year, there is unfortunately the unavoidable generation of food waste. Therefore the installation of a state of the art food digester was high on their agenda, especially with their food waste to landfill minimisation policy.

Manco engineers working with helicopter and onsite engineering staff, completed the unique airlift, with the unit installed at its kitchen location with a few hours from lift-off! With the food digester providing real time data, it has become apparent that this new technology move ticks both the environmental and commercial cost targets.





## ART TAKES A NEW FORM!

Shoalhaven City Council, 200 kilometres from downtown Sydney is 4,567km<sup>3</sup> of iconic settlements along the beautiful renowned white sand NSW South Eastern coast. An area rich in colonial history with many of its historical structures still in existence today, Shoalhaven was named back in 1797 when George Bass, sailing down the coast in a whale boat with six seamen, discovered the river inlet.

In early days the Shoalhaven district was known for producing the timber sleepers for the states growing railway network and the area also experienced a boom with wool, wheat, fresh vegetables and fruit that was shipped from Jervis Bay to the lucrative markets of Sydney. Today, agriculture of all types, particularly fresh fruit and vegetables remains strong along with the significant tourist industry. This is due to the region being greatly enhanced by the lovely and frequently located coastal villages.



The city council with a strong environmental ethic, elected to strategically place Manco 6m<sup>3</sup> Alley Cat rear loaders along this coastal route. Public awareness and participation to this intention was elevated by inviting budding young artists to submit art impressions of what they would like their desired refuse collection vehicle to look like.

The response has been overwhelming, resulting in all four of the new Manco vehicles creating a very unique and ground breaking concept!



# IT ISN'T BANANAS WHEN YOU STUDY GREEN GORILLA



Green Gorilla is the largest non-landfill owning, full spectrum, waste services provider in Auckland. Its focus is to maximise recycling and diversion from the landfill and provide maximum assistance to its customers in their sustainability initiatives.

The company is 100% New Zealand owned and its senior management team has over 170 years' experience in the waste services sector.



A range of collection and processing systems for all non-hazardous waste streams are provided 24/7 via Green Gorilla's modern fleet of over 35 heavy vehicles and 7 fully electric support vehicles.

Green Gorilla also operates a modern Waste Processing Facility in Onehunga, Auckland, that receives waste from the company's vehicles and third party haulers.

The 2.7 ha facility is the largest of its type in New Zealand and allows the company to maximise recycling and reprocessing of waste.

Processing systems include a large scale automated and manual sort line to recover timber, metals, card, plastics, plasterboard and other valuable commodities.

Timber is chipped on site for biofuel and plasterboard is recycled into gypsum and paper. Each month the Green Gorilla facility diverts some 2.5 million kilograms of waste from Auckland's landfills.



# MANCO RAIL – WIRING INTO THE FUTURE.

Manco Rail's significant investment, embracing the latest technology in highly productive new overhead wire install or wire replacement, is well underway.

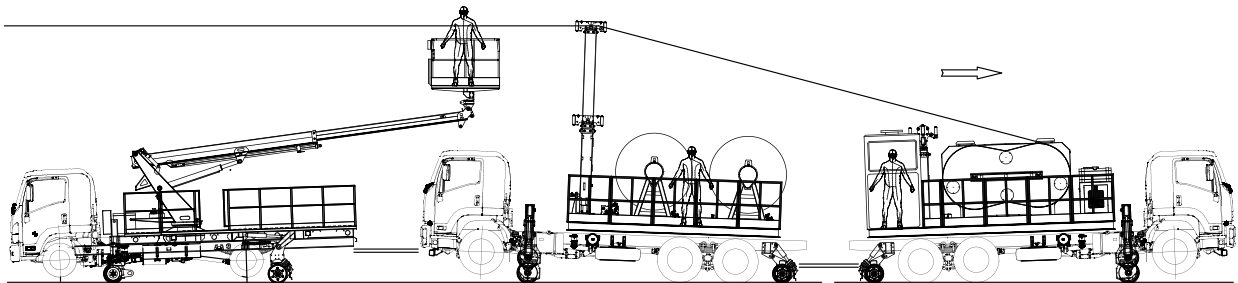
In conjunction with the European manufacturer OMAC, Manco Rail's engineering team recently finalised design and manufacture has started on a state of the art rail wiring train consist that offers numerous features never before used globally. The issues faced by the design team were numerous, with complex requirements to tension two independent wires gradually and simultaneously via a consistent traction drive with the ability to hold the wire tension at all times and during stationary situations.

Based on a consist of three locked together traction drive vehicles, producing over 700HP, the 56 tonne wiring train will simultaneously install, under the desired tension, 40 kNm both the suspension and contact wires.

With the entire unit fully automated, the centrally located operator, using touch screen controls will control install speeds of the two wires at up to 6kph track speed. During the entire rollout, the sophisticated computers control winch tension within 3% by monitoring track speed and adjusting wire drum feed out rates.

The lead vehicle will carry the tensioning unit and power pack, the second vehicle the hydraulically driven and braked wire drums and the third vehicle the proven Manco Elevated Work Platform used for clipping the wire onto the catenary.

All vehicles are rigid locked with heavy duty draw bars that not only spread the tractive effort but carry hydraulic, electronic, braking and lighting circuits. Initially the consist will be engaged in work in Victoria with further projects on the drawing board for NSW, Canberra and possibly the proposed Auckland rail loop.





## DREAMS CAN BECOME REALITY - MANCO INTRODUCES A FULL ELECTRIC DRIVE REAR COMPACTOR

The future of automotive technology is truly electrifying with the global forecasts for the ever increasing numbers of electric vehicles (EV) that will be on the road in the next few years. Manco is all charged up with this evolution, launching its radically new 100% Electric Tom Cat 8, EV10, 8m<sup>3</sup> Rear Loading Compactor- proving sustainability and innovation.

Following significant research in the advancement of battery technology, regeneration control and vehicle design, Manco's 100% electric commercial rear packing refuse vehicle provides a generous payload and excellent route distances under a single charge, giving genuine waste collection vehicle on road performance.

Since the 5th of May 2016, the New Zealand Government has made a pledge to try and double the amount electric vehicles on the road each year. This is approximately 64,000 by 2021. To assist with this, they have launched a contestable fund of up to 6 million dollars per year to encourage and support innovative low emission vehicle projects such as electric rubbish trucks.

Manco Environmental has subsequently secured three orders from key industry players, with the first units being in operation by September 2017.

### THE MANCO TOM CAT 8, EV10 ELECTRIC REAR PACKER SPECIFICATIONS ARE:

- ▶ 100% Electric Commercial Vehicle
- ▶ 120Kw Battery Pack
- ▶ Range of up to 180Km
- ▶ GVM 10,000Kg
- ▶ Tare Weight 6,339Kg
- ▶ Payload 3400Kg
- \* Subject to additional Features
- \* Subject to waste type & loading conditions

*"In order to have clean air in cities, you have to go electric."*

ELON MUSK, CEO OF TESLA AND SPACEX.

# MANCO ENGINEERING GROUP

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