WATERWHEEL HERITAGE PARK
WATERWHEEL HISTORIC TRUST

NEWSLETTER
July 2011

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Funding and Sponsorship

Despite the economic downturn, the Trust has continued to market the Waterwheel to showcase our Collection, secure significant sponsorship, attract new members and make people aware of the Waterwheel Heritage Trust and our vision.

If you can help, we need building and conservation materials, reinforcing mesh, chicken wire, wooden poles and posts, hardwood for assorted repairs, sandpaper, old tongue and groove flooring, cement, bricks, fencing, hand trowel for floating off, assistance pouring a concrete pool for the Waterwheel and a submersible pump.

If you would like to help or know of sponsorship for the Waterwheel please phone John Galbraith, Chairman on 0274 458 839.

Waitangi Celebration Country Fair

To celebrate Waitangi Day, a festival of events, activities, exhibits and stalls was held on Saturday 6th February 2011. Stephanie Johnson tells us what happened on a very hot sunlit day.

"The Waterwheel Historic Trust (the Trust) opened the Heritage Park site and had the Waterwheel turning. We had live demonstrations of sheep shearing – with spinners showing how in the days when the waterwheel would have been an integral part of the community, the fleece was converted to wool which was then knitted into garments. There were even a couple of people knitting!

Originally the Waterwheel was sited at Braemar Road for milling flour and was then used for flax – hence our link to the flax weavers who were demonstrating the art of flax weaving on the day and the types of objects that can be made.

A relatively new animal to New Zealand made your acquaintance as you walked down to the river – we invited some Llamas (and their owners) to come and attend our special day.
Walking back up the hill – there was an opportunity to stop and talk to a local artist about his painting – and watch him as he painted yet another masterpiece showcasing our beautiful bush and countryside.

So, moving a little further on, we had two more furry friends – donkeys who gave rides to children around the area – these much maligned beasts of burden are friendly animals – who will do anything for a carrot or two!

Many of the Waterwheel's artifacts and vehicles were also on display and there was the opportunity to take a rest and listen to music; both relaxing and enjoyable.

Returning to the top of the hill – we found a scarecrow - making stall – great fun to create a friend from cast-offs, stuff him with straw and give him a creative face. We had some great results and young and old had such fun creating different characters. This was also an opportunity to create saucer gardens with competitions for people to bring locally grown produce. We had some great examples of both art forms.

For the more energetic, there was the coconut shy – plenty of raffles and prizes, and a children's sports section where the egg and spoon race was a great success – although I am not sure dropping the egg and then putting it back on the spoon was quite in the spirit of the day.

Having expended your energy – there were our favourite Clydesdale horses giving people rides on the wagon up and down Spencer Avenue and elsewhere in the area, a range of steam engines and vehicles dating from the 1850's through to the 1950's. Plenty of food was available – including cooks preparing samples from the "Plenty" Recipe book and everything else from fritters to burgers and popcorn.

And so homeward, tired, – hot, but happy – a great day out with plenty to do – even a quiz around all of the different exhibits and stalls. So a great thank you to everyone who supported us and attended on the day."

Spinners and Weavers on the Day!

Metal Tech Charitable Trust and Community Max Project

The Waterwheel Historic Trust has been working alongside the Metaltech Charitable Trust and KEA to provide a highly successful Ministry of Social Development Community Max project. Chris Hansen, Waterwheel Trustee did an amazing job supervising 6 local young people in the first project, which came to the end of its 6 month term in February 2011.

A project farewell was held at the Industrial workshop which KEA had kindly sponsored for the project, and representatives from the Waterwheel Trust, Metaltech Charitable Trust and Kawerau District Council along with the 6 young people were all in attendance.

Kawerau District Councillor, Alistair Holmes, spoke highly of the project and congratulated all the various organisations involved in the Community Max Scheme, as well as commending the young people on their contribution during the project. A large number of artefacts, damaged by the devastating fire in 2010, were restored by the workers. The project also contributed towards various landscaping projects at the Park site in Spencer Avenue, as well as developing valuable work skills for all involved.

Since the end of the first Community Max project, members of the Waterwheel Trust and Metaltech Charitable Trust, have been busily working on some very exciting developments regarding the next Community Max project.

Chris Hansen and Community Max workers.

The Waterwheel Trust received a Lion Foundation grant, which funded the purchase of tools and equipment for the next Community Max project, beginning on Monday 27th June 2011.

Chris Hansen is the Project Supervisor again and will implement a number of new projects, including on the job training in chainsaw unit standards, and tool maintenance for the new young people attending the project. The group will also focus on some building and landscaping projects on site at the Park and each will restore a push bike from the collection within the 6 month Scheme.

This project is another excellent example of collaboration with a number of organisations working together for the benefit of the local community.

Museum Collection Open Days

We have now got somewhere we can display some of our collections – in the KEA Industrial Centre, Paora St, Kawerau.

Anyone interested in seeing the collection and what we are planning to restore, can contact Ian Mackenzie; 07 323 7613 or 0226350071. Bus or group visits are welcome, just phone or email Ian at; idmackenzie2@hotmail.com with information of arrangements, dates etc.

The display is open Monday, Wednesday and Friday, 10.30am to Noon, or at other times by arrangement. Donations gratefully accepted.

Anyone who has an interest or knowledge in restoration as a hobby past-time? Please feel free to come and share your knowledge.

The Waterwheel Trust appreciates the on-going support from KEA.

Building Wooden Wheels & Hubs - by Stan Fretwell

"The fact is, today there is very little quality hardwood suitable for building wooden wheels that will last. In the past, the building of wooden wheels for carts, drays, wagons etc., was skill, time and labour intensive. Elm was traditionally used for the wooden hub, and oak for the spokes. The chosen tree was cut by two men using a 7ft cross cut handsaw back and forth until it was felled.

Next, the timber was cut to lengths; the resulting "billets" being split by maul and wedges into rough sizes. The billets were then shaped with an adze (similar to a short handled axe); worked with a **draw knife, spoke shave** and plane into square tenons (cut by handsaw) and round tenons (with a brace cutter if you had one).

Drawknife

Spokeshave

Building Wooden Wheels & Hubs continued....

The fellies/felloes (the shaped wooden blocks that make up the wheel's rim) were then laid out to a pattern and cut by hand with a bowsaw, then finish shaped with a curved shoe plane and hand sanding. (This would have taken about 4 times the labour that I used to make the wheels as described below). Today, these required skills in hand tool use are largely lost.

Recently, I needed to build 4 wooden wheels from scratch for two vehicles for which I had completed the bodies previously. One was a 4 tonne Block Dray, so the wheels needed to be heavy and strong, and the other, a much lighter, 1 tonne Spring Cart.

I am very grateful to the people who came forward to help me on the journey to make new wheels and hubs from trees. Neville Klein engaged his friend Peter Carter who owns a mobile sawmill, to cut down and mill several **Saligna Gum**[1] trees for Tony Eggleton. Peter, Neville and others gave their time and skill to meet our needs.

A trip to Tony's place to watch Peter's Peterson Mill Swing-over-head saw slice through the hardwood so easily was quite something,

and as Peter was cutting mostly 150 x 50mm planks, it was no trouble to cut out 2 lengths for us at approximately 4m x 150 x 105mm. These were then cut to 720m long (or spoke lengths) so it made them easy to lift and load. Also, about 10 billets cut between log knots to 750 x 450mm were split down the middle by Neville's chainsaw so we could manhandle them onto our truck. My son John came to help us with this as these lengths were very heavy and needed 2 men to lift them. At my workshop, I broke down these billets to the required sizes. The 150 x 150mm lengths were fairly readily handled by my 400mm circular benchsaw of 5.5HP and sawn and re sawn to get 32 lengths of heavy spokes. The process was repeated to get 32 smaller spokes, giving a total of 64 spokes. The taper of each was by electric planer (Buzzer) and then spindle moulded to rough shape, finally hand planed, draw knifed and sanded to the required size. Then the small bandsaw shaped square tenons to fit into the Hub and these were hand fitted for a tight fit. At the other end of the spoke, a round tenon was made to fit into 25mm hole in the fellies, which was the last part of the exercise before assembling all the parts to the wheel. (Fellies/felloes are the wooden blocks which make up the wheel's rim. There are half as many felloes as spokes).

The felloes entailed breaking down the large fillets of 450mm square into approximately 200 x 105mm slabs. These were milled by large bandsaw with a 900mm opening as these Billets were very heavy. I had to get help to get them into the machine. It was also heavy going to push the billets through the saw. After the billets had been cut, they were laid out into a curve of fellies and cuts made to the curve inside and outside by a small bandsaw with a new blade; then each felloe was cleaned up and sanded. This gave 7 felloes to each wheel (14 for a pair of wheels).

As there was one Hub to the Spring Cart left, only another one needed to be made, which was a relief as the amount of work to build a hub from the start is quite amazing.

At Tony's place, Neville and I cut out suitable Billets of timber from the Saligna to make 3 hubs in case of trouble.

The finished hub size was 300mm long x 250mm diameter. The billets were cut to 350mm long x 300mm diameter. This was done with maul and wedges down to a rough diameter and marked out to size. The hole through the centre had to be 75mm through, but one end checked out to 110mm x 75mm deep to take the cast iron box as that is what the axle runs in.

The boring out of the end grain proved to be quite a job, but having made a spade drill to do the job, I found that the billet of timber was too hard to hold still (vice wise) which caused overthrow of the first billet of timber; so back to the beginning again.

This time I managed to get

Spade Drill

an auger drill right through the 16mm diameter centre. This enabled the large drill of 50mm to go through from both ends; the rest of the material had to be chiselled out by hand.

So hours of chiselling, tap-tap and final finishing off by long paring chisel until a tight fit was achieved.

Next was to drive the Box into place and fit an end plug to centre into my large lathe and the 3 jaw chuck to grip the large end and slowly turn the outsize diameter 250mm; also turn the two end steps to take the steel rings to hold the whole thing together. Then heat the rings and drive on, and while in the Lathe, mark the centre lines for the spoke mortise to line up to.

The final effort was to layout and cut all the mortise holes square and 60mm deep. This was done by small drill press to carefully drill out all the holes and then back to the chisel again to finish it off.
The last job was to end drill the 3 holes for the long bolts to hold the end plates, as in this case that is how the wheel is held on to the axle. All the spokes were hand fitted and numbered and then the opposite end tenon trimmed and fitted ready to fit the 7 felloes and so complete the wheel.

"Wow" my first wooden Hub and it looked great too.

Building Wooden Wheels & Hubs continued...

The above was repeated for the Spring Cart (the felloes were 700 x 200 x 65mm).

While I did all this with my older equipment, the methods used were vastly more straight-forward than those the early men had. What those men would think and say if they knew where their skills have led, is hard to say or do, but it was through the blacksmiths and their skills being brought together into what we know today.

This is just a brief outline of the work entailed to build 4 wheels and 1 hub. These skills are rarely taught as a Trade now, but they were held with pride by men for thousands of years, around the world, as the only way for transport and travel.

So lest we forget, this is a tribute to them."

For more information on how wheelwrights make wooden wheels today, visit http://www.guardian.co.uk/money/2009/jun/27/coachbuilders-rowland-and-son.

For pictures and descriptions of the wheel makers art of yesteryear visit http://www.hct.ac.uk/Downloads/cp_wheel.html

[1] ***Saligna*** *is a light to dark pink coloured eucalypt. It is heavy, fairly hard, with a course, even texture, reasonably easy to work but difficult to dry. Mainly used for flooring and decking.*

Wheels made by Stan.

Acknowledgements

Once again the Trust gratefully acknowledges the wonderful work done by the many members and volunteers who turn up to help at our Working Bees and events.

Your support is greatly appreciated.
We would also like to take this opportunity to thank our members, whose support helps in securing the future of the Waterwheel Historic Park.

The Trust continues to receive generous offers of items to add to its collection, and also useful building materials, shelving etc., from a number of locals and businesses. We thank you for this.

Waterwheel Historic Trust

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We're on the Web!
See us at:
http://www.waterwheel.org.nz

If you are interested in becoming a member or know of someone who may be interested, please complete the following form, tear off, and send in to the Waterwheel address above.

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APPLICATION FOR MEMBERSHIP Annual Membership is: $25 per family

Name: .....

Address: .....

Tel: ..... Mob: ..... Email: .....

Do you want to receive a Newsletter?	Yes/No
By Email	Yes/No
By Regular Mail	Yes/No

You can also help by: - *Please tick*

Making a cash donation $ .....

Offering your time to help carry out restoration or site development

Donating items

Charitable Status:
The Waterwheel Historic Trust has secured Charitable status and will provide receipts for donations for tax deduction purposes.