



BRIDGING HARD WORK

by Jeremy Smith

AND RAPID LIFT TECHNOLOGY

OTTAWA WITNESSED ANOTHER FEAT OF GROUNDBREAKING TECHNOLOGY OVER THE LONG WEEKEND IN JULY, WHEN R.W. TOMLINSON REPLACED THE QUEENSWAY'S CARLING AVENUE EASTBOUND AND WESTBOUND BRIDGE IN LESS THAN 16 HOURS.

The operation, which with conventional methods takes two to three years to complete, was a result of more than a year of hard work and planning, and was a prime example of rapid lift technology at work. From 6 p.m. on July 30 to 9:45 a.m. the next day, R.W. Tomlinson closed all lanes of the Queensway to replace the bridge's outdated decks with newly constructed ones that will allow for the future expansion of the highway.

Since May 2010, R.W. Tomlinson crews had been working to widen and rehabilitate the existing substructure, as well as construct new bridge decks in our staging area. Faced with extremely restricted access and strict operational constraints, here are some of the challenges we faced:

- We needed to keep the vibration caused by our construction down to a low 15mm/sec due to a nearby 1200mm watermain that feeds a large portion of Ottawa's population. We also needed to install a monitoring system to make sure the level was never exceeded.
- Due to the proximity of both the Queensway and the watermain, we needed to install an extensive shoring system to allow us to widen the existing abutments. This needed to be done in four stages in a very restricted area, while maintaining traffic on the Queensway and Carling Avenue.
- It was imperative that the construction of the staging area to accommodate the construction of the new decks on temporary supports would allow free movement in and out of the staging area for the self-propelled modular transporters.



- Precise surveying was required to ensure clearance for transporting out the old decks and, more importantly, to build the new decks to fit onto the old abutments.

The highlight of this project was the replacement of both bridge decks with the self-propelled modular transporters (SPMTs). By using the SPMTs, we were able to limit the travelling public's exposure to any construction activity to only a few weekends of lane closures and 15 1/2 hours of full closure of the Queensway.

The two existing decks, which weighed up to 499 tonnes, were prepared for removal early Saturday morning while traffic continued to flow in both directions on the Queensway. At 6 p.m., all lanes were closed to allow the remaining excavation to be completed so that both bridge decks could be lifted and transported to the staging area.

Within an hour and a half of closing the highway, the existing westbound deck was on its way to the staging area. Within four hours, both bridges had been removed and the new widened decks, weighing up to 714 tonnes, had been brought in and were undergoing final adjustment.

Immediately after the decks were placed by our structural crews, our grading crews went into action. Within four hours, they had them ready to be paved. To assist in the speed of our paving operation, we used a new type of asphalt called warm mix. This asphalt is mixed at a lower temperature than conventional mixes and reduces the time needed to allow traffic onto the paved surface. The success of this project is entirely a result of the terrific co-operation and dedication of everyone involved.

OPERATIONS UNDERWAY AT BRECHIN QUARRY

After seven long years of dedicated hard work, operations are under way at Brechin Quarry. "The first load is out the gate at the Brechin Quarry," said Mark Nesbitt, the general manager of quarry operations. "We are now officially open." Since 2004, R.W. Tomlinson had been completing the necessary work required to open Brechin, located near Orillia. On Sept. 30, 2009, the quarry was finally licensed to extract aggregate.



Interesting facts about Brechin:

- Started permitting process and environment studies in 2004.
- On June 24, 2010, the Ministry of Environment issued Permit to Take Water #4340-86NRP9 to Tomlinson for water taking at the Brechin Quarry.
- On July 23, 2010, the Ministry of Environment issued Certificate of Approval (industrial sewage works) #7458-842L3X to Tomlinson for the discharge of water from the Brechin Quarry property.
- In addition to the completion of the Campbell's Beach borehole (with monitoring wells), Golder Associates has been working with Tomlinson on the construction of a number of additional boreholes (with monitoring wells) on the Brechin Quarry property itself. These include three monitoring wells that were installed in the Cranberry Lake Provincially Significant Wetland after consultation with the Ministry of Natural Resources. These borehole/monitoring wells are required by the Permit to Take Water. Much of this work was completed during the latter part of 2010 and into 2011.
- Golder Associates has been progressively implementing various components of the monitoring program (as listed on the Permit to Take Water) since issuance of the permit. Monitoring data required by the Permit to Take Water was collected in 2010 and assembled. The first annual report (2010) was submitted to the Ministry of Environment on April 28, 2011.
- The majority of sales from the Brechin Quarry are for jobs 80 to 100 kilometres away, unlike our Ottawa quarries that range from one to 40 kilometres.
- The first load was taken out of the Brechin Quarry on May 16, 2011.
- Bernie Bax is sales associate for the Brechin Quarry. He comes with 25 years of sales experience in the Toronto region and knows the industry, markets and customers very well.
- Blasting and crushing of rock took place in 2010 for the purpose of building on-site roads, installation of box culvert over fisheries area, etc.
- The construction of the scale house is complete. Tomlinson has had crushing equipment on-site since the first quarter of 2011.



RAISING THE BAR AT STITTSVILLE

In May 2010, ground was broken in Stittsville to prepare for the construction of the largest most technically advanced and eco-friendly concrete plant in Ontario. The underground tunnels and aggregate bins were first to be constructed. The aggregate will be stored in eight underground bins with a total heated storage capacity of 1400 tonnes. All aggregate bins will be heated using a hot air heating system, which is self-regulating to ensure a greater consistency in temperature, while reducing the amount of wasted heat. Inventure's hot air heating system boasts an 80 per cent thermal efficiency rate, while reducing energy consumption by as much as 50 per cent. This heating system will allow for efficient production through the winter months, while increasing general production rates year round.

The final major step in the construction and installation of the Stittsville Concrete Plant was the creation of a washout pond system. This system of two man-made ponds is an environmentally friendly means of recycling grey water, to be reused in the production of concrete. As grey water passes through each pond, sediment is removed and the cleaned water is passed to the second pond, and finally recycled in the manufacturing of concrete.

While the underground work was being completed, the construction of the garage and office building began. The 10,000-square-foot steel building will house a garage to be used for the West Ottawa Maintenance Facility; a certified quality control testing lab, for concrete, asphalt and aggregate; the dispatch and operating office for Cumberland Ready Mix and quarry operations, as well as boardrooms for meetings.

As winter of 2010 began, so did the construction of the mixing tower for the concrete plant. Part of this installation included the reversing Inventure mixing drum. This non-destructive drum contains no moving paddles. As a result, material is not broken up as the drum mixes. The reversing Inventure mixing drum is highly efficient and offers mixing times that are up to three times faster than a standard concrete mixing drum. While ensuring its efficiency, the mixing drum also provides a much higher quality of concrete. The Stittsville Concrete Plant will be capable of mixing both wet and dry batches. R.W. Tomlinson is the only company in eastern Ontario to offer the benefits of this plant to its customers.



During this construction, R.W. Tomlinson has carefully followed the ECO certification guidelines as set out by the Ready Mix Concrete Association of Ontario in association with the Ontario Ministry of the Environment. This certification is designed to provide owners and customers with the assurance that the concrete plant and products that have been selected, meet or exceed Environmental and Sustainable Development practices and protocols. When this project is complete, the plant will have minimized its environmental footprint, while obtaining its certification as an ECO CERTIFIED Concrete Facility.

The state-of-the-art concrete plant is expected to be fully operational by the end of July 2011.

TOMLINSON and Lystek



R.W. Tomlinson has recently acquired a majority interest in Lystek International Inc. (www.lystek.com). Lystek is a company that is commercializing its patented technologies related to organics processing and bio-solids management. This business line should fit well within Tomlinson Group, and augment our continuing development and expansion into the solids waste management industry across North America.



The market for Lystek technology and services is unlimited and has possible applications on an international level. There are more than 17,000 waste-water treatment plants across North America alone, all of which represent candidate sites for the use of the Lystek technology. Lystek takes the solid waste product from the waste-water treatment plants (called bio-solids or sludge) and produces a beneficial fertilizer product for land application. This diverts materials from landfills, and is a cost-effective and sustainable long-term business line. It takes advantage of the continually evolving regulatory requirements across North America, which currently restrict the disposal methods for bio-solids. The Lystek business line will be led by Rick Mosher.



OTTAWA CHINATOWN GATEWAY ARCH

AMERICAN PUBLIC WORKS ASSOCIATION SELECTS TOMLINSON FOR STRUCTURE OF THE YEAR IN NORTH AMERICA

The local Chinatown Business Improvement Association, in a unique partnership with the City of Ottawa, the City of Beijing and the Government of Canada, commissioned the construction of a traditional Chinese gateway arch at the intersection of Somerset St. and Cambridge Ave. Called the Ottawa Chinatown Gateway Arch, it's a symbol of prosperity, health and good fortune, and is of a Chinese imperial-style design with nine distinguished golden roofs covered with glazed tiles. Symbolic coins of gold, silver, copper, iron and tin are among the items embedded in the structure to bring blessings to the people and to the land.

R.W. Tomlinson played an integral role in facilitating the construction and utilized a small group of workers from the Heavy Civil Division to set the footings and columns that would ultimately support the total weight of the structure, which approaches 135 tonnes. Over the course of six months, R.W. Tomlinson and local residents watched as Somerset St. transformed and revitalized with this colourful symbol of prosperity. For our part, we worked diligently and were able to place the concrete footings and columns quickly, which allowed us to form and cast reinforced concrete beams and window blockouts, which are integral for the stability and longevity of the structure. This work was completed within a short two-month window.

The Chinese Government provided technicians and artisans to ensure the authenticity of the structure. In order for the project to succeed, it was important that we worked together. While R.W. Tomlinson constructed the structural components of the arch, the Chinese artisans created the roof structures, inlaid panels and emblems. We worked together to erect and incorporate them into the finished product. All of this while trying to

overcome the cultural and language barriers. Among the accomplishments that we are all proud of was the way all parties adapted through the use of interpreters and hand signals to develop a unique camaraderie.

On April 14, 2011, R.W. Tomlinson was informed that the American Public Works Association selected the Chinatown Gateway Arch as one of the Projects of the Year for 2011. This honour would not have been possible without the seamless co-ordination between the Canadian and Chinese construction teams. Congratulations to everyone involved with the project. This was quite the accomplishment and has put us in an elite group of winners.

We would like to recognize the following team members: Pat O'Brien, Joe Nadeau, Lee Spingle and Michel Pilon. Each of these individuals went above and beyond what is typically asked of them. To these team members and everyone else whose contributions made this project a success, we thank you for your efforts.

Other interesting facts surrounding the gateway arch:

- Total weight of the structure is approximately 135 tonnes, including the foundations.
- Designed for a 100-year wind storm and a 500-year earthquake occurrence.
- An earthquake on June 23, 2010, occurred during the placement of the last roof section.
- Eleven layers of paint were used throughout the structure.
- Gold leaf is inlaid on emblems and panels.
- Two gateway lions are located at the base of the arch. The male lion is holding the world and the female is holding a cub.

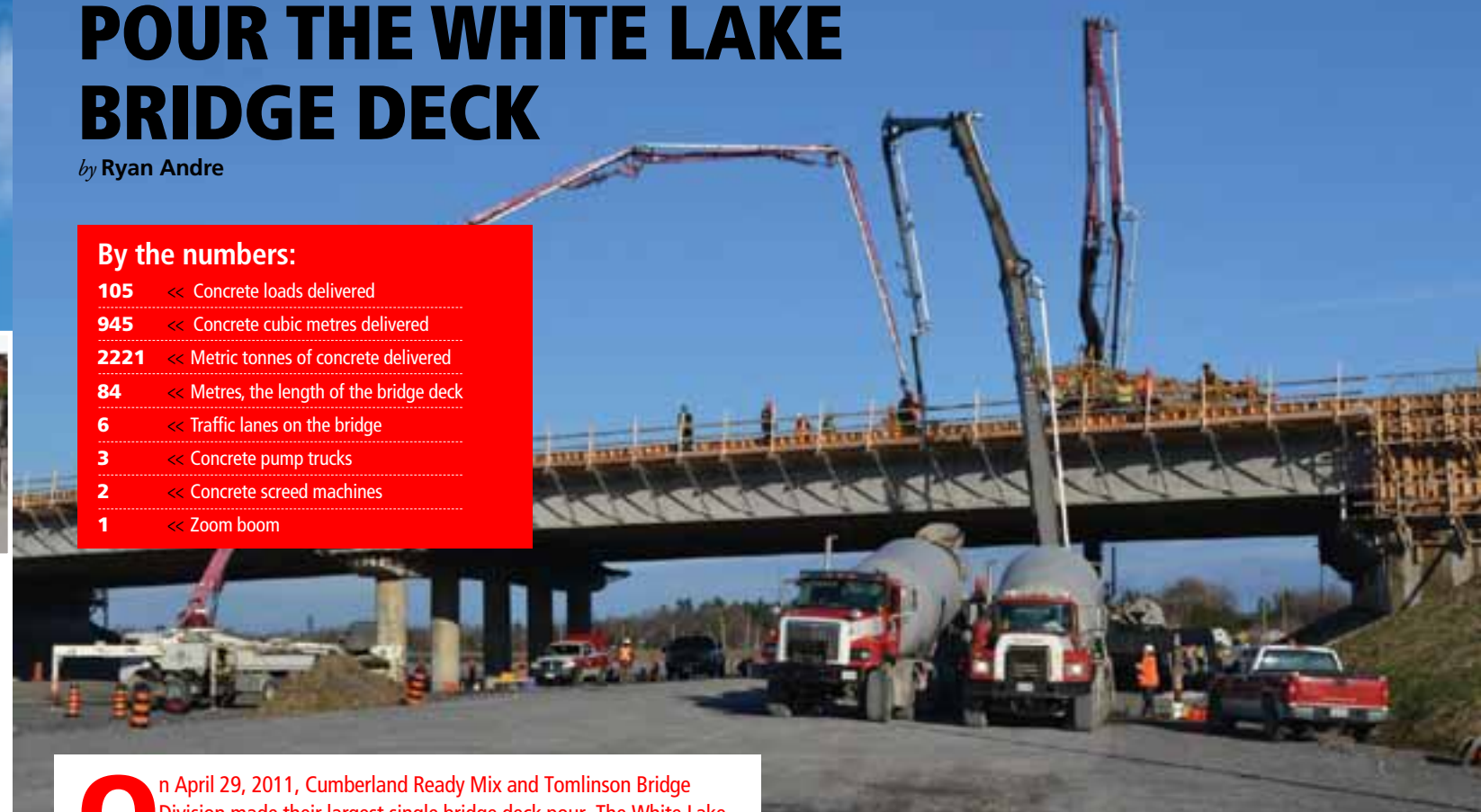


CUMBERLAND READY MIX & R.W. TOMLINSON POUR THE WHITE LAKE BRIDGE DECK

by Ryan Andre

By the numbers:

- 105 << Concrete loads delivered
- 945 << Concrete cubic metres delivered
- 2221 << Metric tonnes of concrete delivered
- 84 << Metres, the length of the bridge deck
- 6 << Traffic lanes on the bridge
- 3 << Concrete pump trucks
- 2 << Concrete screed machines
- 1 << Zoom boom



On April 29, 2011, Cumberland Ready Mix and Tomlinson Bridge Division made their largest single bridge deck pour. The White Lake Bridge deck, which is part of the Arnprior Highway 417 expansion, had a total concrete volume of 945m³. The pour began at 4 a.m. on Friday morning and was completed 11 1/2 hours later at 3:30 p.m. It took less than the expected time of 15 hours, with an average pour rate of 82m³ per hour. Its speed and success can be attributed to pre-pour planning between the two divisions and use of three concrete pump trucks, alternating positions throughout the pour and two screed machines for finishing.

During the pour, 105 concrete loads were delivered to the site from Cumberland Ready Mix's Stittsville plant. There was an average 18 concrete trucks dedicated to the job for the duration to eliminate waiting time. The White Lake Bridge is one of eight structures being constructed and rehabilitated on the three-year Arnprior/417 contract. Work on the contract is expected to be completed by 2012. We are extremely proud of all the effort put forth by workers from both divisions. Thank you.



\$ WORK HARD WIN BIG! \$

TOMLINSON L O T T E R Y

I would like to take this opportunity to personally thank each of you who have spent your valuable family or personal time over the last year helping us complete our many projects with difficult time constraints. Without your help, we would not be Ontario industry leaders. In appreciation of your efforts this year, we have developed the Tomlinson Lottery, with three prizes of \$5,000 to be drawn at year's end. Employees will be issued a lottery ticket for each non-regular-scheduled holiday, Saturday, Sunday or nightshift they work. The more unscheduled days worked the better your chances of winning.

Thanks for all your effort and good luck.
— Ron Tomlinson

win \$5,000

Please join me in congratulating the 2010 winners! Christopher Hameluck, Jean-Pierre Lefebvre and Daniel Moore
This lottery does not apply to any personnel who receive a performance-based bonus at year end, Ontario Trap Rock or any affiliated companies.

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GOULBOURN-STITTSVILLE SANITATION

Since reporting the addition of Goulbourn-Stittsville Sanitation last summer, Tomlinson Environmental Services (TES) has acquired more than 1,000 commercial contracts from BFI Canada. This acquisition included the front-end commercial vehicles and containers used to service our new clients. We have been busy re-painting and lettering these vehicles and containers with Tomlinson's name and colours where possible, and replacing them when necessary. The acquisition of both Goulbourn-Stittsville Sanitation and the commercial contracts has created a need for new software to route and invoice these services. TES selected TRUX, a hauling and disposal program, and implemented this system for commercial, roll-off, curbside and transfer station use.

TES also began renovations at the Moodie Dr. divisional headquarters this past winter. These renovations involved finishing off the second floor to accommodate offices, work areas, a boardroom and staff room. The main floor was redesigned to better house the sales and dispatch personnel. As of June, the new office areas at Moodie Dr. have welcomed new personnel from the Carp site as well as some new hires. This centralization of key office staff will allow the division to operate more efficiently and better prepare for future growth.

TOMLINSON GOES 'LEAN'

Over the past six months, R.W. Tomlinson has been implementing the Lean System, from the office to the garage to scales/quarries to job sites. Lean thinking is a "systematic approach to identifying and eliminating waste (or non-value-added activities) through continuous improvement by flowing the product or services supplied by the company at the pull of customer in pursuit of perfection."

The reason for implementing the Lean System into our work place is to better structure our paper flow and work process to make it more efficient. Lean requires that everyone is committed to finding better ways to do things. This means excellence in everything we do for our customers as well as ourselves. Continuous improvement is how to achieve excellence and without it, you cannot become a Lean organization.

One of the Lean methods being used at Tomlinson is the Plan-Do-Check-Act (PDCA) Cycle, which helps facilitates change for the better.

PDCA STANDS FOR:

- P**lan your changes to bring improvement.
- D**o changes on a small scale to trial them.
- C**heck to see if changes are working and to investigate selected processes.
- A**ct to get the greatest benefit from changes.

This PDCA cycle should be used again and again for continuous improvement.

TOMLINSON GROUP'S NON-STOP ACCOUNTING TEAM

Here's who we are: accounts payable, accounts receivable, payroll, senior accountants and reception. Here's what we do: service all of Tomlinson's Group of Companies, producing invoices, making cheques, data entry, contract administration, payroll, customer accounts, sorting and filing.

Some interesting facts about Tomlinson's accounting team:

- 1) We produce 65,000 invoices yearly for our 2,000 customers.
- 2) We process 50,000 invoices yearly to pay approximately 2,000 vendors.
- 3) We process 30,000 external equipment rental tickets yearly and pay them bi-weekly.
- 4) We pay 1,000 employees bi-weekly.



BACK ROW, FROM LEFT: Guy Gemus, Marc Salter, Iman Faris, Alex Romano, Simon McLennan and Scott Bolton. **MIDDLE ROW:** Lynn Wharton, Angie Goth-Caron, Bettina Lavigne, Charlotte Berube, Joan Fetterly, Kelly Klein-Swornink, Adele Persaud, Carol Naphan, Barbara Smith and Chris Borup. **FRONT ROW:** Terry Masnyk, Debbie Cutts, Amy Fox, Audrey Hammond and Linda Bourbonnais. **MISSING:** Melanie Brazeau, Bonnie Delarge and Annick Lapensée.

ATTENTION ALL DRIVERS

by **Richard Holmes, CVOR Compliance Officer**

We have seen a rapid increase in vehicle collisions resulting from the ineffective site lines caused by improper air seat adjustment. Therefore, to help correct this problem, company policies have been implemented to help alleviate this dilemma. All ride air seats will be adjusted to permit absolute and efficient use of all mirrors, allowing the best possible site lines forward and to each side of the vehicle. Drivers will sit upright in the seat so as to be easily identifiable, wearing his/her seatbelt and in the safest position in case of an emergency. Professional drivers use all of the tools at their disposal to allow a safe and efficient trip.



✔ **Correct seat positioning**



✘ **Incorrect seat positioning**