

Brecon Vibrationstechnik GmbH, 50933 Cologne, Germany

# State of the art concrete compaction system for bridge project in New Zealand

The NZ Transport agency is currently undertaking road works for improving the Wellington Northern Corridor. Part of this project is to upgrade the MacKays to Peka Peka Expressway. The so called M2PP project is being built by an alliance made up of the NZ Transport Agency and several specialized planning and construction companies. This means an innovation in the way the project is being delivered, setting new standards for the construction industry in New Zealand. A best possible concrete consolidation and finish were set as high priority measures to fulfill.



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Manager at M2PP, had contacted company Brecon as well as other suppliers from different countries for concrete compaction systems. It was already clear that the form-

work for 1825mm deep supertee bridge beams with a length of 40 meters would be manufactured in China.

When comparing several proposals there were two remarkable differences about the Brecon proposal. Brecon offered 25% less vibrators for the same mold length and concrete volume. However Brecon's offer included the high-end vibration drive called SL vibrator, which stands for a synchronous vibration of all vibrators mounted to the formwork.

The decision for the SL vibration system from Brecon was made after clarification of all technical circumstances within few weeks time. Brecon delivered a high frequency vibration system with Brecon-SL synchronous vibrators, distribution box and a radio controlled frequency cabinet and an additional frequency display.

Several months went by until all the heavy equipment manufactured for the onsite bridge beam production was in place.

After installation of the vibration system M2PP reported difficulties to Brecon, specially an overcurrent of the vibrators of 4 time the nominal value. However based on the very good experience in co-operation and communication these difficulties were overcome quickly.



*The formwork before the modifications*



*The formwork after the modifications*



*Preparing for the first super tee pour*

Brecon received all required detail information from M2PP within shortest time in order to analyze the situation and responded with a to-do list of actions to be undertaken, mainly in regards to the design of the formwork with respect to the transmission of the vibration forces into the steel structure.

Precast manager Juan Pretorius stated: "We followed Brecon's advice and the current has dropped from 12A to 3A! We cannot believe that such minor changes could have such a dramatic effect."

For both partners, Brecon and M2PP, it was clear that the open communication and very direct co-operation had allowed to instantly solve the situation.

Already after pouring the first beam, M2PP informed of remarkable improvements compared to former experiences in precast production.

From the first decision for Brecon as the supplier for the compaction system through to the initial production of the first concrete beam with remarkable quality M2PP is highly convinced that they had taken the right decisions. Xavier Fresno, project manager at Brecon and responsible for the M2PP project was delighted when receiving the following feed back from Juan Pretorius: "We poured our 3rd beam yesterday and are extremely happy with the performance of the form vibrators. This is the first time most of my production team have worked with form vibrators where the frequency can be adjusted and they are very complimentary of the system. It allows

us to manipulate the concrete in ways we were not able to before. We are achieving a very good finish on the beams and being complimented about how good the concrete finish is coming out."

#### FURTHER INFORMATION

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