



## A levee with a difference

Located within the Tamar River floodplain at the junction of the Tamar, North and South Esk Rivers, Launceston is prone to flooding. A major flood in 1929 which devastated the city and several smaller floods since, prompted the Flood Levy Project to begin construction in the 1960s. The levee walls – some as high as four metres – protect the low lying areas on the flood plain to separate Launceston from the surrounding rivers. While the levees continue to offer some protection, many have collapsed.

To repair and rebuild the existing system, construction of The Launceston Flood Protection Scheme began in 2010. The Scheme is a \$55 million project being funded by the Federal, Tasmanian and Local Governments, comprising a levee and flood gate system which includes 12 kilometres of earth levee, 700 metres of concrete levee and 16 floodgates.

A priority for the project was not only to reduce the risks against the potentially devastating and catastrophic impacts of flooding, but to beautify the levees, by making the earth levees into public grassed grounds and the concrete levees into city features - for pedestrian and cycle use.

### Precast manufacturer

Duggans Precast

### Project Owner

Launceston Flood Authority

### Builder

VEC Civil Construction

### Architect

Crawford Shurman

### Engineer

Engineering Edge

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## **Precast chosen for its strength and beauty**

The high quality, long life, durability and strength of precast concrete, combined with the range of surface finish on offer, made precast the best choice for the project's levee walls.

Supplier of precast concrete elements to all sectors of the construction industry in Tasmania, National Precast member Duggans Precast was engaged to manufacture the 700 metres of levee walls for the project from its versatile factory in the Huon Valley

According to Precast Project Manager Andrew Duggan, the flood levy panels were larger than the company would usually produce. "The panels themselves were 300mm thick and weighed nearly 20 tonne - quite large panels - and the reinforcement required was very heavy as well.

"They need to withhold tonnes of water during a substantial flood and make sure they hold the water back to protect the Invermay area," he said. Mr Duggan says there were no real production issues in manufacturing panels this size but they were almost at the limit of the company's gantry crane and most panels had to be delivered one at a time.

## **Precast meets art**

59 of the precast panels were produced using different rubber form liners. Some of these were standard patterns, while others were custom designed for the Flood Authority. For an even more impressive impact, 20 of the panels had specially designed stencils from a local Tasmanian artist.

"A local artist (Watermark) cut their designs into a plastic sheet which consisted of numbers representing flood dates and also a full length wave pattern. We laid the sheet on top of the panel after our concrete finishers had finished trowelling. Then a concrete retarder was painted on the concrete through the stencil to create the surface pattern. The next day we pressure washed the panel to expose the concrete aggregate and the pattern."



Mr Duggan says the end result was impressive. “You wouldn’t usually expect retaining flood walls to look so good, but the finished product does look great, so it’s a feather in our cap.”

### **Built to last**

The project brief included a design life of 80 years for all structural components. As well, it needed to sustain a one in 200 year flood. The precast levees are manufactured to be durable and low maintenance to meet those requirements.

Mr Duggan says the large scale of the project was a rewarding experience for his team. “This was a very different project for us. Most of our manufacturing would include precast walling for various commercial and residential buildings of various shapes and sizes as well as regular retaining walls, but providing this kind of infrastructure was a challenge that our business is very proud of.”