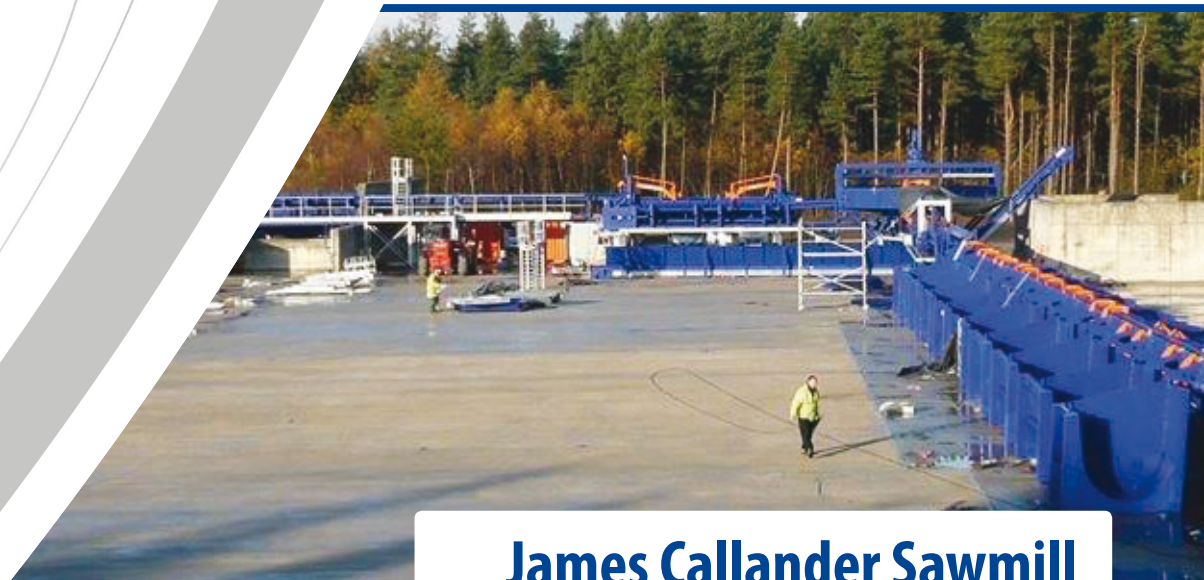


## Project Spotlight



### James Callander Sawmill Fife, Scotland, UK

#### Design and construction of an 18,000m<sup>2</sup> steel fibre reinforced concrete (SFRC) 'jointless' external ground floor slab

**James Callander & Son Ltd, as the leading UK producer and supplier of sawn softwood timber, in association with Marshall Construction selected Twintec to design and install a Freeplan XT<sup>®</sup> external ground bearing steel fibre reinforced concrete (SFRC) floor slab for their new log sorting plant.**

By selecting a Freeplan XT<sup>®</sup> 'jointless' SFRC floor slab, James Callander benefit from significantly reduced joint maintenance costs and time, improved toughness and durability in addition to substantially reduced construction programme on site.

The Twintec Design-Build-Guarantee solution provided all parties with a single point of contact for the floor slab element of the project.

Construction of 18,000m<sup>2</sup>, 170mm thick slab cast to simple falls from the log sorting foundation to channels and kerbs took only 12 days. Concrete supply is a critical factor in the production of 'jointless' floor slabs and the support from Bardon Concrete played a pivotal role in the success of the project, delivering up to 362m<sup>3</sup> on selected pour days.

A 40N grade concrete mix was supplied by Bardon and reinforced with AFT 08/55 steel fibres at a dosage rate of 30kg/m<sup>3</sup> and 0.9kg/m<sup>3</sup> of polypropylene fibres. The fibres were added on site using a specially designed integration machine manned by experienced Twintec operatives. Twintec believes this is the only proven method of ensuring that the steel fibres are evenly distributed throughout the concrete mix.

A galvanised expansion joint was used at the panel edges with a maximum panel size of 36m x 31m pouring up to 3 large panels per day. The surface of the floor had a panned finish and subsequent brush finish with a trowelled margin.

#### Project Data

|                  |                          |                  |                           |
|------------------|--------------------------|------------------|---------------------------|
| End User:        | James Callander          | M <sup>2</sup> : | 18,000m <sup>2</sup>      |
| Main Contractor: | Marshall Construction    | Slab Depth:      | 170mm                     |
| Consultant:      | CRA Consulting Engineers | Fibre Type:      | AFT 08/55 & polypropylene |
|                  |                          | Completion Date: | August 2011               |

# Project Spotlight



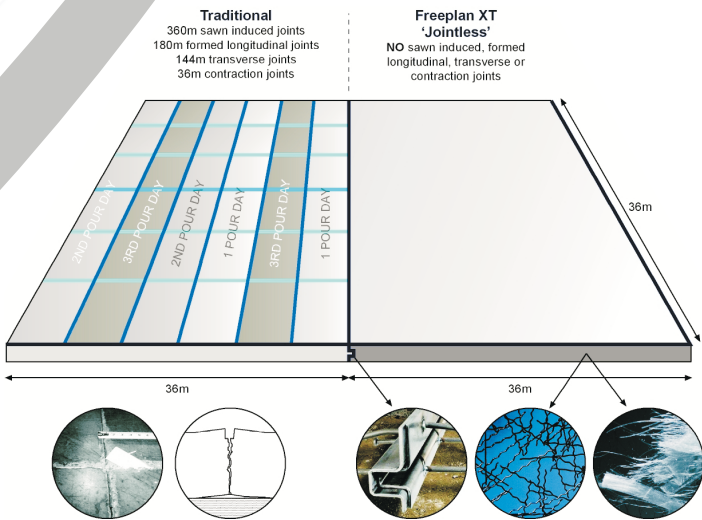
## Freeplan XT® – Substantially Reduced Construction Programme

A SFRC ‘jointless’ designed external yard is constructed using flood pour techniques and utilises laserscreed technology enabling up to 2,500m<sup>2</sup> to be poured with a single production team per day. Expansion joints are installed at the panel edges up to a maximum of 40m x 40m.

No sawn induced (transverse joints), formed longitudinal, or contraction joints are required.

## Freeplan XT® – Reduced Joint Maintenance Cost and Time

A SFRC ‘jointless’ external yard will contain on average 75% fewer joints than the traditional alternative, this will equate to a significant reduction in joint maintenance cost and time year on year, vastly reducing the overall life cost of the facility.



|                  | Expansion joints (lm) | Longitudinal joints (lm) | Contraction joints (lm) | Transverse/saw cut joints | Total (lm) |
|------------------|-----------------------|--------------------------|-------------------------|---------------------------|------------|
| Traditional Slab | 150                   | 1728                     | 400                     | 800                       | 3078       |
| 'Jointless' Slab | 466                   | 0                        | 0                       | 0                         | 466        |

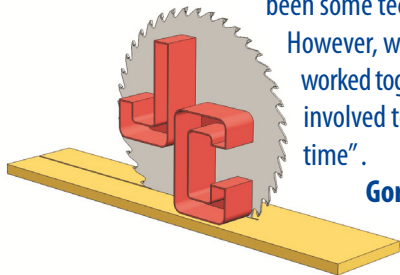
(Based on a 10,800m<sup>2</sup> (50m x 216m) external yard)



“This has been quite a challenging project, as we are working on a completely green site and are situated quite far away from the necessary utilities. As a result there have been some technical challenges.

However, we have successfully worked together with all the parties involved to complete works on time”.

**Gordon Callander, James Callander & Son**



Contact the Twintec business team for further information:

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