

**Kennacraig Ferry Terminal**

# Complex marine works improve 'lifeline ferry services'

**£4.2m**

/ Project value

**December 2010**

/ The build commenced

**August 2011**

/ The build was completed

Notable for overcoming the significant challenges presented by the worst winter weather on record in the remote Kintyre peninsula, we completed the £4.2m extension of Kennacraig's existing ferry terminal to accommodate the introduction of the MV Finlaggan – a drive-through vehicle and passenger ferry. Ensuring no disruption to the port's busy operations, we implemented a range of value and risk engineering solutions, including the construction of a stone filled temporary dolphin, which significantly improved the efficiency of construction for programme surety while reducing health and safety challenges.

**The Brief**

The contract (ICE 7th Edition) centred on the extension of the existing facilities at Kennacraig Ferry Terminal in order to facilitate the service entry of the MV Finlaggan. It was imperative for Caledonian Maritime Assets Limited (CMAL) that work was undertaken with a minimum of disruption to the scheduled operation of the 'lifeline ferry services'.



“Following GRAHAM’s successful completion of landside and complex marine works in a busy operational port environment, I have no hesitation in recommending GRAHAM for similar works,”

Mathew Ross  
Halcrow Director Building and Infrastructure  
(appointed Engineer)

“Through the tender process and the site works, GRAHAM’s staff were proactive and professional. Their partnering approach was a key ingredient of the successful completion of the works, particularly the extension of the pier whilst still in use by ferries. GRAHAM were safety conscious and environmentally aware, both of which were important for the live works at this remote rural location,”

Mathew Ross  
Halcrow Director Building and Infrastructure (appointed Engineer)

### The challenges

Situated in the West Coast of Scotland, the Kennacraig Ferry Terminal provides crucial ‘lifeline ferry services’ to the surrounding isles and therefore it was essential that our work was conducted while the dock remained fully operational. Indeed, ferries used the terminal up to eight times daily (each). While we adopted a phased approach to our main works, we were unable to carry out any operations when a ferry was due to arrive at the terminal (15 minutes before, during and 15 minutes after). The extreme winter weather, coupled with the Terminal’s remote location, also presented consistent challenges, making pre-planning vital to ensure the on-time arrival of plant and materials.

### GRAHAM’s solution

Recognised by appointed Engineer Halcrow Group Limited for being “proactive and professional”, we delivered the Kennacraig Ferry Terminal extension on time and with no delays to the arrival of the new MV Finlaggan service. Features of our programme, which included 24/7 working to recoup minor delays resulting from the worst ravages of the winter weather, included a new large open piled berthing dolphin, repairs to existing sheet pile walls, replacement of fuel lines and the reprofiling of existing concrete ramps. Our alternative design development, and construction sequence, were notable for the benefits deriving from their greater degree of flexibility. For example, the completion of Section A works prior to the arrival of the MV Finlaggan provided improved certainty in achieving programme completion. The construction of a temporary sheet piled dolphin off the line of the ferry berth, creating a safe zone between our works and the ferries, was an additional innovative method implemented.

### Outputs & Benefits

- / **Weather Conditions:** We successfully completed the project through the worst winter on record, recouping minor delays with 24/7 working. From this experience, we now have contingency plans in place and assess long-range forecasts
- / **Value Engineering:** The construction of stone filled cofferdam used a temporary dolphin to realign ferries from the works area, rationalisation of the piling design to remove raking piles and development of a precast concrete shell for construction of a new dolphin rather than an insitu concrete dolphin
- / **Delivery Expertise:** Despite the poor weather conditions and the night time conditions, we installed all piles and posts within the tolerances of the tight dimensional controls
- / **SMEs:** 16 of our 28 SMEs employed were from the local area
- / **Safety Focus:** No RIDDORS in over 45,000 ‘manhours’



For more information on how we’re delivering lasting impact:

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