

Port Dundas Drop Locks

This project involved the development of two-drop lock systems to create a new marina in the centre of Glasgow, reinstating an historical canal link. Bennett Associates were responsible for the structural and mechanical design of the lock gates, safety boom and gravity sluicing system as well as the system integration of the electrical controls.

One of the main elements of the project was the construction of two locks to provide access between Speirs Wharf and Pinkston Basin on the original canal and a new lake beside the M8 motorway. The water level of the lake is approximately 4.5 metres below that of the canal and has to be closely controlled because of its proximity to the motorway.

Instead of traditional materials, a new approach to mitre lock gate design was used to design gates measuring 7.2 metres high by 3.6 metres wide with an all steel construction. Experience from other sectors was used to develop a seal and gate structure that was easier to install compared to traditional gates. This would bring significant improvements in accuracy, speed of installation, durability, adjustability and ease of maintenance.

Both sets of gates were installed in half a day -- far more quickly than traditional structures. After installation, steel plates were fixed to the lock floor and walls to provide a close seal with the base of the gates, which are opened and closed by hydraulic rams operated by an electrical control system. Boats are able to pass through each lock in about 15 minutes.

Bennett Associates were appointed by the main contractor for the project, C. Spencer Ltd and the whole restoration project was managed by British Waterways.

Bennett Associates (originally founded in 1984) was acquired in 2008 by Atkins; bringing their proven technical expertise to the UK's leading engineering consultancy.

