

## Wallace Studios at Speirs Lock

Complete	Area	Client	Architect
2010	UK Scotland	Royal Conservatoire of Scotland	Malcolm Fraser Architects

In 2010 The Royal Conservatoire of Scotland opened Wallace Studios at Speirs Lock. The state of the art creative centre provides rehearsal and production facilities for students of modern ballet, musical theatre and technical production arts.

Designed by Malcolm Fraser, the Wallace Studios provide four large, high specification dance studios, wardrobe design studio and set design and construction space that features an industrial size paint frame.

Formed out of derelict steel framed storage sheds, the studios are naturally ventilated and lit by natural daylight from rooflights. Changing rooms, a fitness suite and other staff and student facilities sit around a central court that forms a social space for users of the building.

The new building won a RIBA award in 2011.



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## Services provided

The majority of the project team had worked together on the design for the new Scottish Ballet Headquarters. Due to our familiarity with the acoustic requirements of dance and production facilities, Sandy Brown was appointed to provide a full consultancy service. This covered many elements, including:

- achievement of suitable background noise levels in each space
- adequate internal sound insulation between areas
- control of noise from rehearsal spaces and building services to the external environment
- achievement of acceptable acoustic quality in each area.

## Special acoustic features

The programme for the development was ambitious. A three month design period and eight month construction period was planned so that the new facilities would be ready for the start of a new academic year. While the project needed to achieve technical excellence, the construction cost of just £3.1 million added extra considerations into the acoustic design.

The existing cavity brick / block external wall was retained and supplemented with a new independent plasterboard lining. The original asbestos cement sheet roof was replaced with a new Kingspan roof for reasons including weight, cost and ease and speed of erection. It was upgraded to enhance the sound insulation with a plasterboard lining, beneath which is a perforated plasterboard layer to provide absorption in the space.

A key requirement was for the studio spaces to be naturally ventilated via rooflights, despite high levels of road noise, and a pragmatic approach to this part of the design was adopted. The glazing could be designed to exclude external noise when closed, but noise ingress is inevitable when opened. The rooflights nearest the main road were sited so that they face away from the road, with the upstand forming an acoustic barrier, and with the internal faces of the upstands acoustically lined. The thermal modelling study undertaken by the services engineers indicated that the times when rooflights needed to be opened were relatively limited, and mostly confined to the summer recess period. The predicted noise level with rooflights open and closed was demonstrated to the users; the higher noise levels with windows open were accepted on the basis that the need to open the windows was under the users' control, and in the light of the advantages that natural ventilation afforded.

The thermal modelling study indicated that high thermal mass was not essential, particularly in the studio areas, so drywall constructions were used. In addition to providing appropriate inter-area sound insulation, advantages were speed of construction, and less risk of poor workmanship.

Twin frame stud walls were specified for the main separating walls between studios. The existing blockwork separating walls between units were upgraded with independent plasterboard linings. Standard drywall constructions were used in the teaching areas.

The achievement of the optimum acoustic quality in the studios was based on the earlier design used at Scottish Ballet. The acoustic treatment comprised areas of acoustically absorbent wall panels located at high level on the walls and areas of perforated plasterboard in the ceiling.