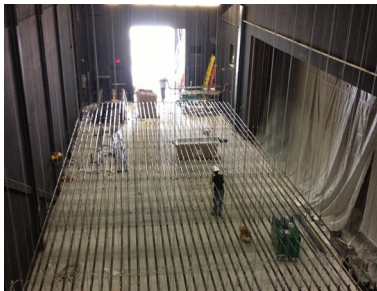


# FIRE CURTAIN HOIST DESIGN AT THE NATIONAL THEATRE

## OVERVIEW

The Royal National Theatre in London is one of the UK's most prominent theatre companies. Founded in 1963, the theatre is located next to the Thames in central London. It stages up to 25 new productions a year on its four stages, and since its inception, the National Theatre has presented over 800 productions.



## THE APPLICATION

Fire curtains are a key fire safety component in any theatre. The ability to rapidly drop-in and pull-out the curtain not only offers safety to audience members in case of fire, but also aids the facility to reset the curtain quickly in case of false triggering, with minimal disruption to a performance. Fire curtains by their nature are very heavy. Understanding the dynamic loading effects of moving such a weight swiftly is critical to designing an effective hoist system.

## THE SOLUTION

In order to understand the loads involved in moving the fire curtain, a BroadWeigh shackle was rigged into the hoist line of the curtain. To capture peak loads the BroadWeigh shackle was set to transmit readings at a rate of 50 samples per second. Data from the shackle was collected through a USB base station attached to a PC running display and logging software. The data could be simultaneously viewed on the handheld provided in the kit.

