

# Noise control during vacuum excavation

November 2018

## Durham University Campus estate

The Durham University campus is based on and around an estate which includes:

- Part of a UNESCO World Heritage Site
- 1 x ancient monument
- 5 x Grade I Listed Buildings
- 68 x Grade II Listed Buildings
- 111 acres of woodland



## The development

Durham University's 10 year strategy calls for major developments across the estate. These include provision of state-of-the-art facilities to enhance the student learning experience, doubling the number of undergraduates by 2026/27, and creating a new enterprise hub which will provide a space for students to experiment with business ideas and work with other local business partners.

As part of the University's development plans, a project to undertake excavation work for new nodes and ductwork for data installations was required. The excavation work was located within Durham's busy and historic city centre, on a narrow, cobbled residential street, where a high degree of public access was required.



**“We sought an appropriate product through RVT who offered concise information in relation to available products and provided options and advice associated with the cost effectiveness of either hire or purchase. Without the use of the acoustic panels, we would have been unable to carry out the works safely”**

Site Supervisor,  
Interserve Construction

## **What is a safe dB noise level?**

- Noise levels that reach 85dB can cause permanent damage
- Noise damage caused in the inner ear can lead to hearing loss
- The prescribed highest limit for residential areas is 55dB during the day and 45dB at night

## **The challenge**

Given the context of a busy public setting, only a limited time period was permitted for road closure. This, along with the extensive presence of existing utility services and cabling within the ground, meant that contractors had to carry out the works using a vacuum excavator.

This approach allows the use of suction to remove all the debris created, and enables the safest means of locating underground utilities, by improving visibility and greatly reducing the chance of expensive cable strikes. However, the drawback of using a vacuum excavator in this environment is the excessive noise generated, which was particularly problematic when working in such close proximity to the general public.



With permission for road closure granted between the hours of 09:30-16:30 only, the contractors were required to open the road and reinstate public access on a daily basis.

Since a complete footpath and road closure was not an option, only a temporary solution to the level of noise generated would be practical. The recorded noise within the working area was approximately 85 dB and, as such, represented a significant risk to the general public.

It was therefore necessary to implement effective noise control.

## Key product features:

- Up to 32.9dB reduction in noise
- 1250 x 2500mm
- Independently tested and certified to BS EN ISO 717-1 : 1997; BS EN ISO 345 : 2003; EN ISO 11654 : 1997
- Easy to transport and install
- Printed design is fully customisable

## Key product applications:

- Utilities Maintenance
- Street Works
- Civil Engineering
- Infrastructure
- Maintenance



## The solution: Soundex Curtain

1250mm x 2500mm Acoustic Curtains

After conducting an assessment of the situation, RVT recommended the use of Soundex Curtains. These acoustic curtains were fixed to the front of the Herras fencing panels with cable ties. Using this product resulted in the reduction of noise outside of the working area to an acceptable level, which controlled the hazard and eliminated the risk to the public.



These BS EN 32.9 dB rated curtains have become the preferred choice of many contractors, boasting almost unrivalled attenuation and noise absorption. Designed specifically to provide high-absorption acoustic screening around site plant and other high noise emitting activities, their unique Velcro fastening ensures a seamless noise barrier with eyelets on all edges to enable easy suspension. Their fold-and-lay-flat design also enables easy storage and transportation.

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