



# Alan Auld

ENGINEERING

## Project Data Sheet - Temporary Acoustic Building

Major tunnelling projects in the urban environment can be a real challenge. As well as the technical difficulties of operating on small sites with restricted access, today more than ever contractors have to be considerate to their neighbours. As a result special environmental measures must be adopted to deal with noise and light pollution, as well as dust and vibration.

On the Green Park Step Free Access Project contractor Joseph Gallagher Ltd was faced with the challenging problem of sinking a new 30m deep lift shaft and associated tunnelling works in the Royal Park adjacent to the Ritz Hotel and other high value real estate overlooking the park.

The solution to this problem was to construct an acoustic enclosure over the shaft top site area to enable 24 hour working.

Alan Auld Engineering designed this unusual steel framed structure, which was then lined with precast concrete panels and painted in Royal Park Green to match typical park structures such as the cafe kiosks. As the site is sunk down below its surroundings it was possible to utilize the walls of the existing station structure, as well as elements of the new ticket hall structure, which had been built on dayshift, to absorb much of the noise. However as the Ritz hotel overlooks the park and the site it was also necessary to provide sound deadening to the roof structure. This was achieved by covering the roof area with a layer of sand and paving slabs to absorb the noise being projected upwards from mouth of the shaft.

By adopting this environmental strategy night time light pollution from the shaft flood lights could be minimized and the noise and dust from the shotcreting operation could be contained within the building. The structure was large enough to house the shaft collar operations including a mucking hoist and runway beam. In addition the structure provided space for limited spoil and materials storage, including a concrete re-mix car for night working.

