Manchester New Square
RVT supplies fresh air below ground

November 2017

The project

- Construction of 351 exclusive 1, 2 and 3 bedroom apartments, on a key site in the heart of Manchester
- Developer: Urban & Civic plc
- Main contractor: Lendlease
- Sub-contractor: Adana
- Completion scheduled for the end of 2019
- Before work could commence above ground, a major 30-week programme of works on the site's four-storey basement was required

The challenge

Extensive hydro-demolition work in the enclosed basement would inevitably result in a high level of mist and fumes being produced. Unless some means were deployed to remove these health hazards, it would be impossible for site workers to operate safely.

Maintaining air quality in an enclosed environment

This project to create luxury apartments in the heart of Manchester has resumed progress under a new developer – Urban & Civic plc – after a long lull due to the financial crisis of 2008. Once completed, pedestrian routes unused since the city's Victorian heyday will reopen, while new restaurants and shops will draw citizens to the green public space at the core of the development.

Prior to work starting above ground, extensive hydro-demolition work was required within the existing 4-storey basement. This environment presented challenges in the shape of mist generated by the demolition works and exhaust fumes produced by the diesel plant used. For the demolition workers to operate in safety, suitable counter measures had to be put in place to counter both these hazards.

The contractor handling the basement works, Adana, turned to RVT to implement a solution that would ensure good air quality.

Key benefits of RVT solution

- Site assessment conducted by RVT led to a hazard mitigation solution specific to the basement works at Manchester New Square
- Positive pressure created by the powerful fans ensured the fresh air driven into the site continually displaced the dust and vapour generated by the hydro-demolition works.
- Safe environment created for site workers

" It is hard to find a company in today's market which caters for ventilation systems for these types of complex projects working below ground levels. RVT produced a design based on the size and volume of the site and provided a good professional service. They were always available to visit the site."

Keith Rice, Site Manager, Adana

Further information

Manchester New Square

Adana

A custom-designed solution

RVT carried out an assessment of the site. With four levels of basement going very deep, it was clear that keeping the air clean and safe to breathe would require significant power.

The first step was to install three VENTEX 800SA fans to supply of fresh air to the different basement levels and dilute the ambient dust levels and exhaust fumes from two Bobcats, which were also fitted with exhaust particulate filters. Then, once the hydro demolition itself started, three VENTEX 800 CF centrifugal fans were added to disperse the misty air and ensure good visibility and safe, healthy work conditions. Both models of fan have been specifically designed to channel large quantities of air underground – they are typically used to maintain supplies of fresh air in tunnel workings – so were a natural fit for this job.

Each individual fan delivers tens of thousands of cubic metres of fresh air every hour and creates a positive pressure to ensure good air quality is maintained. The ducting used to convey the fresh air was strategically routed to provide a safe working environment on each basement level.