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Maintaining excellent air quality during intensive excavation under 5-star hotel, Claridge's, Mayfair



Case Study Key Facts

- Claridge's is a 5-star hotel owned by the Maybourne Hotel Group
- The hotel is well-known for its insistence on superior service
- Claridge's was demolished and rebuilt in 1894 to accommodate modern facilities such as lifts and en-suites
- The 'iceberg basement' is the biggest development for Claridge's since the rebuild in the 1800s

Creating a five-storey 'iceberg' basement beneath one of London's iconic hotels

London's Claridge's Hotel was founded in 1812 and its long history has seen it recognised as a bastion of English hospitality. Over the years, its reputation for hosting royalty has led to it being dubbed 'an annexe to Buckingham Palace'. The hotel's superior service has been patronised by notables including Queen Victoria, Cary Grant, Audrey Hepburn and Alfred Hitchcock.

To augment the hotel's already stellar status, the building is undergoing an innovative expansion into its subterranean space. The resulting five story 'iceberg basement' will house a swimming pool, gym, wine store and chocolatier, alongside new staff quarters and a conference centre. The additional 65,000ft³ will sit directly beneath the Grade-II hotel's famously decadent tea rooms and restaurants.

- Cutting-edge construction on an iconic building
- Essential for contractors to be able to safely and comfortably work in the subterranean space
- Imperative that air quality levels were maintained to HEPA standard
- All work carried out directly beneath a 'live' building in which guests could not be impacted



Ventex Centrifugal Fan 300M

Tech specs:

- 110V Supply
- Long duct runs up to 80m
- Mobile
- Available with soft start

Key benefits:

- Suitable for extraction of pollutants in air
- Long distance ventilation
- High temperature extraction

Challenging logistics

Hotel owners Maybourne engaged contractors McGee to engineer a solution to their ambitious plans. They stipulated that all work had to be carried out while the hotel, tea rooms and restaurants were in full operational use. Given the prestige of the hotel, guests would need to be completely undisturbed.

McGee mined a series of vertical shafts, installed new pilings and dug out five three-metre high basement levels to accommodate the new facilities. This intensive and dangerous work required a thoughtful health and safety plan. Primarily, they needed a flawless ventilation system to protect the health of the contractors working below. Without an adequate and tailored system, there wouldn't be enough good quality air below to support the personnel carrying out the tasks below ground.



The RVT solution

The project called for 30,000m³ of material to be excavated – a feat that would produce enormous amounts of dust. Without an intensely powerful ventilation solution, the tunnelling and digging simply wouldn't be able to go ahead.

RVT assessed how much air was needed and where the air needed to get to before proposing a solution consisting of Ventex 300M and 450S Centrifugal Fans combined with extensive ducting. The Ventex Centrifugal Fans were well suited to the cavernous environments opened up by McGee's contractors. The ducting ensured that the right quantities of air reached the necessary parts of the shafts to ensure safe work. Both flexible ducting and in-built galvanised ducting was used to arrive at the final solution.

The whole system was tailored to fit within budgetary constraints and RVT conducted regular site visits to ensure that the air quality levels were optimised for building personnel. In addition to the overall ventilation system, RVT also provided filtering equipment for use on specific pieces of plant to control hazardous exhaust fumes within the enclosed underground spaces.



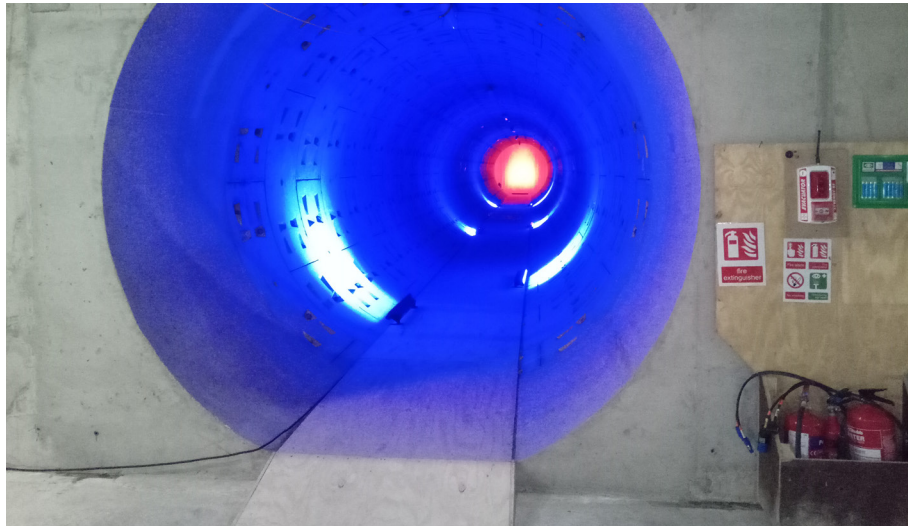
Ventex Centrifugal Fan 450S

Tech specs:

- Skid Mounted 415V Centrifugal Fan
- Airflow rating of 20,500 m³/hr
- Soft start option available

Key benefits:

- Ideal for large spaces that require greater airflows
- Safer for extraction of hot or flammable fumes
- Can be used with long lengths of flexible ducting



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