

Neutralise the dangers of dirty ductwork



It is crucially important to clean ductwork in new buildings in order to meet the HVCA's TR/19 standards, Darren Ling explains why

REGULAR CLEANING of a building's ventilation system is essential for maintaining safe, comfortable and efficient working conditions. But it's not just ventilation in operational buildings that needs to be kept clean. It has long been a myth that protection of ductwork on a construction site is sufficient for maintaining the internal cleanliness of the system in a new building. This is not true.

The Heating and Ventilating Contractors' Association's TR/19 Guide to Good Practice, Internal Cleanliness of Ventilation Systems, stipulates: "Protection of ductwork on a construction site will not guarantee internal cleanliness of ductwork. Where specific verifiable levels of internal cleanliness are required it will be the responsibility of the designer to specify the inclusion of a specialist cleaning contractor on the outset of a contract to internally clean newly installed ductwork just prior to commissioning work commencing."

In the past, there have been issues over whose responsibility it is to maintain a suitable working environment to prevent newly installed ductwork from becoming contaminated. It is the responsibility of the specifier to assess the

acceptable risk of contamination and to select and state clearly, in the invitation to tender, the level of protection required for the ductwork and the requirement for specialist cleaning.

Another common problem in the pre-commissioning cleaning of new ductwork is that some contractors are using tests specified for measuring ductwork cleanliness in existing buildings to evaluate ductwork cleanliness in new buildings. As a result, new buildings are being handed over with ductwork that does not meet the recommended levels of cleanliness.

There are three levels of care and protection for maintaining the internal cleanliness of new ductwork prior to commissioning and/or handover – Protection, Delivery and Installation (PDI) Level 1, 2 and 3.

PDI Level 3 highlights the benefits of specifying a specialist cleaning contractor to internally examine and clean newly installed ductwork. This includes:

- Advice on the number of cleaning access panels to suit the method of cleaning.
- Clear direction on the size and location of cleaning access panels to be installed.

- Verification of the practical access requirements for a regular cleaning maintenance programme.

- Confirmation of the cleanliness of the installation by means of a post-clean report.

Verification must take place immediately after cleaning to avoid post-clean interference by means of a vacuum test (VT) based on the recommendations of the HVCA's TR/19.

A system will be considered acceptably cleaned if a result of no more than .075g/m³ is achieved, equivalent to 0.75mg/100cm² as per the HVCA's TR/19. This applies for

specialist pre-commissioning cleaning of new systems and should not be confused with surface deposit limits, which determine dirtiness levels in existing buildings – commonly 6g/m³ for extract systems and 1g/m³ for recirculation systems and supply systems.

Following the tests, a completion report is issued highlighting the type of tests performed, the results, photographic support and future recommendations on maintaining the cleanliness of ductwork.

// The author is a director of System Hygienics //

Hospital takes a fresh breath of air

System Hygienics has more than 15 years' experience of cleaning ductwork systems for NHS and private hospitals and has just completed a major pre-commissioning clean at the site of the new Peterborough City Hospital working with contractor Mercury Engineering. This new £335 million hospital, built by Brookfield Construction (UK), will replace



the current Peterborough District Hospital, Edith Cavell Hospital and Peterborough Maternity Unit. The City Hospital will offer services for patients not previously available in Peterborough such as radiotherapy. This will mean that some cancer patients will no longer have to make the journey to Addenbrooke's Hospital in Cambridge for treatment.

Mike Sharples, project director from Brookfield Construction (UK), said: "This project is one of the biggest healthcare initiatives in the UK and the largest building project in Peterborough for over 800 years. The hospital is a landmark building and demonstrates a good working relationship between the client, the Trusts, the design team and contractors like System Hygienics."

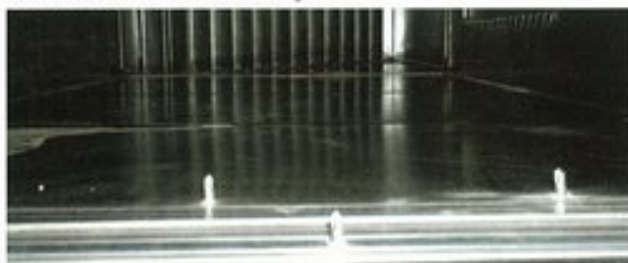
Due to the scale of the project, System Hygienics appointed a minimum of three operatives to be present on site at all times throughout the cleaning project, which increased to eight operatives during busy periods.

The hospital's ventilation ductwork was cleaned using System Hygienics' remote cleaning method – the Jetvent system. The system uses compressed air and a filtered vacuum to achieve a clean to the HVCA's TR/19 standards.

The Jetvent requires minimal access to ductwork as it can reach up to 50 metres from one point. System Hygienics provided reports with before and after photos of all aspects of the ventilation systems along with a certificate of cleanliness and a third party analysed HVCA TR/19 Vacuum Tests to verify the high level of cleanliness achieved.



Ventilation ductwork before cleaning



Ventilation ductwork after cleaning