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Ductwork Keeps Air Fresh at World-Class Sub-Atomic Research Facility

Senior Hargreaves is close to completing the installation of environment and process ventilation ductwork systems at Southampton University.

/24-7PressRelease/ - BURY, UK, April 27, 2008 - Senior Hargreaves is close to completing the installation of environment and process ventilation ductwork systems at Southampton University. The 55 million Mountbatten Building will house the School of Electronics and Computer Science (ECS) and the Optoelectronics Research Centre (ORC). The university is already known for its world-class laser research and development on silicon wafers and the new facility will meet its long term research needs.

Hargreaves has been responsible for the major air supply and extract ductwork systems within a contract worth over 1.5 million. This included the make-up air delivery systems, thermal extract and stainless solvent extract ductwork from the workstations within the clean rooms. General fresh air and exhaust ventilation ductwork for laboratories, seminar rooms, offices and toilets also fell within the scope of the work.

Research and development in bio-electronics, nano technology, lasers and silicon fabrication will be the core tasks in the new building. Work at the sub-atomic level requires clean rooms with exceptional air purity and environmental control. The workstations, known as 'tools', for the precision research and engineering are located within the clean rooms.

Suspended between the structural floors, the clean rooms have accessible service voids above and below. Grilles in the clean room floor draw air into the floor void and it then rises through a room wall cavity, where it is mixed with pre-filtered and tempered air from the make-up air system before being drawn through cooling coils into the sealed ceiling voids. From here it is introduced into the clean rooms via ceiling mounted fan assisted Hepa filters. Extreme care was taken to preserve the hygienic integrity of the input air ductwork during the installation process.

All extract from the clean rooms is through the 'tools'. Control systems monitor temperature, pressure and humidity to keep these factors constant. Exhaust ductwork systems needed to withstand extreme negative pressures of 2000 Pascals. Ductwork was therefore fabricated in fully flanged and heavy gauge galvanised and stainless steel. The completed system has been tested and performance certified at 2500 Pascals for one hour.

Bovis Lend Lease acted as the principal contractor for the project and installed the make up air units. Environmental and process ventilation system design was via the Glasgow office of consulting engineers CH2M Hill who were also the overall design consultants on the project. The clean room was built by CH2M Hill IDC Clean Rooms. Other contractors supplied the lined stainless steel ductwork for the acid and dust extract from localised processes in the building sourcing this from a manufacturer in the USA.

By summer the new building will be handed over for the University schools to commence tool installation. The ECS and ORC are the latest projects by Senior Hargreaves for advanced research, technology and production. In addition to ventilation services for major silicon wafer producers, the company has provided ductwork systems for research facilities at Imperial College, AstraZeneca, The Wellcome Foundation and many other leading pharmaceutical and process engineering laboratories.

More Information

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High/low resolution images are on the web at ainsmag.co.uk/ha166/4543ha1a.htm

Senior Hargreaves is the UK's largest ductwork manufacturer. They produce over 4,000 tonnes of HVAC ductwork each year for a diverse range of construction applications. The HFD range of fully tested fire resistant ductwork is designed for smoke extract and ventilation in fire engineering projects, where safe evacuation of people is vital.