Air Handling Technology Association
Conversion of facilities in the healthcare sector:
Measures required for the treatment of COVID-19

Frankfurt, May 7, 2020 - Thomas Kroll is managing partner of GKS Klima-Service GmbH & Co KG and since 2015 chairman of the board of the VDMA Working Group Maintenance Building Technology (AIG). In an interview, the expert for hygiene and operational safety of ventilation and air-conditioning systems in hospitals, laboratories and healthcare facilities answers current questions in connection with the new VDMA information document "Ventilation and air-conditioning systems in times of COVID-19 - Recommendations for the healthcare sector".

Mr. Kroll, the medium-sized company GKS has been on the market since 1977, with about 70 employees and a focus on the hospital, university and clean room sector. In addition to maintenance, your company's services include plant support and the commissioning and refurbishment of ventilation systems.

As an expert you currently receive many inquiries in connection with COVID-19. What are these questions?

In the isolation wards of the requesting hospitals, not enough beds can be made available for the treatment of infectious patients. For this reason, wards and rooms should be converted for infectious patients or suspected cases so that they can be examined and treated as outpatients, part inpatients or inpatients.

In concrete terms, this means that these wards and rooms must be adapted to the requirements for COVID-19 patients. And operations of COVID-19 infected persons may also have to be performed - the operating rooms must be suitable for this purpose.
However, room conversions in the hospital area must be handled with particular sensitivity. This creates uncertainties, for example in the question of "What needs to be considered here with regard to ventilation technology". Possible transmission paths through the ventilation system are also being questioned, whether the separation efficiency of the filters is correct, or which heat recovery systems are suitable or not for the ventilation of corona stations. Furthermore, it is often asked whether the pressure conditions in the wards and operating rooms need to be changed, i.e. whether an operation should take place in negative pressure. And in general, the issue of how to improve the protection of patients and staff is also a recurring theme.

From which areas of the hospitals do you receive these questions?

Usually, these are the hygienists and the technical managers and technical staff from the ventilation department of the respective hospitals who ask for help. It is then usually a matter of adapting the ventilation system to convert wards and rooms for treating patients with COVID-19.

And how does the new information document support these operators of healthcare facilities who currently have to make far-reaching decisions, for example with regard to a possible change of use of premises?

The new information document was prepared on the basis of DIN 1946-4:2018-09. What is important here is an air exchange rate in accordance with the standard and the correspondingly correct air balance - i.e. a use-related setting of positive pressure, negative pressure or balanced pressure ratio. The special requirements for corona cases are described in the information document.

The clear and concise structure enables a quick recording and evaluation of the current status and the resulting and recommended measures for conversion as well as for the initiation and implementation of further important steps. All this leads to a safe use of ventilation systems for the care of corona cases in hospitals.

Ventilation systems are of immense importance for the health care system - their regular maintenance is indispensable. Without good maintenance, neither safe system operation nor the required system availability can be guaranteed. In addition to the standard you mentioned, the Working Group Maintenance Building Technology (AIG) has developed important technical codes of practice in this area, such as the eight-part VDMA Specification 24186 "Program of services for the maintenance of technical systems and equipment in buildings".
To what extent does this specification serve as a strong foundation of knowledge for the practical use of specialist companies carrying out maintenance of technical installations in buildings?

The specifications VDMA 24186 have been in existence since the beginning of the 1980s and they are regularly adapted to the state of the art so that they are always up-to-date. The last revision took place in 2019.

In connection with DIN 1946-4:2018-09, the AIG specifications provide the basis for the maintenance of ventilation and air-conditioning systems in the health care sector. The scope of maintenance is precisely defined in these specifications and enables the maintenance to be carried out according to a precisely specified checklist. The specifications make it possible to compare the work of specialist companies involved in the maintenance of building services engineering.

These proven VDMA specifications are made by experts for experts. We were able to draw on the same expertise in the rapid development of the information document for COVID-19 conditions.


Do you have any further questions? Dr Thomas Schräder, VDMA Air Handling Technology, phone +49 (0)69 6603 1227, thomas.schraeder@vdma.org will answer your questions.

The VDMA represents around 3300 German and European companies in the mechanical and plant engineering sector. The industry stands for innovation, export orientation, medium-sized companies and employs around four million people in Europe, more than one million of them in Germany.

The Air Handling Technology Association comprises the departments Air Conditioning and Ventilation Technology (Process air as well as Ventilation and air conditioning), Refrigeration and Heat Pump Technology, Air Pollution Control (Process air), Surface Technology and Drying Technology.

The VDMA Working Group Maintenance Building Technology (AIG) is an association of well-known companies under the umbrella of the Air Handling Technology Association, whose members offer highly qualified technical services in the field of maintenance and building and facility management.