Isolation room concept

A Turn Key Solution for hospitals

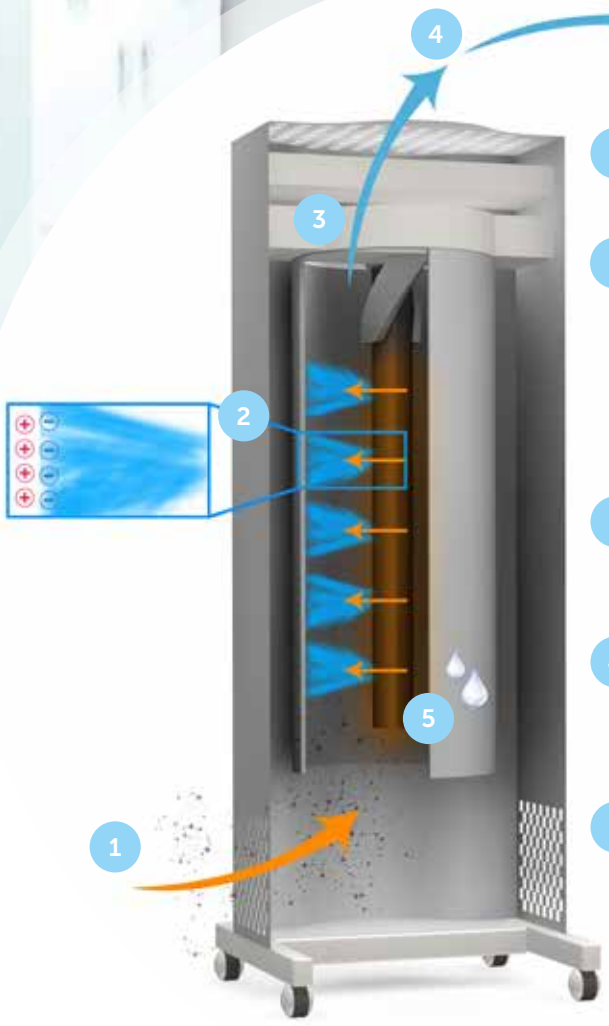
Genano

Enhancing negative pressurisation when needed

Be certain that the air is being extracted outdoors and not recirculated.

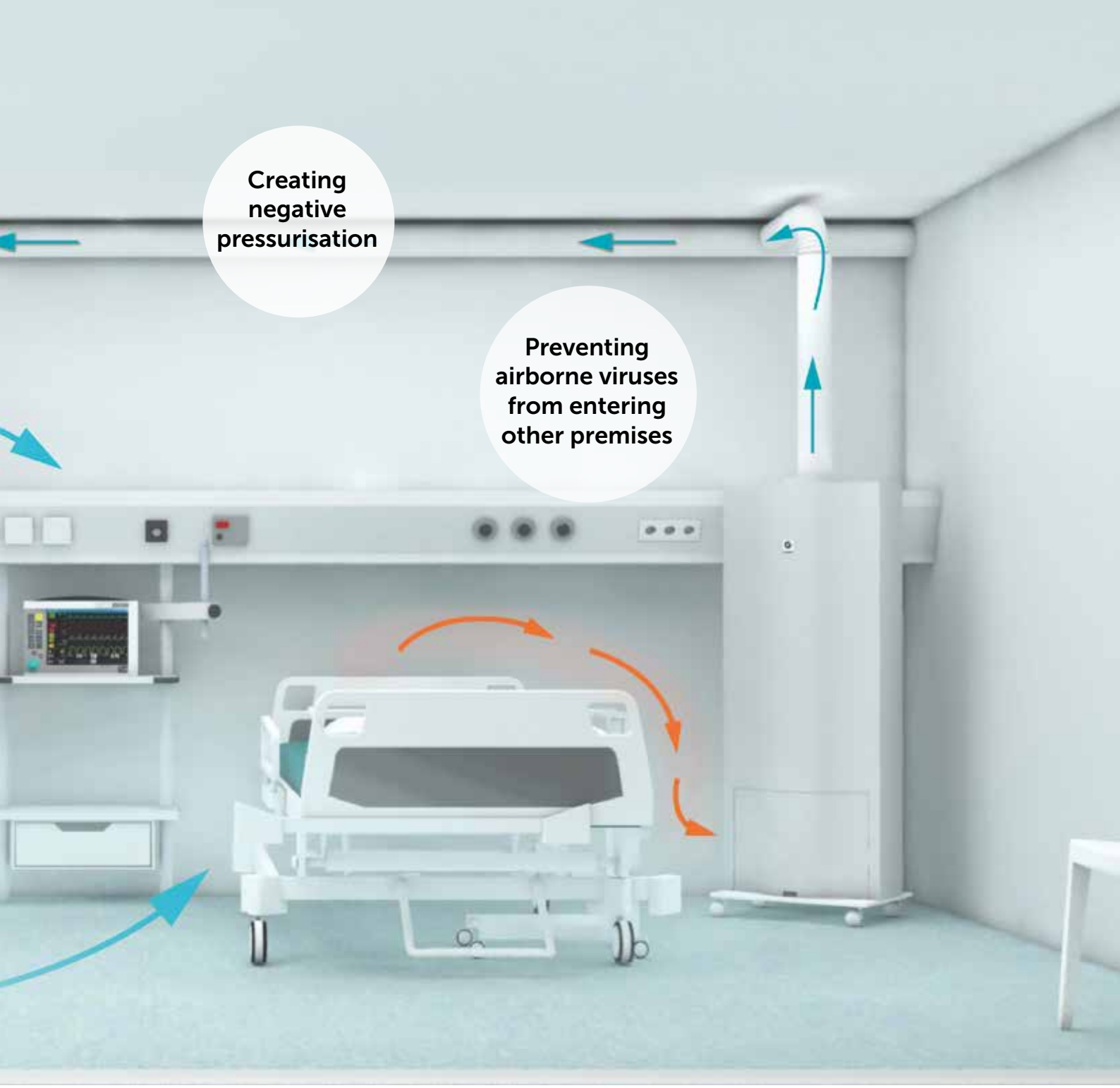
Exhaust will be done with Genano unit.

The air outlet of the unit has to be connected to a duct, from where the “decontaminated” air will be delivered 100% outdoors. This duct should not be connected to any recirculating system or duct.



1. Contaminated air is led inside the unit.
2. Particles are charged negatively in a powerful corona discharge.

   The negatively charged particles are attached to the positive collection chamber. Organic microbes are destroyed with electronical shocks.
3. Finally, the air is lead to active carbon collector which effectively removes VOC gases and odors.
4. Outcoming ultra pure air is completely free from particles of all sizes, microbes, and harmful gases and chemicals.
5. The units have automatic washing function which reduced the need for maintenance and keep the cleaning efficiency high at all times.



Creating negative pressure inside the room

Differential Pressure
Air Changes per Hour (ACH)

Air balancing is done on the air supply of the room, either by the manual control of the air valves or by the building management system (BMS).

It is extremely important that the room is air tight, the ceiling, doors and walls have to be completely sealed. Having leakages will affect the performance and the differential pressure readings.

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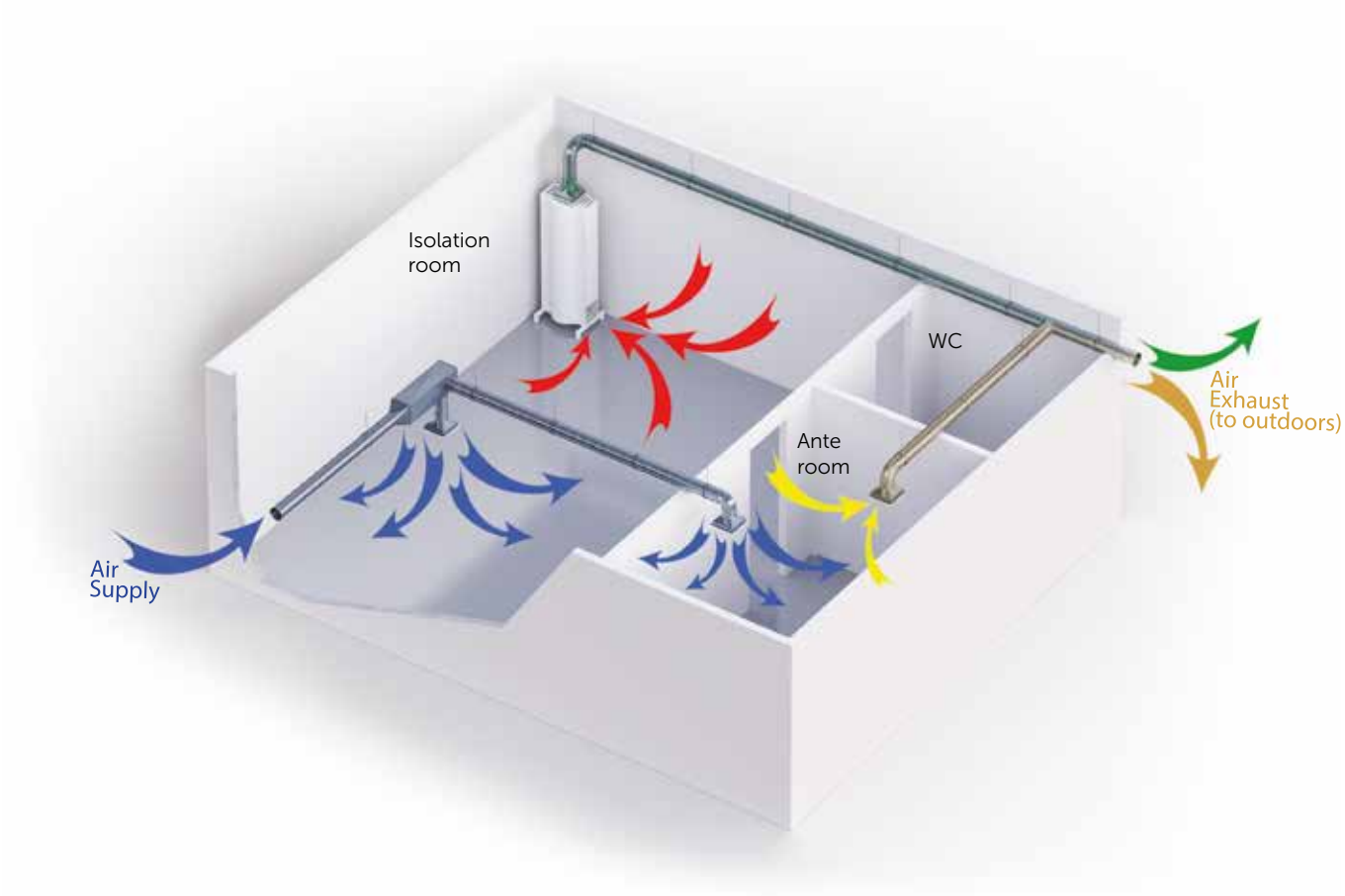


Air Balancing

Air balancing to be done on the VAV's, to achieve a minimum of 2.5 Pa differential pressure between the outside corridor (reference) and the inside of the room.

Contaminated air is cleaned through the Genano unit and exhausted out of the building.

The only exhaust to be installed inside the room is the Genano unit.

- No exhaust diffusers
- Ceiling to be completely sealed (no tiles)
- Doors between the corridor and the room to be completely sealed

Isolation facilities include the following types

1. Negative pressure room, where others are protected from any airborne transmission from a patient who may be an infection risk, Class N
2. Negative pressure room with additional barriers including an anteroom, also known as Class Q for quarantine isolation.
3. Normal rooms can also be transformed into Isolation rooms if the air is duly filtered and dispatched outdoors.

Most common parameters to be monitored in these rooms:

- Differential Pressure (0.03 WC) – between the isolation room and the area to be protected (ex.: corridor)
- ACH – Air Changes per Hour inside the room (isolation ACH 12)

Critical points when creating an Isolation Room:

1. Installing a Filtering Unit on the extract
2. Be certain that the air is being extracted outdoors and not recirculated
3. Air Balancing – create negative pressure inside the room
4. Room Pressure and ACH monitor

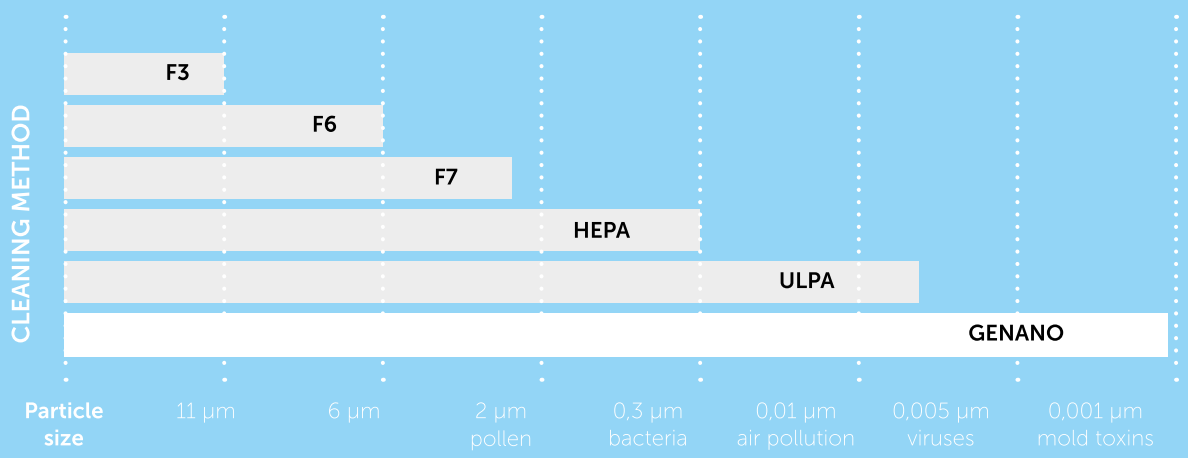
Turn Key Solution for Isolation Rooms

Installing a Filtering Unit on the extract

1. Genano 5250 – 500 m^3/h (all rooms)
2. Genano Tube XS – 300 m^3/h (option for small rooms up to 25 m^3)

Genano's patented electric air purification method purifies indoor air even of nanoscale impurities. The method eliminates organic microbes, such as viruses, bacteria and mold. In addition, the method removes dangerous VOCs and smells.

All these units have an extremely low-cost maintenance when compared to HEPA filtration units. Efficiency is their biggest advantage as you can see below:



Isolation Room Concept – Genano's Turn Key Solution for hospitals

"Public health experts say it's not a matter of IF a flu pandemic will happen, but WHEN. It is essential to be prepared."

Prevention

Biorisk reduction combines expertise and advice on high-consequence pathogens with guidance and training on safe handling and control of disease agents that pose significant health risks, with potential for adverse economic impact and public concern.

The goal of biorisk reduction is to ensure that current scientific knowledge regarding viral hemorrhagic fevers, epidemic-prone orthopoxviruses, and emerging severe zoonotic diseases affecting humans, is maintained in order to apply the most appropriate guidance for treatment, control, and safety to mitigate the risks regardless of the source of the disease event.

"... one of the main concerns is the ability to isolate the disease or the infected patients. This can be achieved by having Isolation Rooms, ..."

As part of biorisk prevention procedures, one of the main concerns is the ability to isolate the disease or the infected patients. This can be achieved by having Isolation Rooms, where the exhausted air is not recirculated but instead first filtered and then directed outside the premises.

References in Saudi Arabia

Al Ahsa Central Hospital, Dammam Central Hospital,
Dhahran Eye Hospital, Dhahran General hospital,
Mohamed Ben Naser Jazan, Omran hospital,
Prince Sultan Cardiac Centre Madinah,
Prince Sultan Military Hospital Madina,
Qatif Central Hospital, Saad Hospital