



## *Energy Efficient Buildings - Healthy People*

# The role of HVAC technologies and building controls in maintaining stable IAQ

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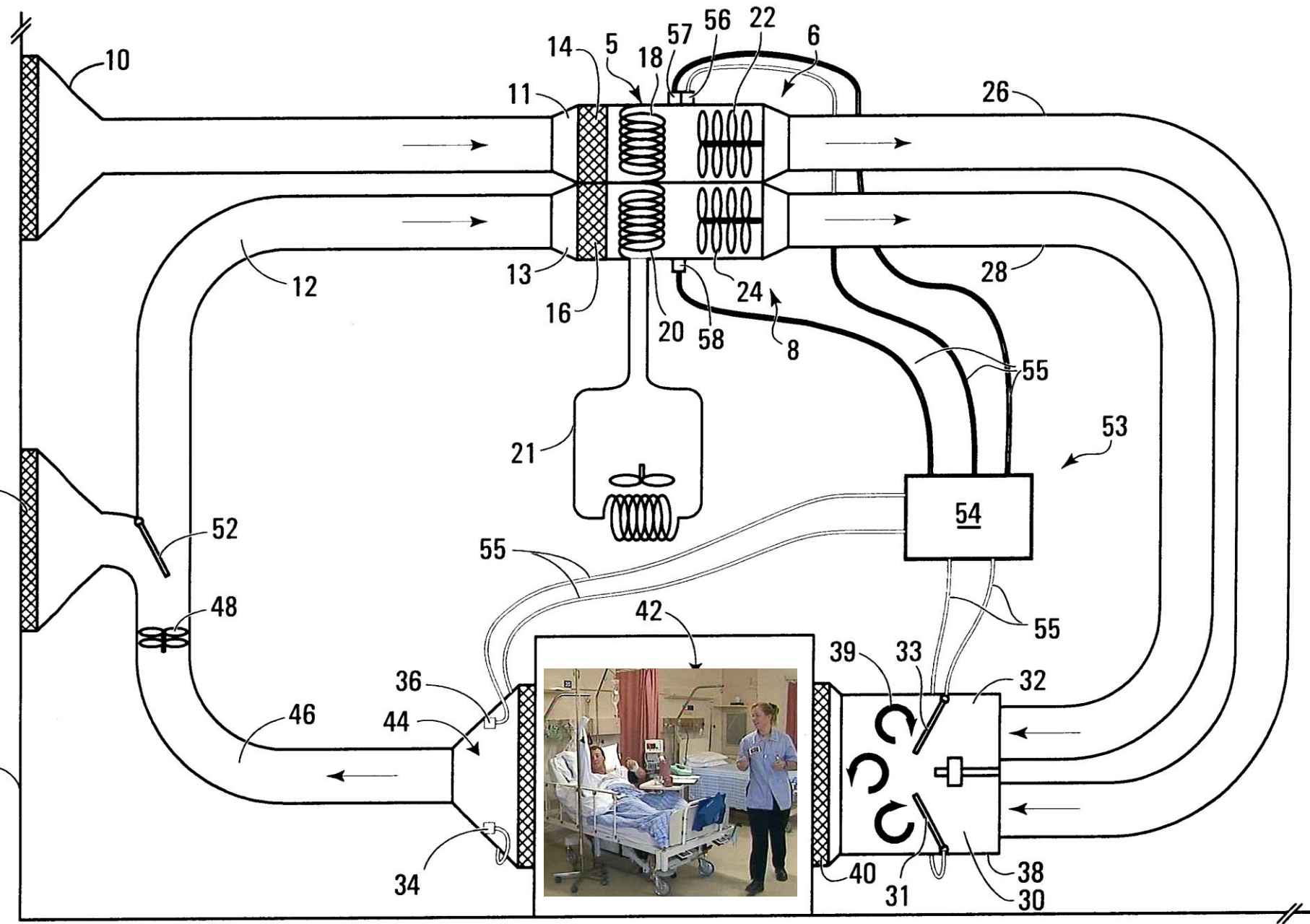


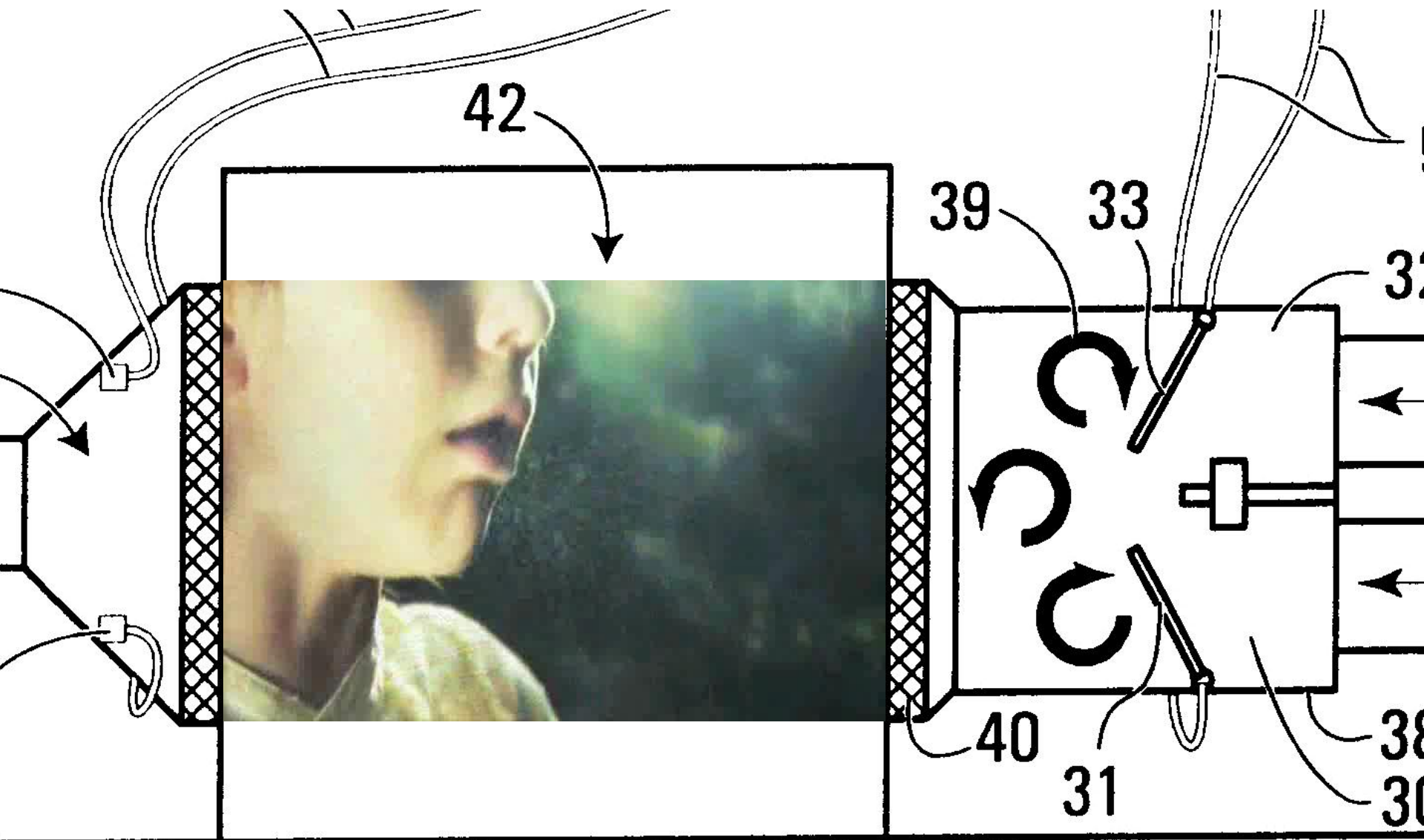
**EPEE / Eurovent / REHVA conference**

Brussels

20 June 2012





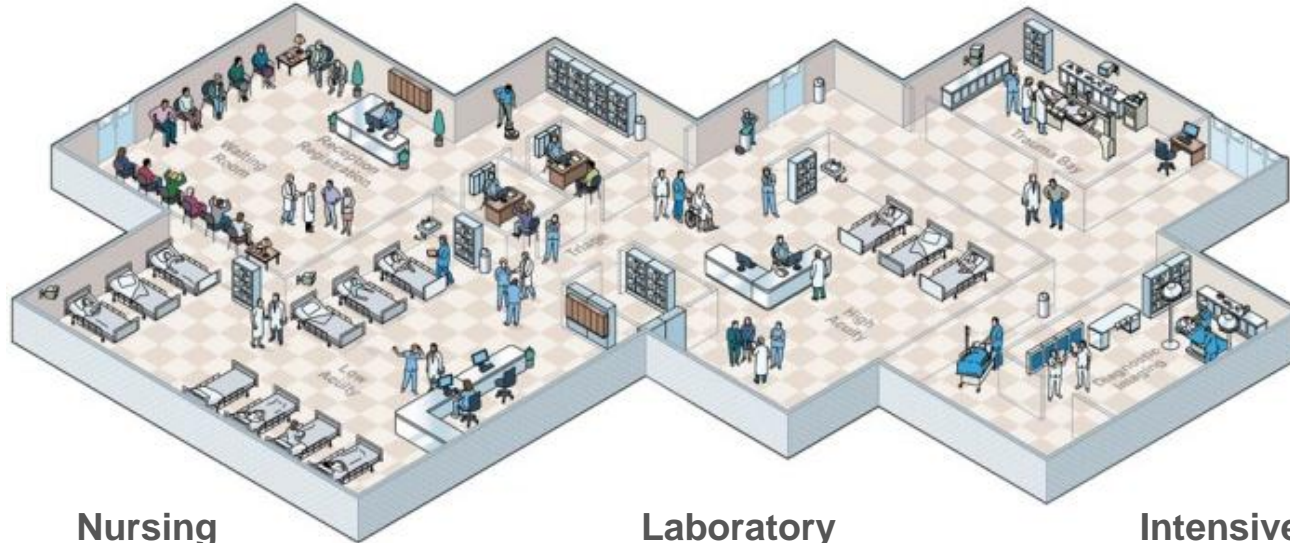


# Example: Healthcare Delivery



Office facilities  
21°C, 12 air changes/hr  
neutral pressure

Operating rooms  
20°C, 25 air changes /hr  
positive pressure



Nursing  
24°C, 6 air changes/ hr  
positive pressure

Laboratory  
21°C, 6 air changes/hr  
negative pressure

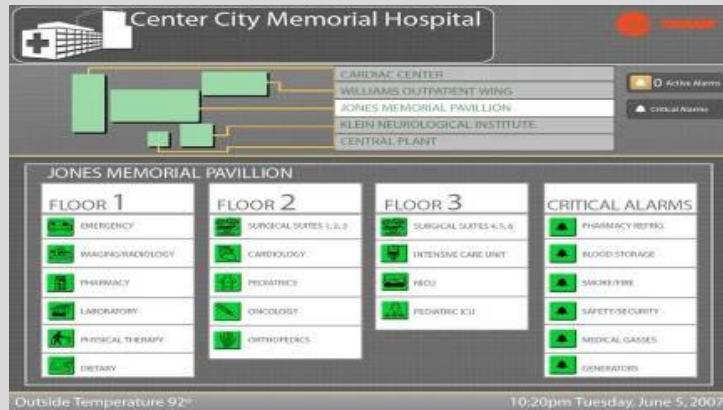
Intensive care  
24°C, 6 air changes/ hr  
positive pressure

Design sophistication is needed to maintain precise environmental conditions

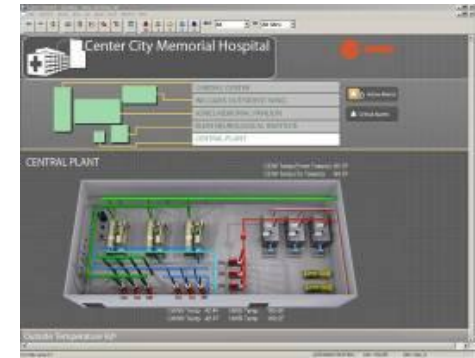
# Controlling the Healthcare Environment



Monitor  
technical  
assets and  
operations



Healthcare Critical Systems  
Dashboard

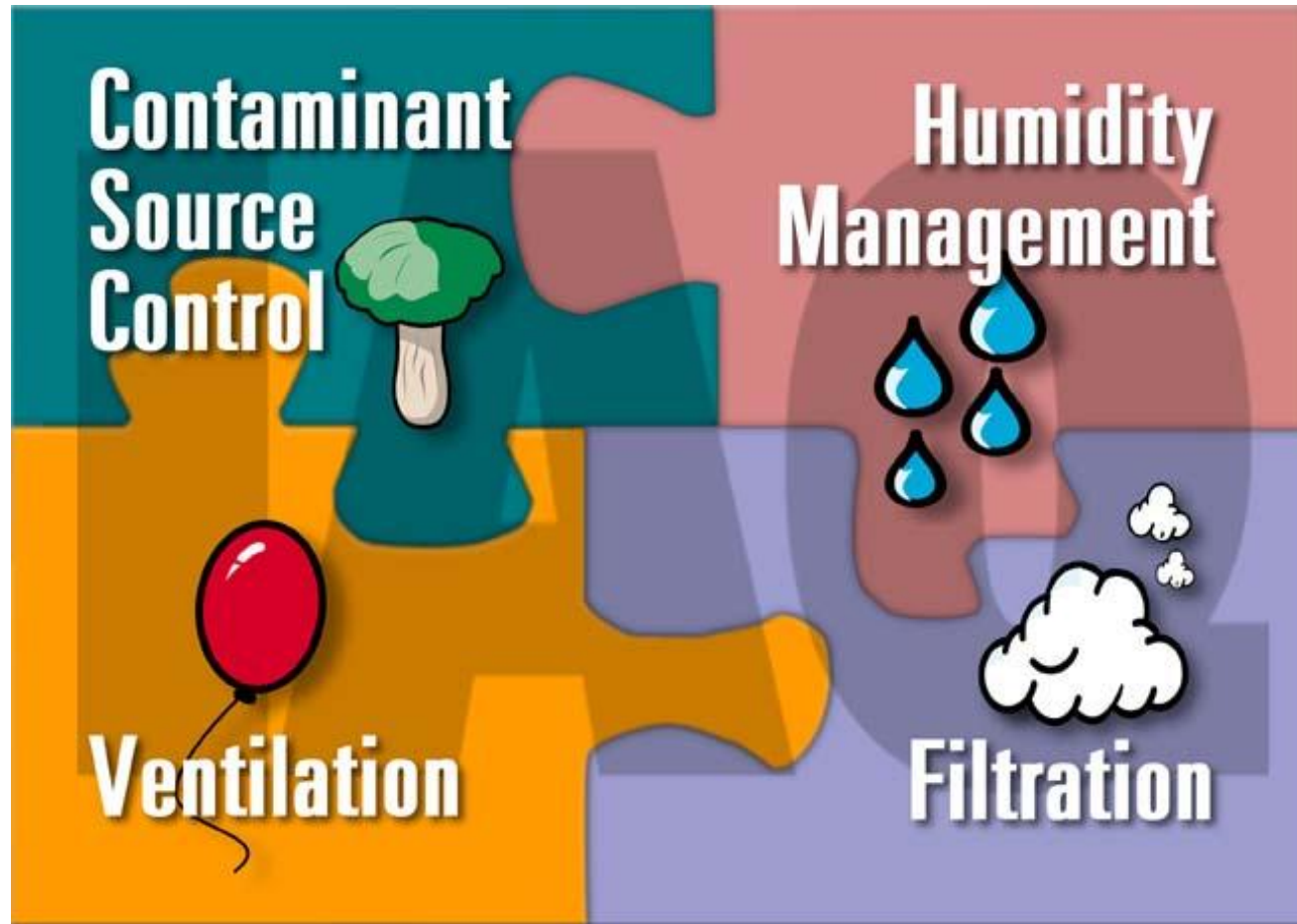


Track critical  
system  
parameters

Building Automation Systems ensure efficient operations, air quality and staff productivity



# Fundamental Elements of IAQ



*Four interdependent elements*

# Energy Management vs. Humidity Control



ASHRAE Position Paper released May 18, 2005

“Due to the proliferation of mold in buildings, sound moisture management should take precedence over energy cost savings”

Per Ron Vallort, ASHRAE President,  
“Energy conservation goals may conflict with moisture management goals”



# BIOGRAPHY & CONTACT



# My Background



- Leader for the Ingersoll Rand Climate Solutions services business in Europe, Middle East, Africa and India
- Responsible for managing the after-market service and parts, turnkey and controls contracting, and performance-based energy services businesses for commercial buildings and transportation
- **Extensive controls and service industry expertise** in HVAC, fire and security, building controls and industrial automation
- Previous leadership roles at UTC and Danaher
- Engineering degree from Delft University, MBA from INSEAD
- Based in Brussels



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