CIBSE Healthcare Group

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Friday 29 January 2021
Open discussion meeting

Operating theatres and covid-19

Chaired by Frank Mills Chair of the CIBSE Healthcare group.

This meeting will discuss how engineers can control and even 'kill' Covid in order to provide people with safer and healthier buildings.

Moderator Hywel Davies, Technical Director, CIBSE

Opening presentation by Richard Knight C.Eng., MCIBSE, FIHEEM, past Chair of CIBSE Healthcare group.
Other short presentations (2 or3 slides) will take place as members contribute during the meeting.
Members can comment and share opinions during the meeting

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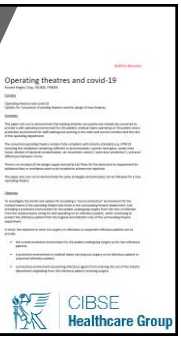
Operating Theatres and Covid-19

Options for Conversion of existing theatres and the design of new theatres

Richard Knight CEng MCIBSE FIHEEM

Team's meeting
2pm 29th January 2021



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Is there a need ?

- Through out the pandemic, and no doubt ongoing, there has been a need to carry out surgical procedures on infectious patients,
- Many operating theatres were modified for this use.

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Objectives

For infectious or suspected infectious patients provide:

- the normal protective environment for the patient undergoing surgery as for non-infectious patients,
- a protective environment to medical teams carrying out surgery on an infectious patient or suspected infectious patient,
- a protective environment preventing infectious agents from entering the rest of the theatre department originating from the infectious patient receiving surgery.

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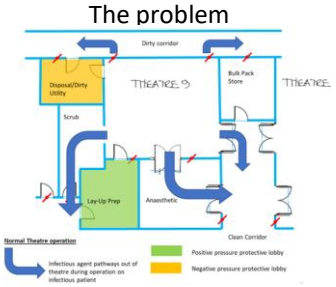
The problem



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Earlier solutions

Commonly:
Negative pressure theatres,
Neutral pressure theatres.

Common problems:
Reduced supply air or no supply air, result over heating, reduced dilution, poor air flows, likely increased risk of infection, not to evidenced standards, loss of "open door" protection.

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Existing guidance

Effectively none:

- Some countries COVID-19 web guidance suggest negative pressure theatres (no discussion how to deliver),
- UK from HTM 03 “balanced flow theatres for infectious cases” then “returning to first principles”, no definition what they are,
- UK gov, use theatres as normal (dilution will reduce risk to others).

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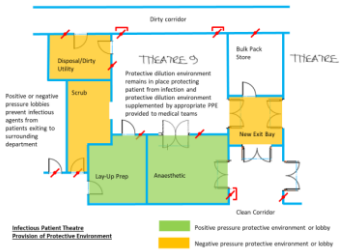
Isolation theatre (for an existing theatre)



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Is it a scalable solution? (Conversions)

- Typically, one theatre per district general hospital,
- Example selected is most common lay out,
- Examples worked out for other theatre layouts,
- Not EVERY THEATRE IS EASY TO CONVERT (but most are).

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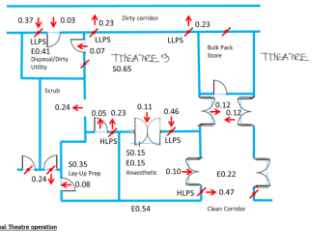
The engineering details (air flow management)

Normal operation



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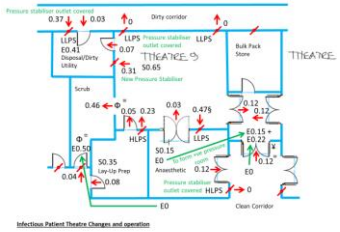
The engineering details (air flow management)

Infectious operation



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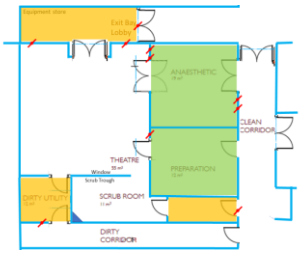
Isolation theatre, new theatre solution



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Is it a scalable solution? (new theatres)

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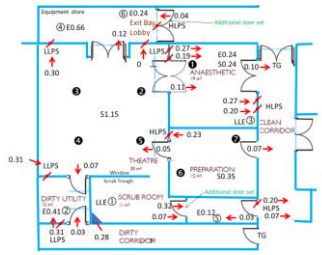
The engineering details (air flow management)

Normal operation



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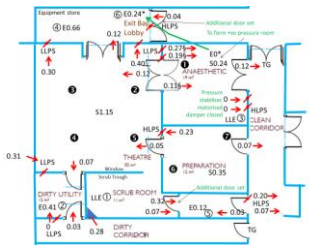
The engineering details (air flow management)

Infectious operation



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Conclusion

- A scalable solution,
- Simple conversion,
- No increase in ventilation rates,
- Compliant with UK standards,
- Compliance no exception found for other world standards,
- Meets duty of care for patients, medical teams in theatre and those in “high foot fall areas” in rest of department.

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Questions & Answers

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Meeting closed

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Many thanks for your time and interest

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