



GOOD BUILDING DESIGN

PETER GREEN – RM ASSOCIATES

WHAT ARE OUR AIMS?

- TO CREATE A SAFE ENVIRONMENT TO
- PROVIDE PATIENT CARE
- TO MAINTAIN THIS OVER THE LIFE TIME OF THE BUILDING
- TO MAKE IT AS EASY AS POSSIBLE TO MAINTIAN



SAFE WATER?

Suitable to
drink?

Suitable for clinical
procedures?

Suitable for
bathing?

Bacteriologically

Scalding

SAFE WATER? DO WE HAVE ANY RULES?



KEEP HOT
WATER HOT



KEEP COLD
WATER COLD



KEEP SYSTEMS
MOVING



KEEP SYSTEMS
CLEAN

KEY CHALLENGES

- STOPPING NOSOCOMIAL LEGIONELLA INFECTION
- STOPPING SCALDING
- MINIMISING HOSPITAL ACQUIRED INFECTION
 - PSEUDOMONAS AERUGINOSA
 - STENOTROPHOMONAS MALTOPHILIA
 - CARBAPENEMASE PRODUCING ENTEROBACTERIACEAE (CPE)





WHAT DO WE WANT FROM THE END USER?

- TO **USE** THE OUTLETS WE PROVIDE
 - TOO MANY – RISK OF LOW USE INCREASING THE RISK OF BACTERIAL GROWTH
 - TOO FEW – INCREASING RISK OF POOR HAND HYGIENE INCREASING RISK OF INFECTION



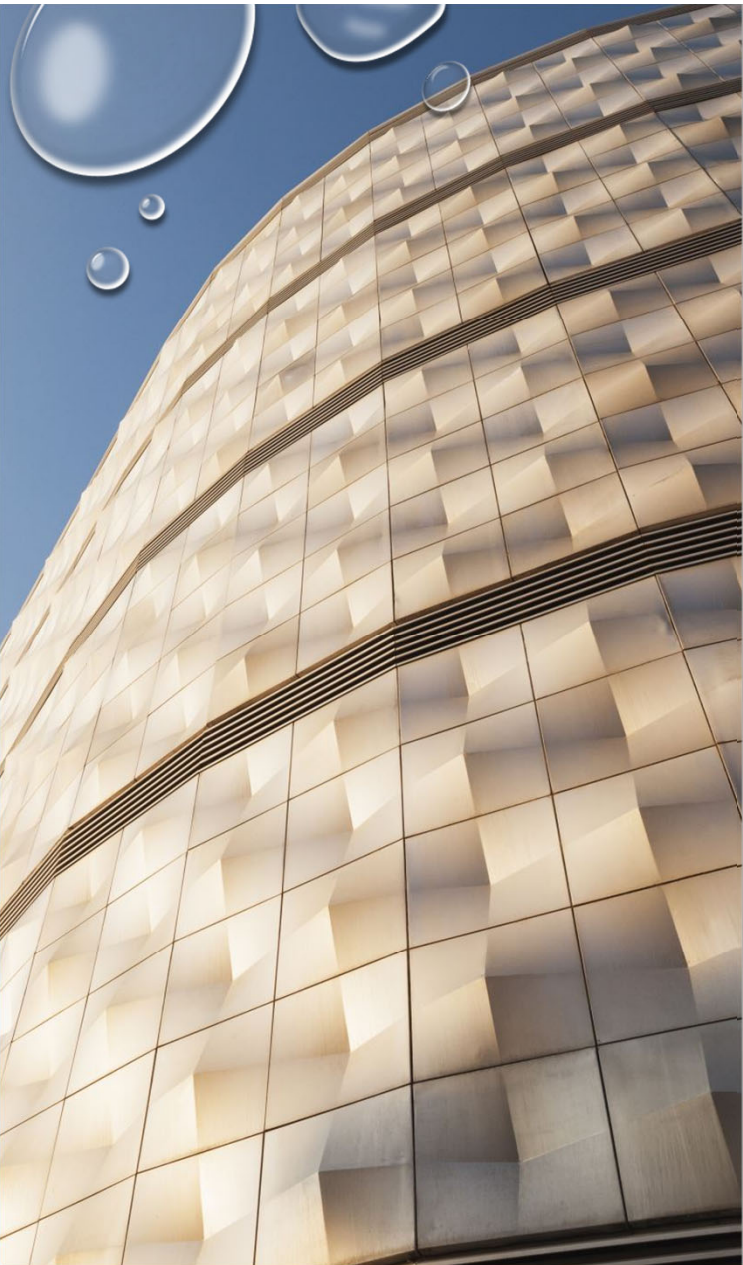
WHAT DO WE WANT FROM THE END USER?

- NOT TO CONTAMINATE THE SYSTEM
 - CREATED BY THE ENVIRONMENT AND NOT THE SYSTEM
 - POOR SHOWER POSITIONING
 - USING NON CLINICAL BASINS
 - CREATED BY CLINICAL MISUSE –
 - USING HAND WASH BASINS TO DISPOSE OF CLINICAL WASTE
 - NEED TO PROVIDE WELL POSITIONED DIRTY UTILITY



OPPORTUNITY FOR CHANGE?

- LEGIONELLA RISK EXISTS NOW IN OUR CURRENT BUILDINGS
- HOSPITAL ACQUIRED INFECTION DIRECTLY LINKED TO THE WASHING FACILITIES EXISTS IN OUR CURRENT BUILDINGS
- SCALD RISK EXISTS IN OUR CURRENT BUILDINGS



OPPORTUNITY FOR CHANGE?

- THE CURRENT DESIGN OF THE BUILDING PLAYS A SIGNIFICANT PART IN SHAPING FUTURE RISK

WHAT DO WE KNOW?

- OUR EXISTING BUILDINGS REFLECT THE UNDERSTANDING OF RISK “AT THE TIME” OF THEIR DESIGN
- DOES THIS CONTRIBUTE TO RISK? THE FACTS WOULD SUGGEST IT DOES
- HAS OUR UNDERSTANDING CHANGED?



DESIGN STANDARD IN THE UK

- HOT WATER SHOULD BE 60°C AT THE POINT OF GENERATION
- THE HOT WATER SHOULD BE CIRCULATED SO THAT
 - THE TEMPERATURES DO NOT FALL BELOW 55°C AT THE ENDS OF THE SYSTEM
 - THE CIRCULATING HOT WATER SHOULD BE TAKEN AS CLOSE TO THE POINT OF USE AS POSSIBLE





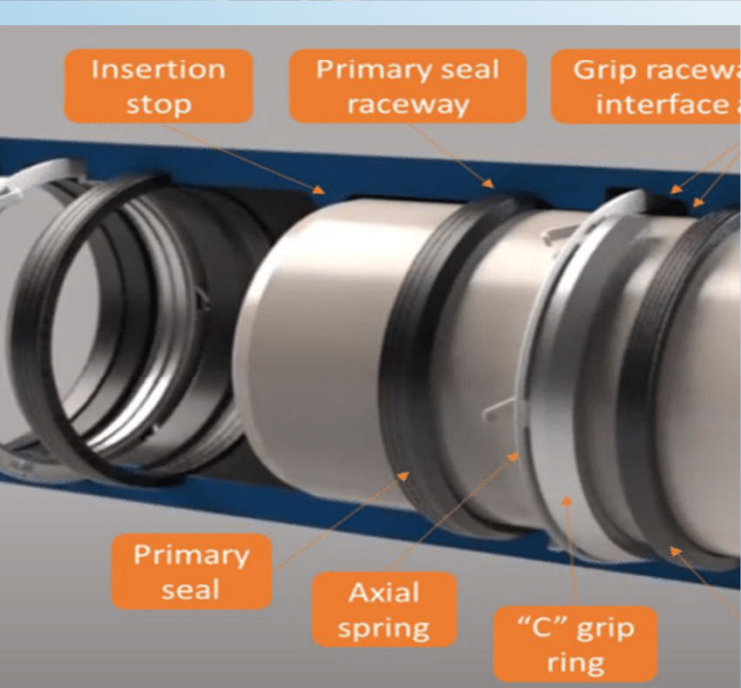
COLD WATER

- COLD WATER SYSTEMS SHOULD ALLOW NO MORE THAN 2°C RISE BETWEEN THE START AND END.
- COLD WATER STORAGE TANKS AT THE START OF THE SYSTEM SHOULD HOLD 12 HOURS STORAGE - THEIR USE CAN FORM PART OF THE HOSPITAL RESILIENCE PLAN.

The slide features a decorative background. The left side is a vertical strip with a copper-like texture and several water droplets of varying sizes. The right side is a light blue gradient with more water droplets scattered across it.

DISTRIBUTION

- WHAT MATERIAL SHOULD WE USE?
- COPPER
- STAINLESS STEEL
- PLASTICS



DISTRIBUTION

- HOW WILL WE JOIN THE PIPES?

DISTRIBUTION



Pipe runs should encourage water use



Taps and shower may need thermostatic protection to protect the end users – need for and location



All pipe work should be accessible for maintenance



All pipework should be insulated



OUTLETS

- FINAL TAP CONNECTIONS SHOULD NOT BE “FLEXIBLE HOSE”
- THE HOSE CONTAIN A SYNTHETIC MATERIAL WHICH CAN SUSTAIN BACTERIA

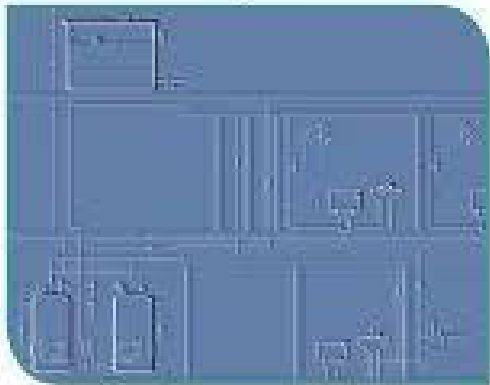
COPPER/SOLID CONNECTION SHOULD BE USED

IS THERE NEED FOR BUILDING STANDARDS IN HEALTHCARE?



Health Technical Memorandum
04-01: Safe water in healthcare
premises

Part A: Design, installation and
commissioning



- AIDS DESIGN
- BRINGS CONSISTENCY
- ALLOWS AUDITABLE SCRUTINY



ROLE OF THE WATER SAFETY GROUP--

- MULTI DISCIPLINARY REPRESENTS ALL STAKEHOLDERS
- CLINICAL END USERS
- INFECTION CONTROL
- ENGINEERING





WATER SAFETY GROUP

- NOT ALL AREAS ARE EQUAL

AUGMENTED CARE

VULNERABLE GROUPS

GENERAL CLINICAL

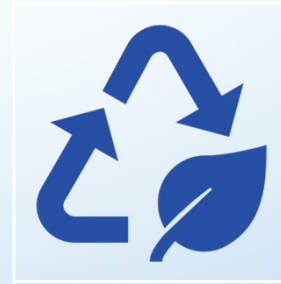
GENERAL USE

THE WATER SAFETY GROUP BRINGS LOCAL UNDERSTANDING

WATER SAFETY GROUP



Provides oversight to design principals



Brings local understanding to:

The number of outlets – the fewer the better
The need for thermostatic protection



Thank you

Any questions ?

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