

Medical
Architecture

Mental Health Design MEP Considerations

CIBSE, 10/01/2024

Ruairi Reeves



About us

Who we are

We are specialists in healthcare architecture

1. Established for 30 years
2. Developed from the Medical Architecture Research Unit
3. Research and evaluation focus
4. Offices in London and Newcastle
5. Work in the UK, Europe, Africa, North America & Australia





Medical Architecture – Senior Leadership



Ruairi Reeves

Director

- 22 years of experience healthcare design
- Architects for Health Board Member



Bob Wills

Director

- 32 years of experience as an Architect;
- 16 years in healthcare design
- Sustainability Lead



Lianne Knotts

Director

- 17 years of experience healthcare design
- Design in Mental Health Board Member



Paul Yeomans

Director

- 17 years of experience healthcare design
- Design in Mental Health Advisory Group

Current Projects

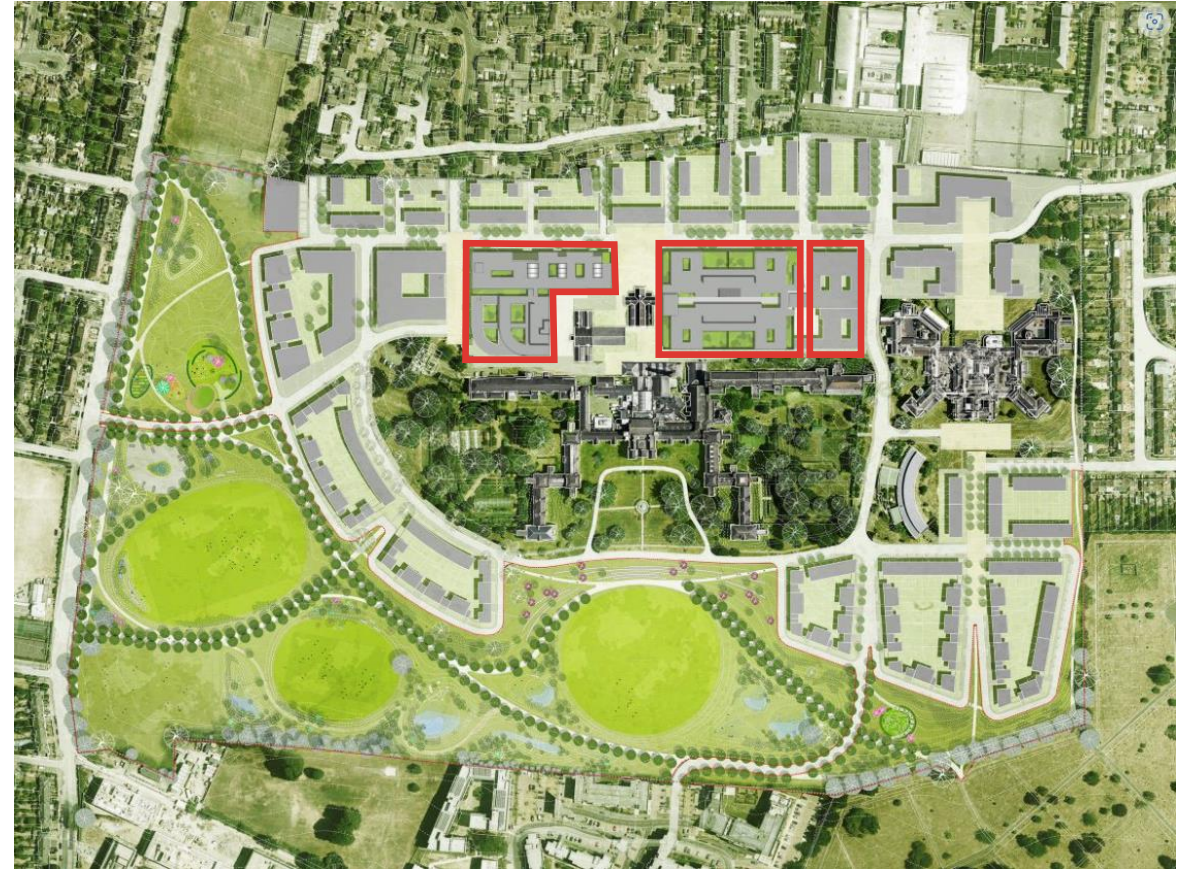
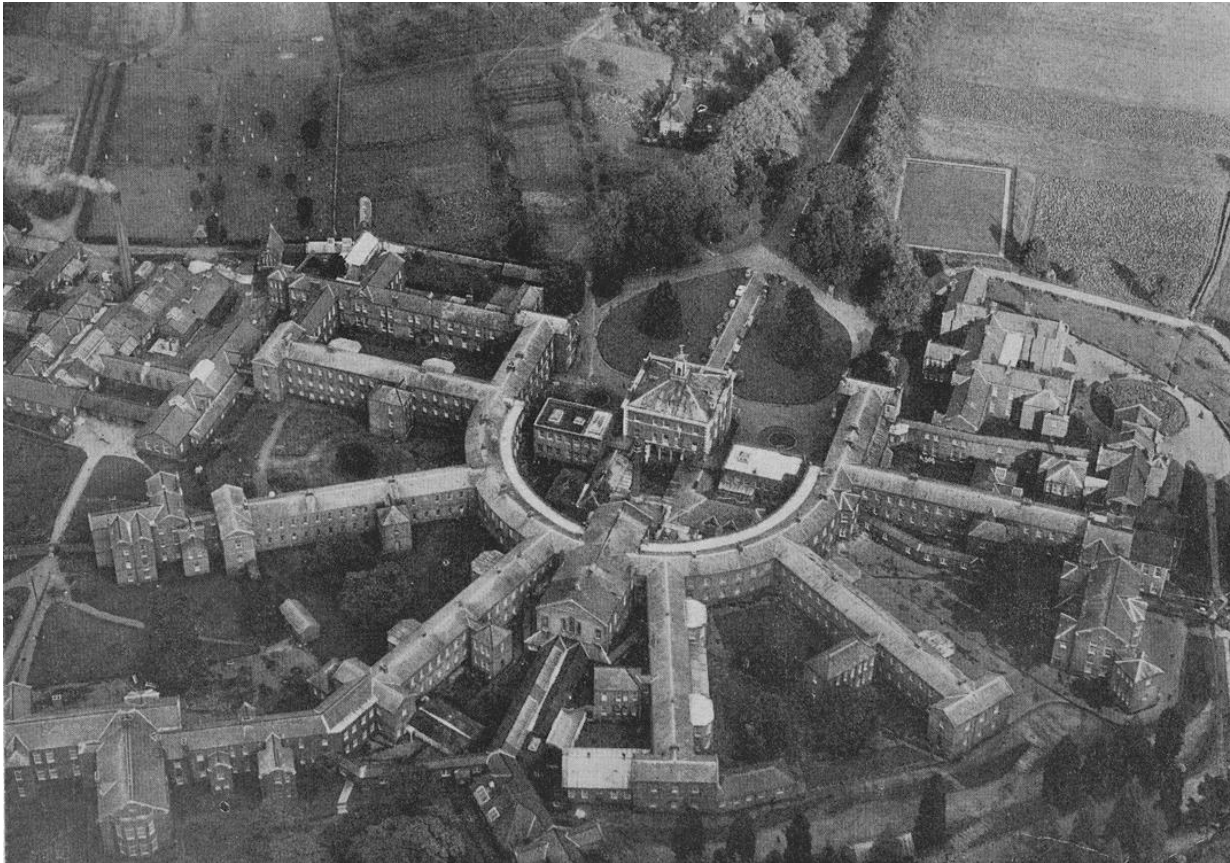


Key:
Mental Health
Acute/other

Mental Health Design: Overview

Evolving Model of Care: Setting

From Institution to Rehabilitation



Left: Devon Lunatic Asylum, 1845-1985 / Right: Springfield Hospital, South London, CF Moller / 4D Studio, 2022 (Ph 1: Medical Architecture)

Evolving Model of Care: Setting

From Institution to Rehabilitation



Left: Bethlam Hospital, A Rake's Progress, William Hogarth, 1734/ Right: Vejle Psychiatric Hospital, Denmark, Arkitema Architects, 2017

Impact of Design on *Mental Health*

60%

Reduction in
incidents of violence
NTW NHS FT

It doesn't feel like a
hospital and is a
wonderful place to
work. NTW NHS FT

A beautiful
healing building

Merseycare NHS FT

75%

Reduction in
restrictive practise
BEH NHS Trust

55% Reduction in seclusion
NTW NHS FT

A service user who never left the old building, is now engaging more, helping out and giving biscuits and at the weekend, he sat in the courtyard and shared in a BBQ sitting at a table with the others. Surrey And Borders Partnership NHS FT

Mental Health Inpatient Services

Acuity

- Acute adult (>50%)*
- Psychiatric Intensive Care
- Low secure forensic
- Medium secure forensic
- High secure forensic

Specialisms (15%)

- Autism + Learning Disabilities
- Perinatal mental health services

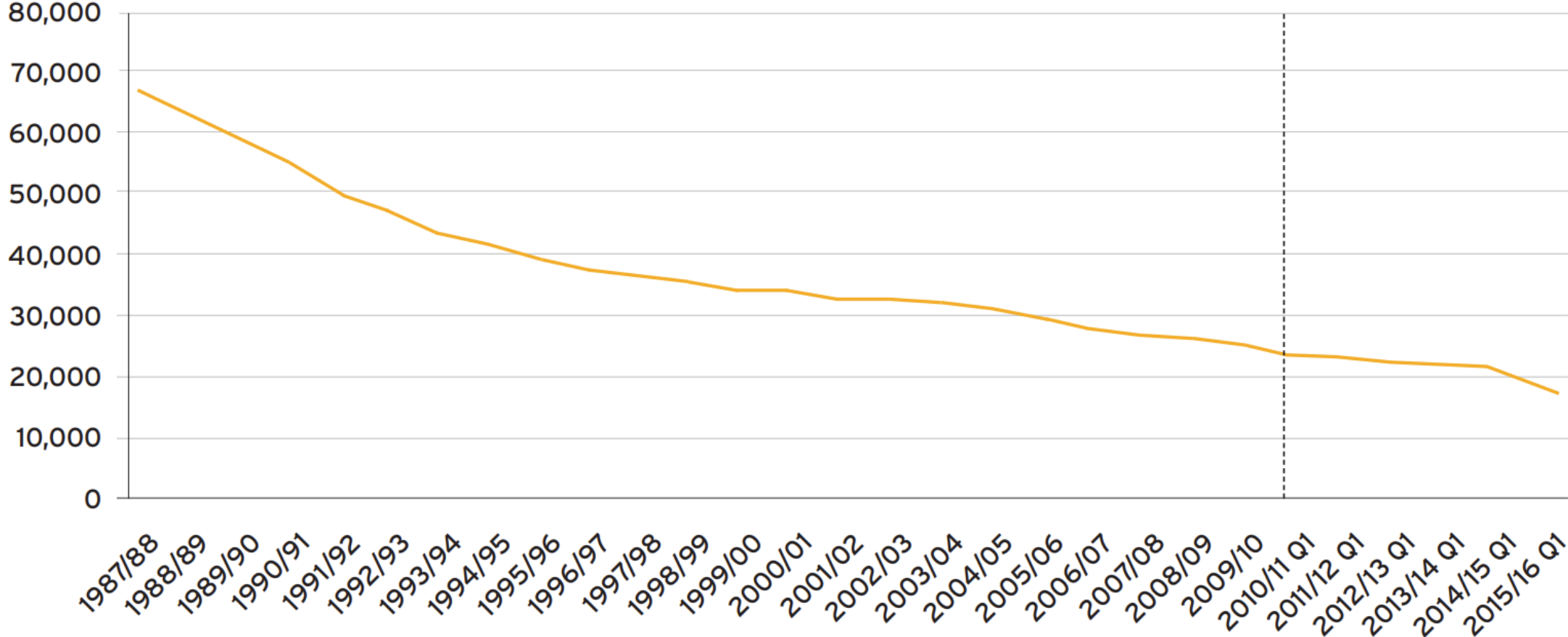
Child and Adolescent Mental Health (3%)

Older Adult (14%)

* Mean length of stay 33days, NHS Benchmarking, c/o Improving acute psychiatric care for adults in England, Royal College of Psychiatrists 2016
% Admissions: Rapid review into data on mental health inpatient settings, DoH+SC, 2023

Mental Health Inpatient Sector

Number of beds available



Source: NHS England, c/o Improving acute psychiatric care for adults in England, Royal College of Psychiatrists 2016

Compliance and Guidance

Health Building Notes

2013

2014

2015

2016

2017

2018

2019

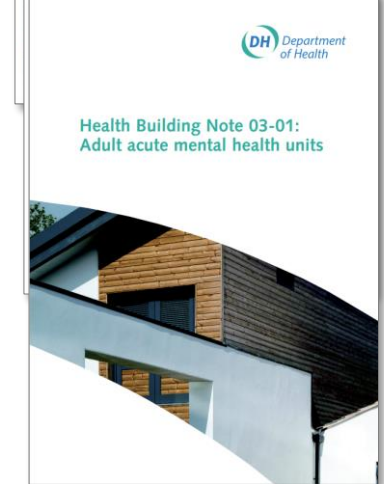
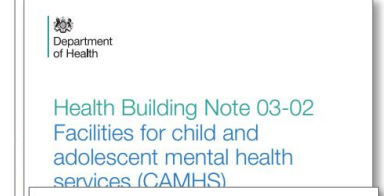
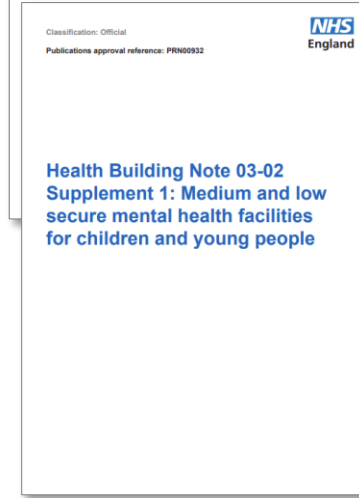
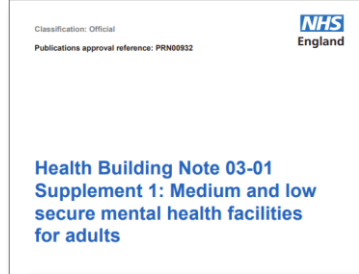
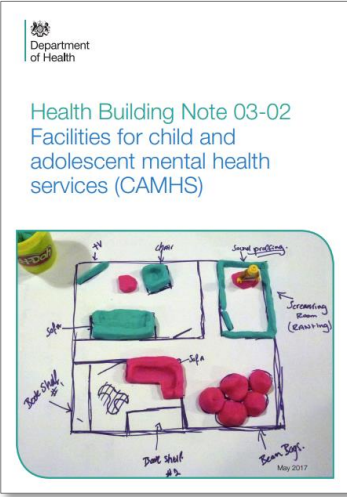
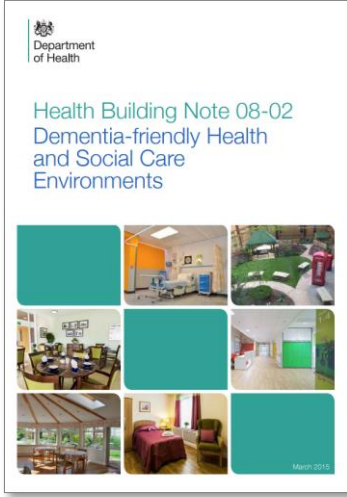
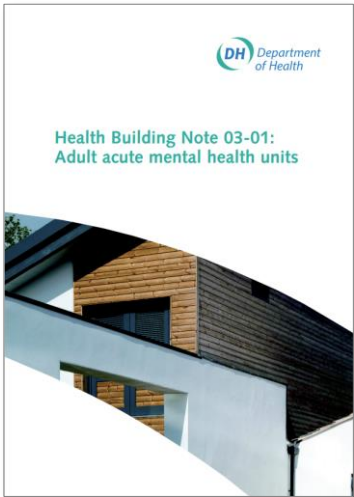
2020

2021

2022

2023

Under Review



Care Quality Commission's inspection regime

Safety

- adequate gender segregation
- ligature points removed
- declining number of nurses working in inpatient settings may be influencing the safety of care provided

Are they safe?

Safe: you are protected from abuse and avoidable harm.

Are they effective?

Effective: your care, treatment and support achieves good outcomes, helps you to maintain quality of life and is based on the best available evidence.

Are they caring?

Caring: staff involve and treat you with compassion, kindness, dignity and respect.

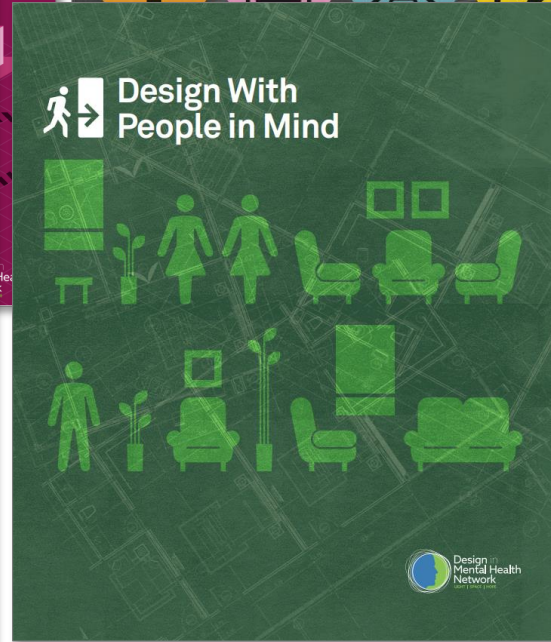
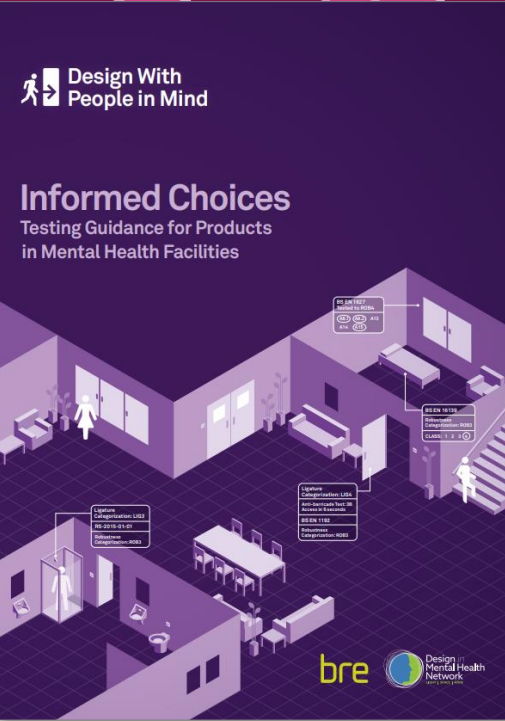
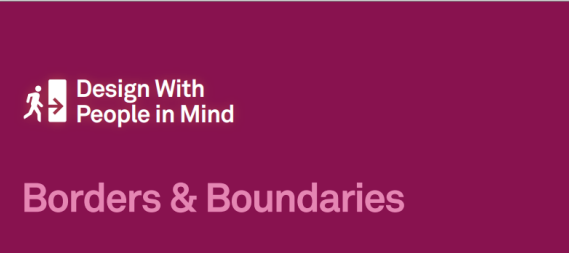
Are they responsive to people's needs?

Responsive: services are organised so that they meet your needs.

Are they well-led?

Well-led: the leadership, management and governance of the organisation make sure it's providing high-quality care that's based around your individual needs, that it encourages learning and innovation, and that it promotes an open and fair culture.

Further Guidance



Functional Requirements

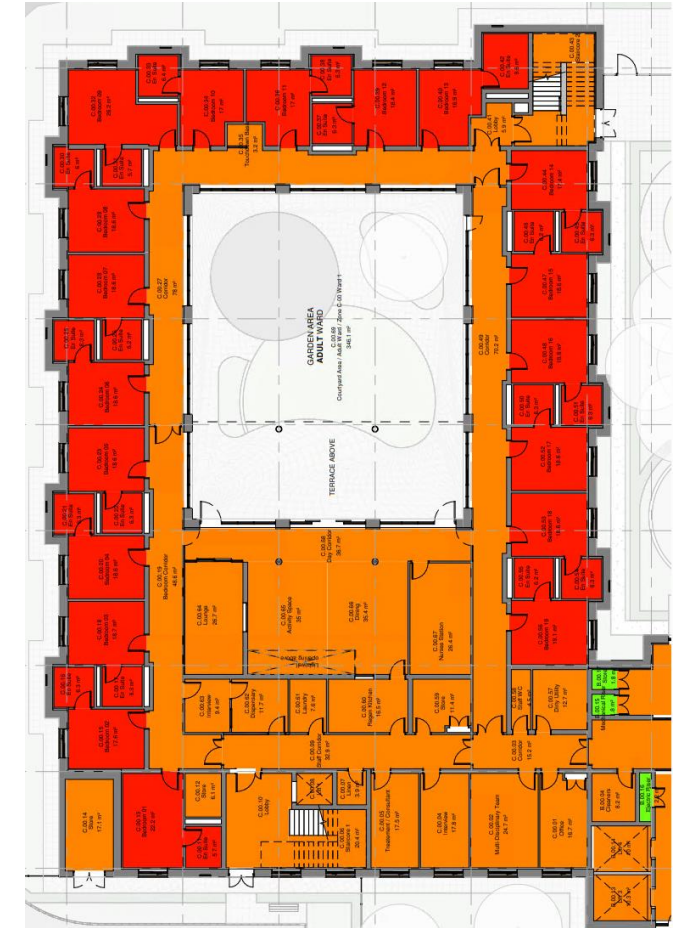
Safety

Suicide

- Ligature

Self-harm / Danger to others

- Weaponised environment
- Corridor dead-ends
- Barricading doors.



70 deaths/year in mental health inpatient care.

Source: National Confidential Inquiry into Suicide and Safety in Mental Health, The University of Manchester, 2023

Observation




Robustness and Testing




Environmental Design Guide Adult Medium Secure Services

The following table is only intended as a guide to key components and elements. A specific testing regime identifying design specific risk elements should be developed early in planning.


Element	Detail	Test level	Additional guidance
Door	Hinges	1	Check for captive pins
	Vision panels	1 + 2	Check method of fixing
Doorframe			
Door and frame			
Window			
Skirting			
Ceiling			
Light fittings			
Electrical accessories/ smoke detectors/CCTV			
Radiators and radiant panels			
Shower			
Sanitary ware			





Environmental Design Guide
Adult Medium Secure Services


Design With People in Mind

Informed Choices
Testing Guidance for Products in Mental Health Facilities



Specialised Fixtures and Fittings



DVS Washroom Control System



Intastop Door Top Alarm



Design Plan RDL Ceiling recessed round fitting



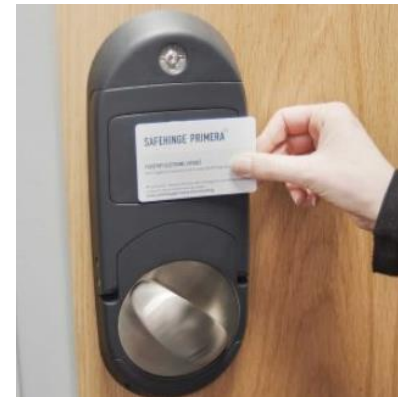
Hoyles Press to Reset



DVS High Security WC pan



Powerlite Stronghold Anti-Ligature Wall & Ceiling Luminaire



Safehinge Primera Integrated Override Lockset



Sdals Anti-ligature smoke detector

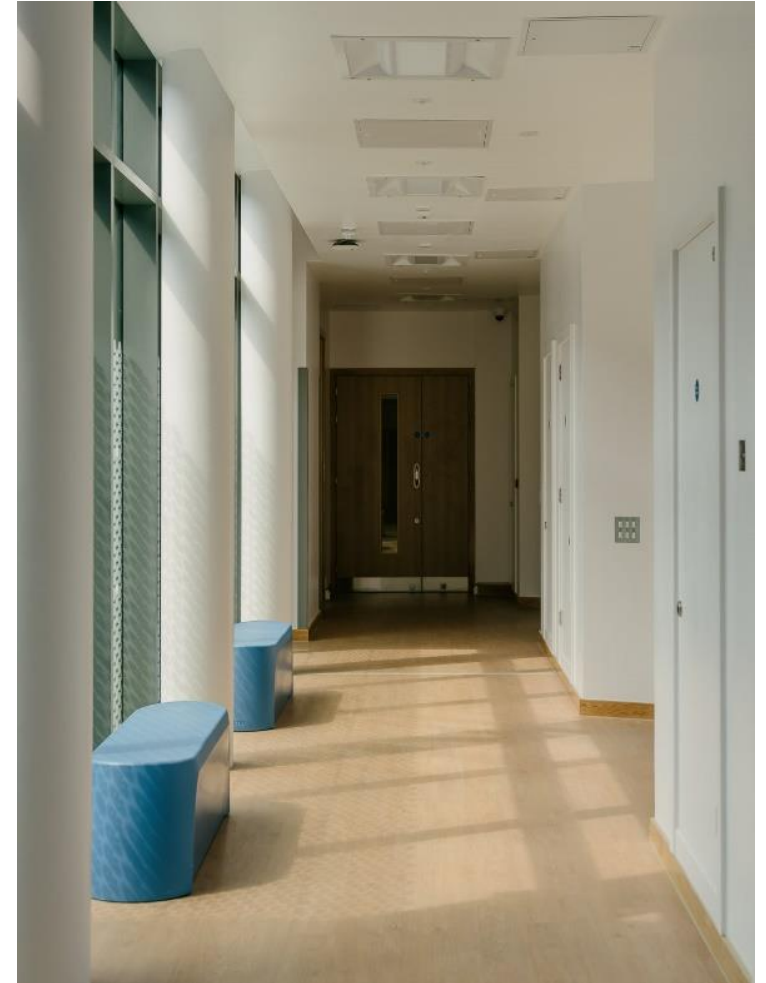
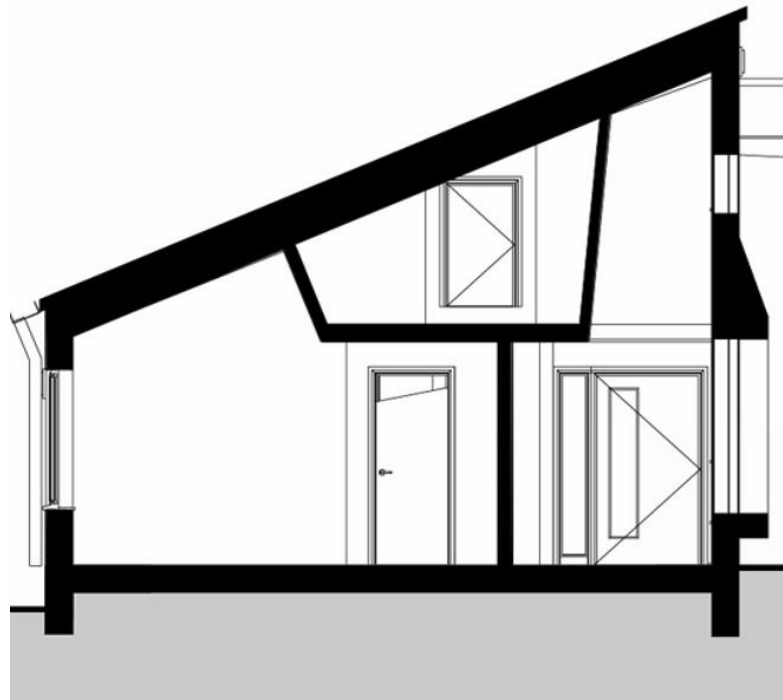
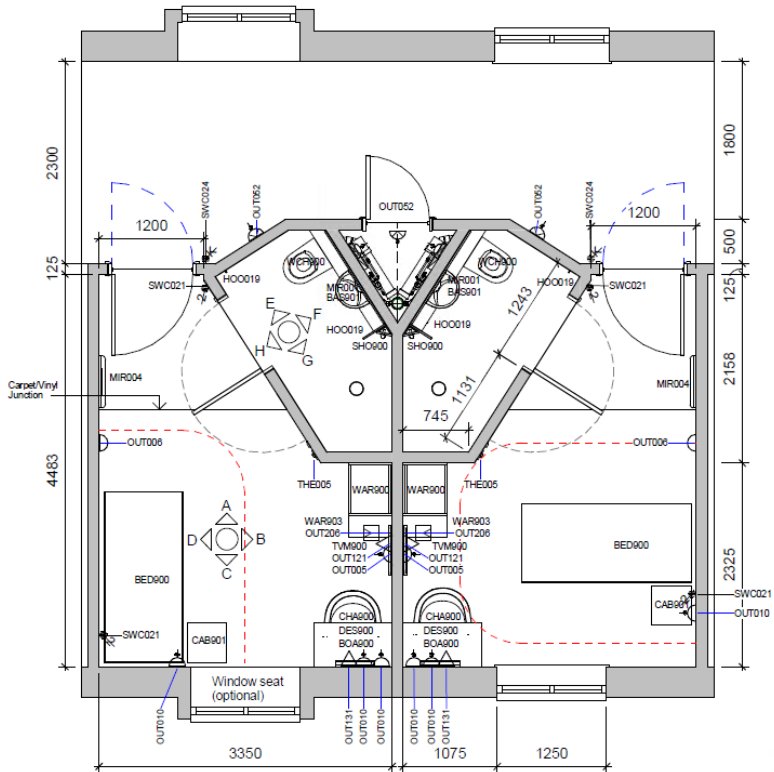
Security

Integration



Works efficiently + effectively

Discrete Access and Maintenance



Creating a Therapeutic Environment

Daylight



Views and connection to the outside



Privacy and dignity



- 1. Shared central entrance, stairs and lift
- 2. Discrete entrance
- 3. Ward entrance and ward office
- 4. Ward support spaces
- 5. Ward day space
- 6. Bedroom
- 7. Ward courtyard
- 8. Central garden



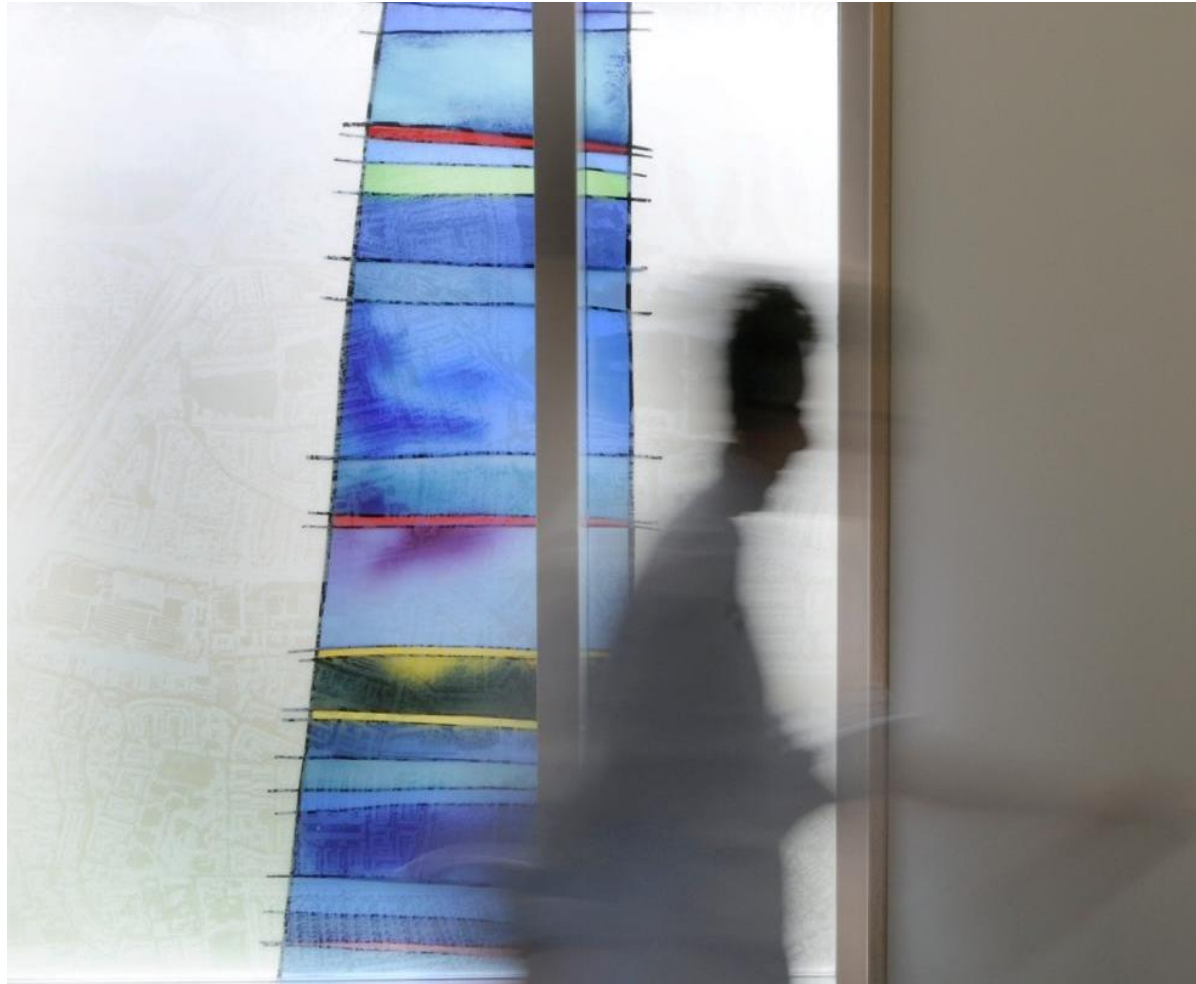
Feeling valued

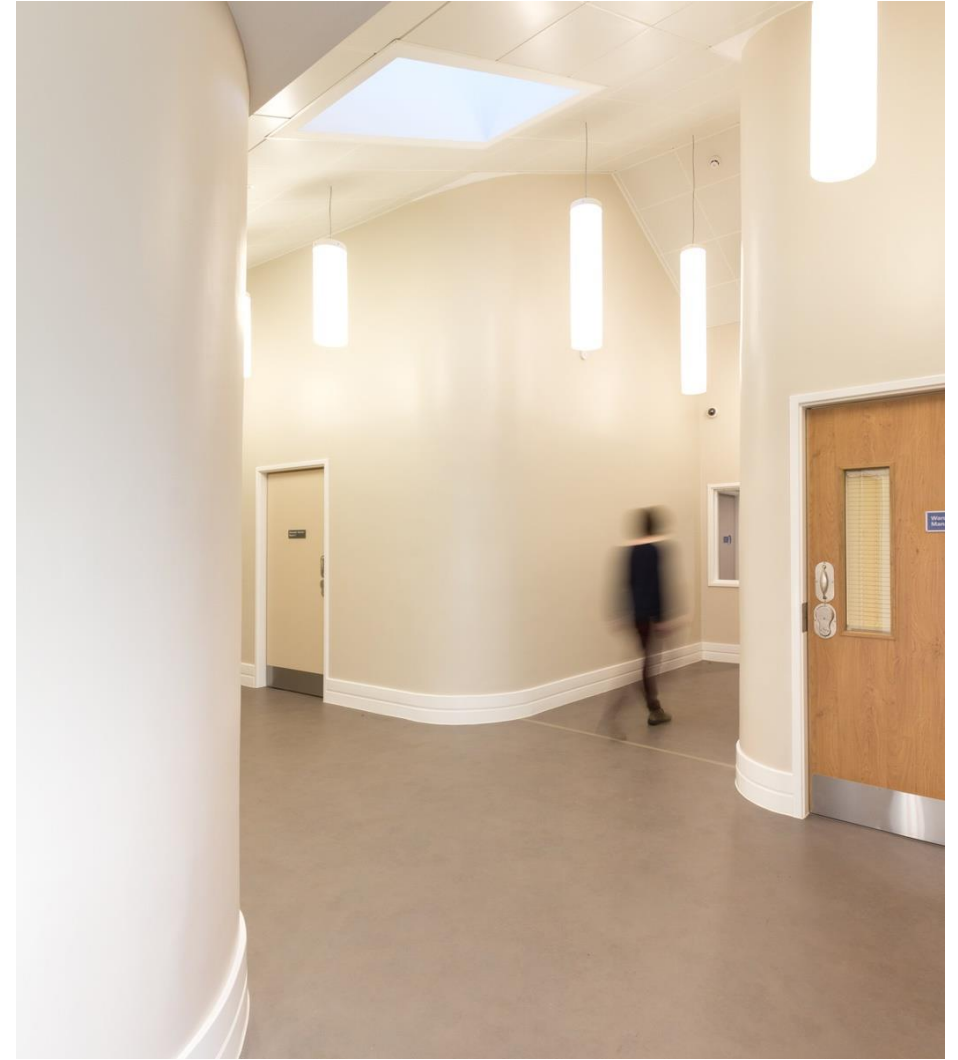


Calmness and Contemplation



8. Sensory stimulation



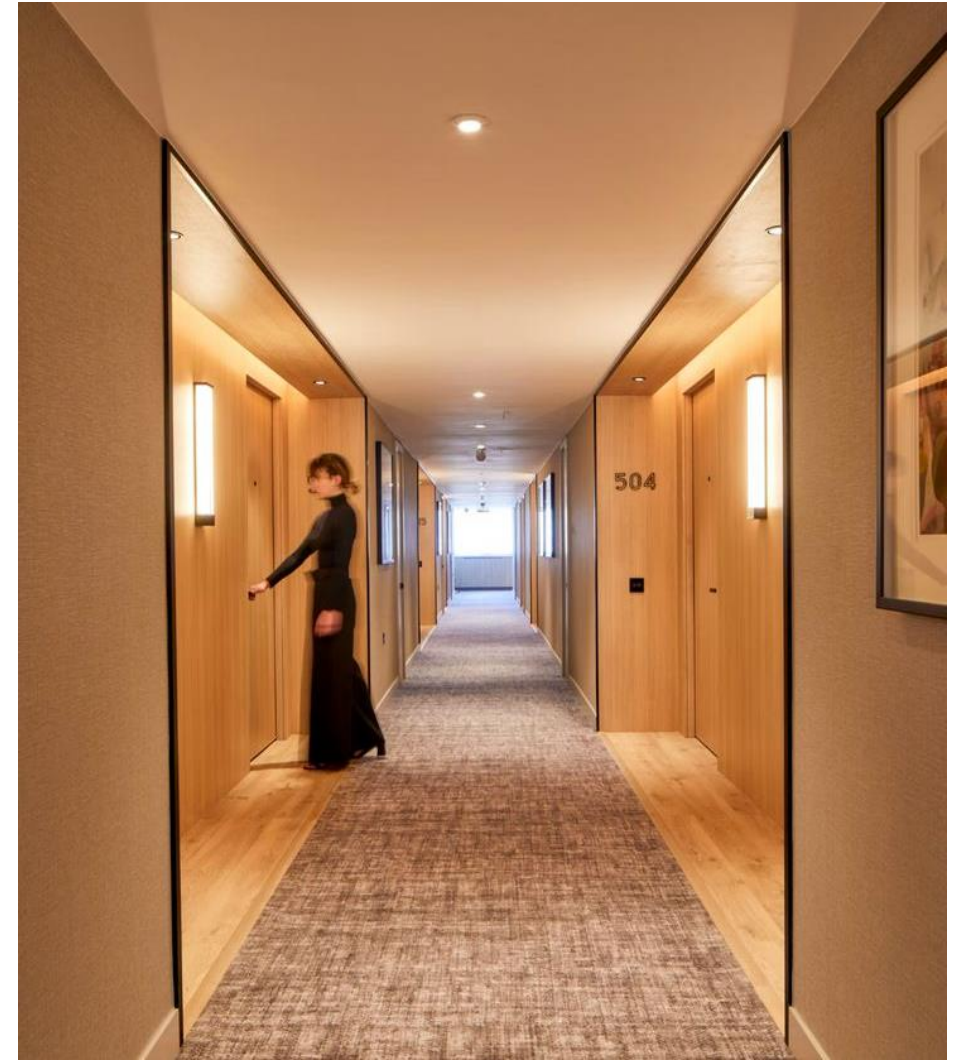


Mitford Adult Autism Unit | Northumberland

Patient autonomy



Opportunities for improving patient experience and reducing anxiety



Lighting that does more than illuminate? | Prestwick Hospital, ASD Lighting / Nobu Hotel, Make Architects

Acoustics

Providing Good Sound and Acoustics

Eliminating unwanted noise

- Alarms from doors being held open
- Fire alarms
- Slam of mag-locks

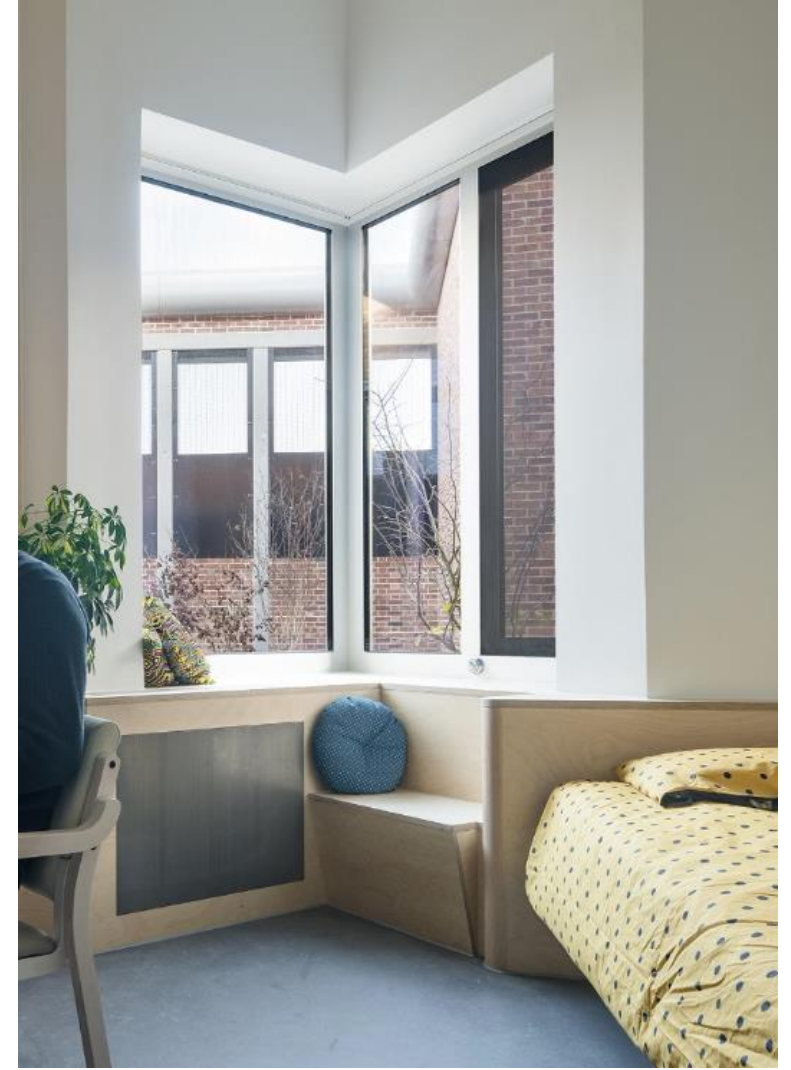
Reducing noise

- Background noise
- Creating white noise

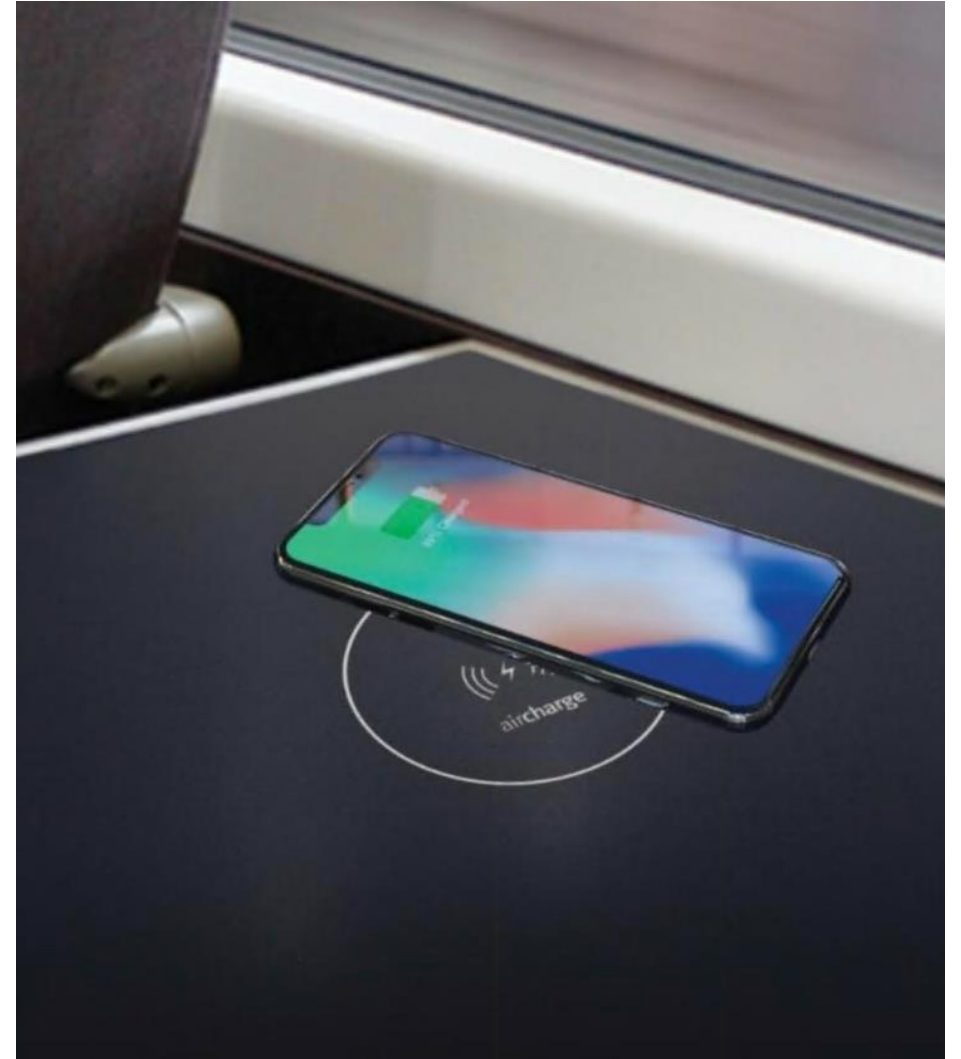
Improving sound

- Muffled speakers in TV





Heating challenges | Underfloor Heating / Radiant Ceiling panels, Broadmoor Hospital, Gilling Dodd and Oxford Architects / Radiant panels, Springfield Hospital, CF Moller Architects



Integrating technology | Patient phone charging

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Thank you

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