



Ultra Efficiency Lighting for Future Wards
How public procurement can stimulate innovation
View from the supply chain

Rotherham NHS Foundation Trust
Steph Holmes

Integrated Medical Interiors
Andrew Bissell



IMI – From Concept to Prototype

- The procurement process and how it stimulated innovation
- How we as suppliers responded
- The innovative solution



A Proactive Approach to Procurement Ultra Efficient Lighting Solution for Future Wards

The Rotherham NHS Foundation Trust, England



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The Rotherham NHS
Foundation Trust,
England

A 500 bed acute
hospital in the north of
England





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The stimulus

- Began with an opportunity: complete ward refurbishment over 8 years
- Vision of the CEO: “Hospital of the Future”, “modern, hotel feel”





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The stimulus

- Current wards have poor, inefficient lighting as well as being a cluttered space, little storage
- New and emerging lighting technology were promising to be 'smart' and 'ultra efficient'
- New innovation procurement techniques offered a way to deliver a better solution
 - Forward Commitment Procurement
 - **Stimulating better, cost effective and innovative solutions**





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The first step

- Support for an ‘innovation procurement’ approach from Department of Health (DH) and Department for Business Innovation and Skills (BIS)
- CEO support and led by Director Estates and Head of Procurement
- A project team was set up, to create a vision for ‘future ward lighting’
 - Threw away the catalogues and product lists!
 - Thought in terms of the outcomes not products
 - Team encouraged to be ambitious and forward thinking
- The need was identified early
 - more than two years before it would be needed on site



The project team agreed an outcome based requirement

- “Innovative, value added, smart, ultra efficient lighting systems that can deliver the Trust’s vision for Future Ward lighting, meet the operational requirements and provide added value functionality, in a cost effective way.
- Specifically the solutions are required to:
 - deliver cost effective carbon reductions
 - provide a high quality patient centred user experience
 - provide a high quality working and clinical environment
 - maximise energy and resource efficiency, with improvements in product performance over the life of the Future Wards project, in particular in relation to energy efficiency
 - provide added value through operational benefits, such as reduced maintenance
 - meet the necessary industry lighting standards,
 - be highly controllable



The response from the supply chain?

- Enthusiastic!
- More than 40 good quality responses
- The supply chain indicated that:
 - Could achieve a step change in the energy efficiency of lighting
 - LED technology = new options e.g. ‘smart’ functionality and patient experience
 - Supply chain able to deliver complete solution
 - Intelligent control systems = benefits in functionality and energy efficiency
 - Keys to success:
 - a real procurement over a defined time
 - started early
 - used outcome based specification

“We are delighted with the level and quality of the response and encouraged by the range of products, solutions and ideas that have been suggested and believe that our requirement, although demanding, is achievable”

extract from workshop briefing



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Next step.....communication to the market

- Made sure that potential suppliers were aware of the outcomes needed
- Communicated to the supply chain in a way that demonstrated the Trusts credibility and commitment as a customer
- Developed a market sounding prospectus and invited feedback from interested parties





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Next step.....communication to the market

- Issued a Prior Information Notice in the Official Journal of the EU
- Showed that there was a wider demand in the NHS
- Forward commitment provided by the 8 year programme
- Stressed they were interested in tomorrow's technology
 - What could be achieved over the life of the Future Wards project given the right market conditions?





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Further consultation with the supply chain

- Consultation workshop in January 2009
 - 75 stakeholders
 - enabled exchange among suppliers
- Invaluable insights on:
 - Choice of lighting technology and use of control systems
 - Lighting design
 - Measuring energy efficiency
 - Future proofing
 - Optimal procurement and contract approach
 - Barriers to delivery and finding solutions



“What is great about this process is that it gives us time to plan, build consortia, and bring new solutions forward”
workshop participant



Procurement of Ultra Efficient Lighting for Future Wards

- Supply chain and stakeholder consultation led to refinement and simplification of outcome based specification:
- *Innovative, value added, smart, ultra efficient lighting systems that can deliver the Trust's vision for Future Ward lighting, meet the operational requirements and provide added value functionality, in a cost effective way.*



Procurement of Ultra Efficient Lighting for Future Wards

- The core requirement outcomes are:
 - *A step change in patient experience*
 - i.e. creating a pleasant healing environment with patients being in control of bed zone lighting levels and ambience and provide the lighting to perform clinical requirements and incorporating measures to reduce the risk of hospital acquired infections;
 - *A demonstrable step change in energy efficiency with progressive improvements* in energy efficiency and operational performance over the life of the project;
 - A fully installed, maintained and *future-ready* solution



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A ‘pro-innovation procurement strategy’ developed

- Key features:
 - Outcome based specification
 - Competitive Dialogue
 - Emphasis on innovation
 - e.g. included in the Pre-qualification Questionnaires (PQQ)
 - Demanding and committed customers
 - Forward commitment
 - over the 8 year programme
 - Balanced evaluation criteria
 - Whole life costing
 - Stimulating wider demand in NHS

““The key to success was to begin by asking for what was needed – not what we thought was available or affordable. The results have exceeded all expectations”.

John Cartwright, Director of Estates and Facilities, Rotherham NHS Foundation Trust.



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- **Benefit Realisation Forecast**
- **For example.....**
- **Future proofed**
- **Same cost as a traditional refurbishment**
- **Energy consumption saving of 30% or €5,200 per 40 beds over 10 years.**
- **Maintenance Saving of 88% or €15,400 per 40 beds over 10 years.**

“From the start we said that the solution had to be cost effective and affordable. We have not been disappointed. The outcome shows that better and more sustainable does not have to cost more”.

Steph Holmes, Head of Procurement.





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View from the supply chain and our response



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Rotherham Ultra Efficient Lighting FCP

- The Trust wish to achieve a step change in the patient experience; creating a patient centred environment.
- The Trust wish to achieve a step change in the lighting energy efficiency.
- Prepared to commit to a 7 year, 26 ward refurbishment programme.





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Rotherham Ultra Efficient Lighting FCP



Sweden

Fagerhult – Luminaires
Ecophon – Acoustic Tiles

Sweden

Lund
University,

United Kingdom

Cundall – Lighting Designers
Austin Smith Lord – Interior Designers
Wandsworth – Nurse Call Systems
Intecho – Lighting Control
Leisure Technique – Offsite Fabrication

UK

Kings College
London,
De Montfort
University,

Germany

OSRAM – LED's, Lamps, Control Gear



New SME created through the FCP process.



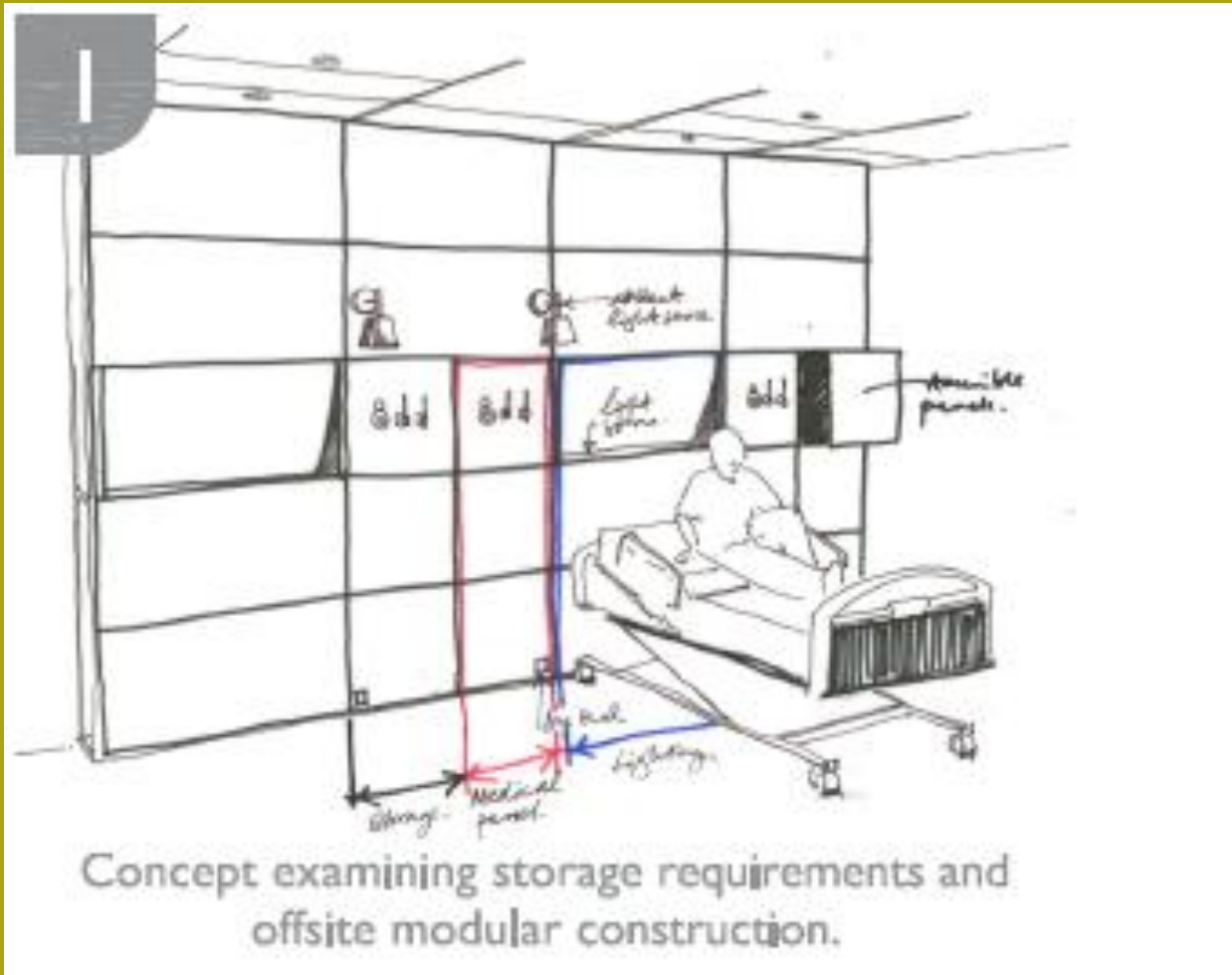
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Existing Wards

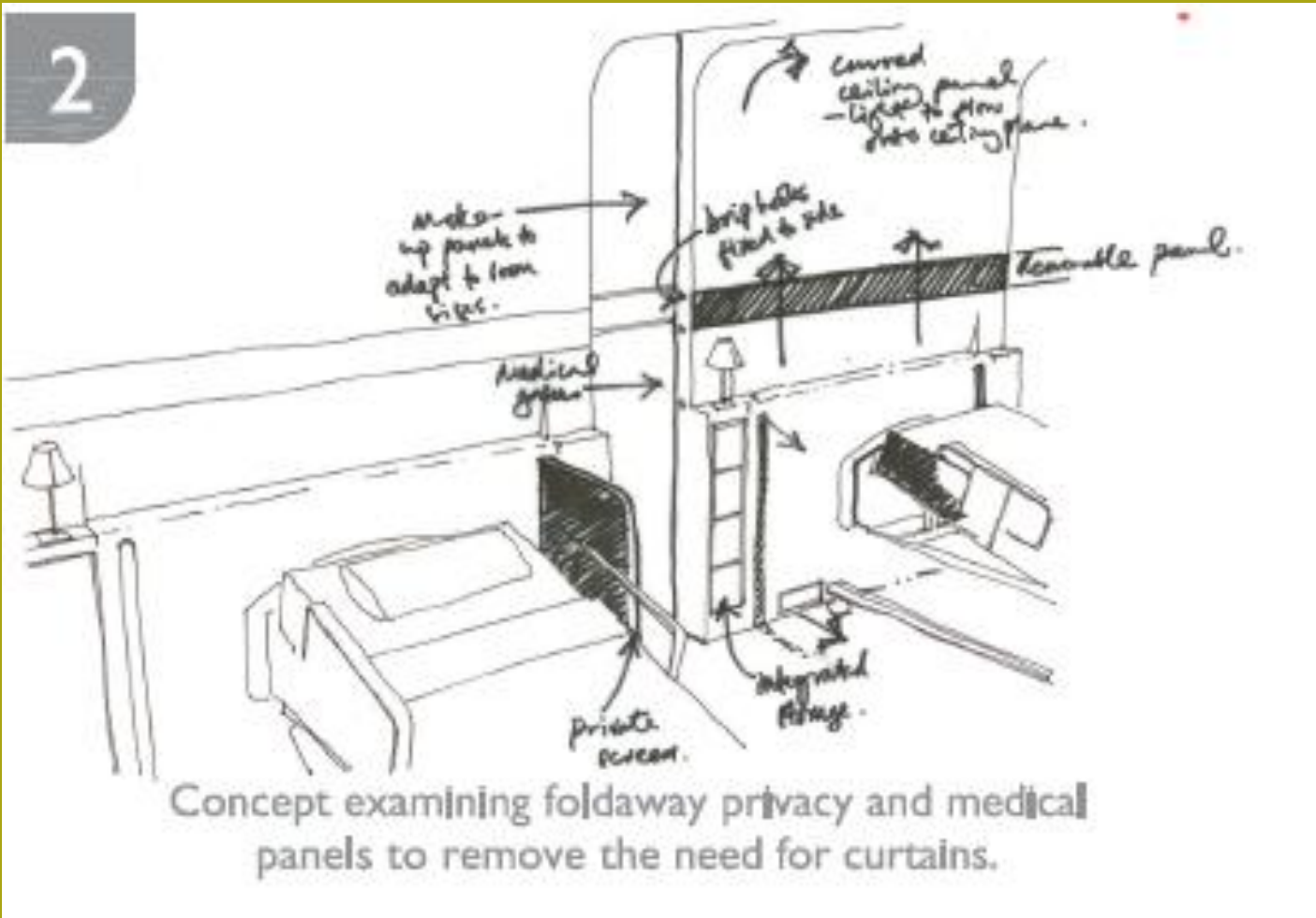


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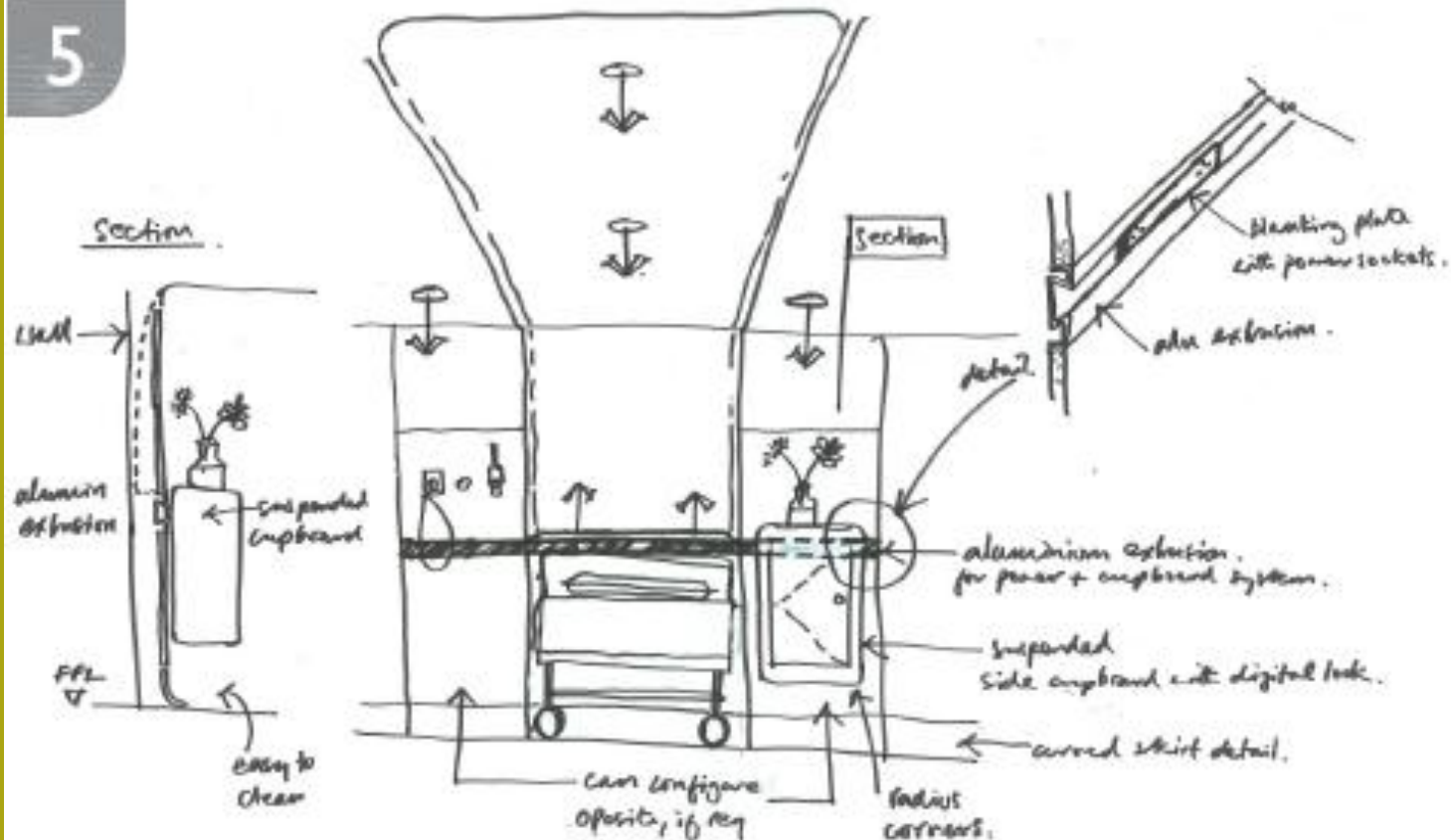


Concept examining storage requirements and offsite modular construction.

2



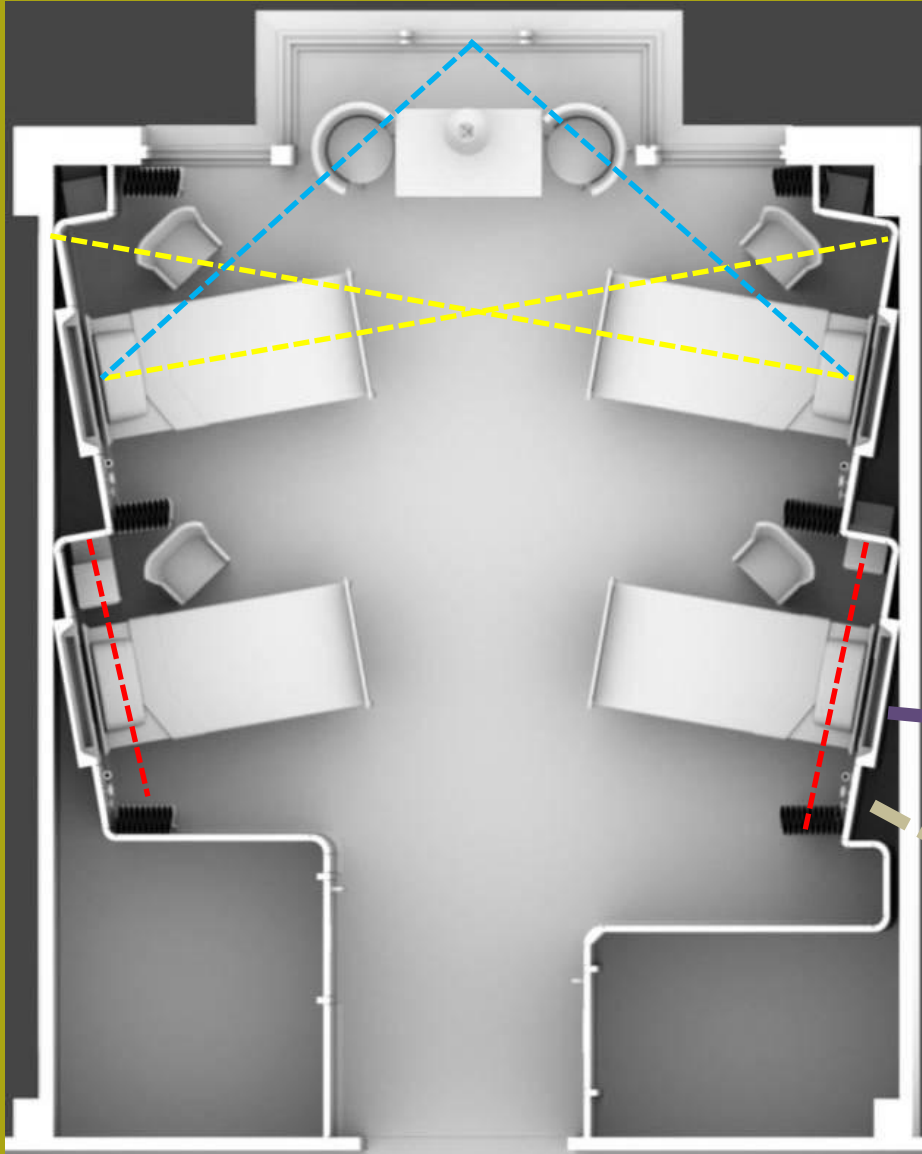
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The solution in sketch form with the visual patient environment and lighting positions shown.



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Improved View

Patients encouraged to look out of the ward.

Increased Privacy

Patients are not looking directly at one another.

Sense of Personal Space

The angled wall creates a personal patient zone

Integrated Design

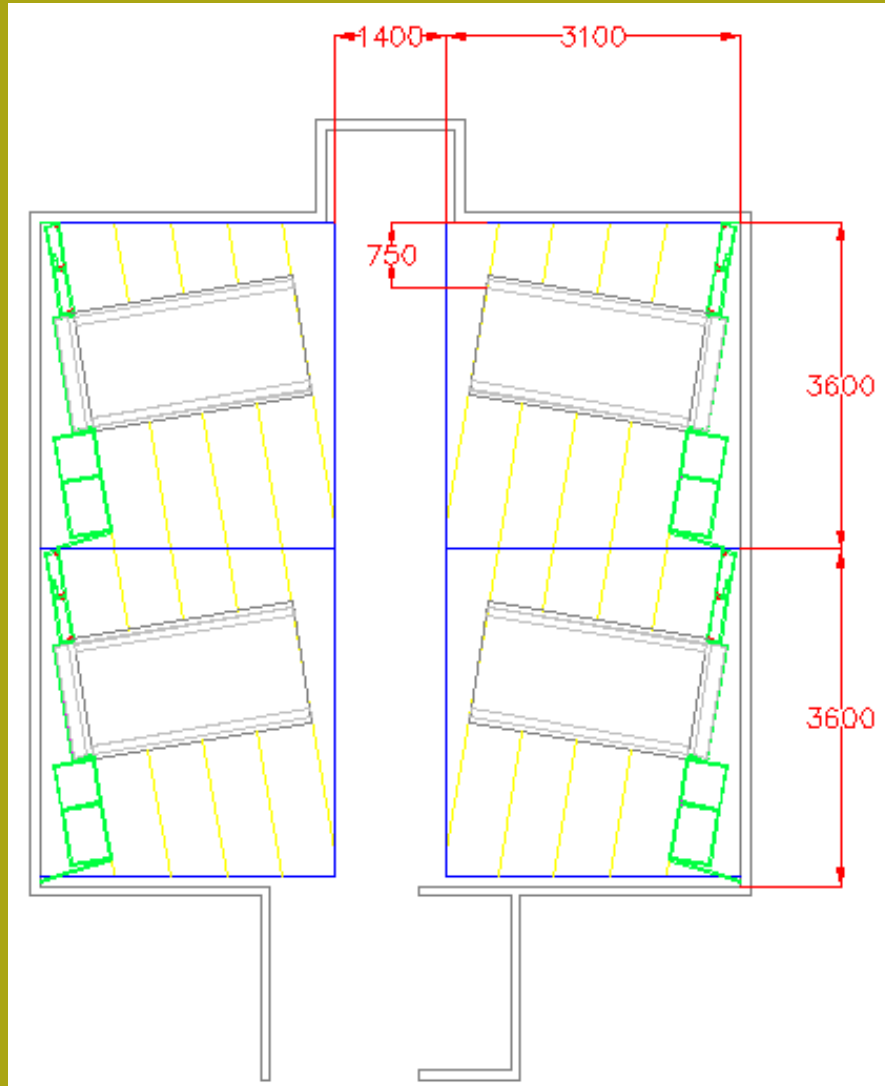
Integrated services create a relaxed hotel feel

Storage

The angled wall creates ample storage areas



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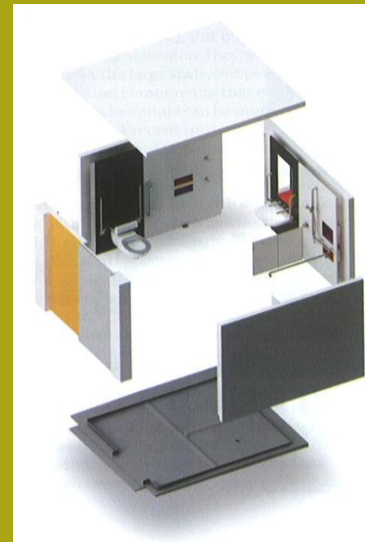
NHS Compliance

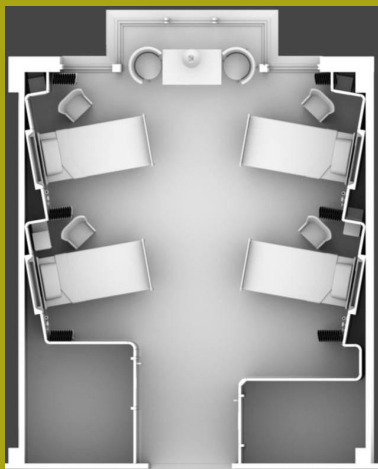
New Build at 3.6m x 3.1m

Refurbishment from 3.2m wide

Off Site Fabrication

Each pod is fabricated with all services installed off site







The IMI Ward - Design Benefits

- Personal space and privacy
- Increased storage
- Bio-dynamic lighting
- Intuitive icon lighting control
- Modular and flexible solutions

The IMI Ward - Construction Benefits

- Off-site fabrication
- Factory made quality
- Quick Installation
- Same cost as traditional
- Fewer suppliers and trades to coordinate

The IMI Ward - Operational Benefits

- Reduced patient anxiety
- Local linen storage
- Easy to clean and maintain
- Reduced energy consumption / cost
- Reduced maintenance time / cost





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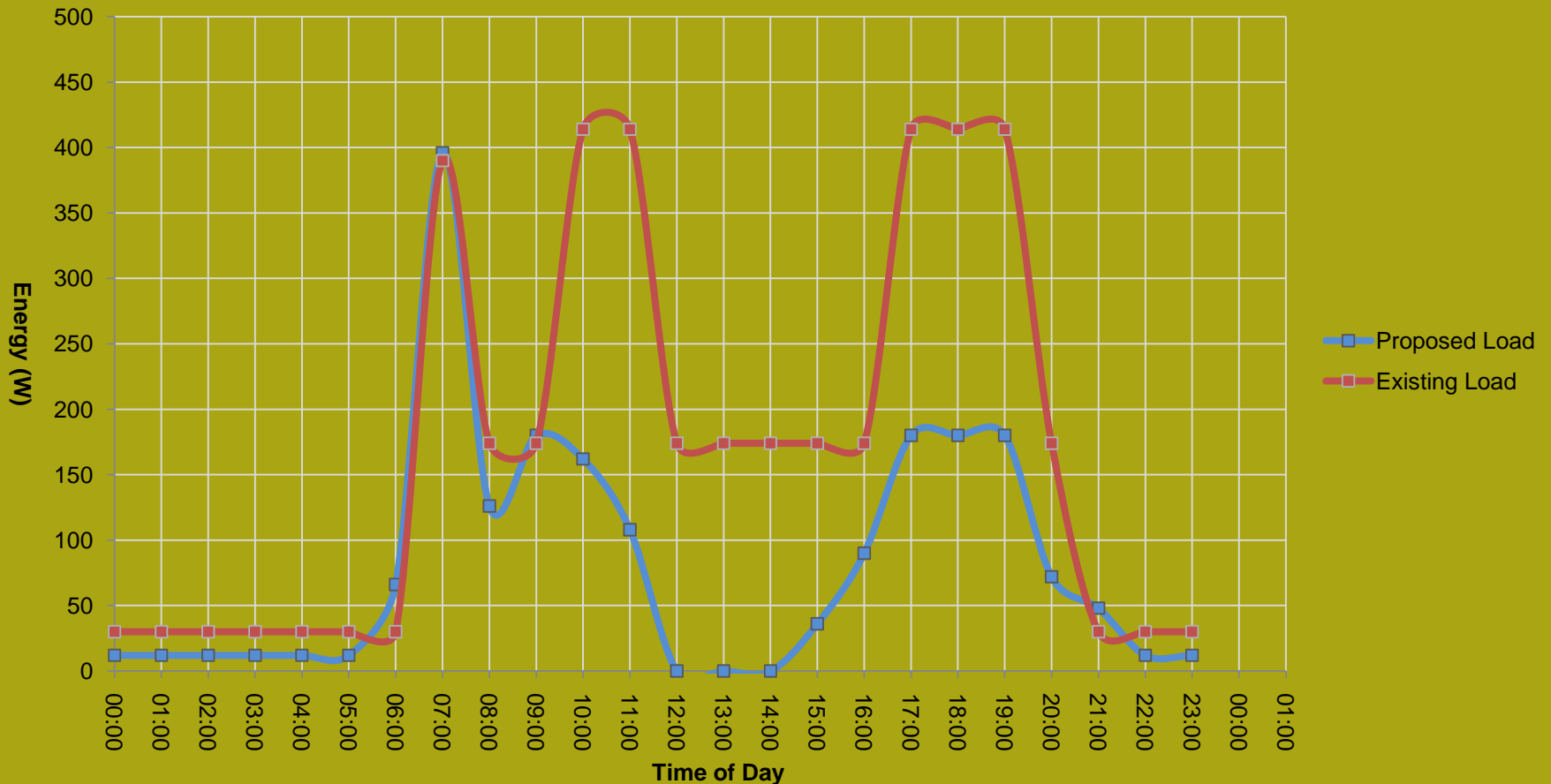




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30% Energy Saving

80% Maintenance Saving





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Conclusions

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 - **A firm programme and timescale and the budget.**



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 - Facilitation of what is a new process.



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 - Facilitation of what is a new process.
 - Support for securing IPR / Patents.



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 - **Staged funding for testing and prototyping.**



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Thank You