

# BBH Awards 2018

## Estates Team of the Year

### Chase Farm Hospital Redevelopment



Royal Free London   
NHS Foundation Trust







## 1. A novel approach that has proved successful and which could be replicated across the sector.

**Chase Farm Hospital's redevelopment was achieved at an unprecedented speed for a scheme this complex and large within the NHS. It demonstrates what is possible with strong leadership and clear direction, true collaborative working across disciplines and more objective approaches to risk management.**

Typically, schemes like this take over 10 years to deliver. Delivering a scheme with a construction value of £130m+ in less than 4 years is unprecedented.

The scheme was delivered on time and within budget, and likely to generate a gainshare saving back to the NHS (see Appendix 1).

Moving quickly was essential, as the site was financially unstable, losing over £25m/year. Infrastructure and building condition was poor, as was the community's confidence in positive change.

From a standing start, the scheme took just 4 years from site acquisition by the Royal Free London NHS Foundation Trust to completion in 2018, including:

- + Full Business Case approval from the Trust, Department of Health and Treasury
- + Full planning and outline consent for the whole site masterplan
- + Appointment of IHP as P21+ partner, along with architects IBI, building services engineers TB+A and structural engineers Thomasons
- + Development and approval of a fully integrated design in 4 months
- + Construction and handover of 23,000m<sup>2</sup> Acute General Hospital in 34 months
- + Sale of residual land on which initial housing units are nearing completion

By consolidating services into a single, efficient new building, the Trust released land for disposal, (see Appendix 3). The funding sources roughly break down to a third from sale receipts of the residual site, Treasury funding and Trust capital.

This scheme met key Government objectives in the Naylor Report and Construction 2025, delivering a whole-site development that provides:

- + Sustainable strategy, enabling the estate to support transformation in the NHS.
- + Delivery of housing (including key worker), a primary and secondary school.
- + Reduction in the overall time, from inception to completion for built assets (pre-construction design period reduced to 6 months).
- + Energy centre delivered via ESCo procurement model, serving hospital and housing scheme, and reducing energy use/CO2 emissions, (see Appendix 2).
- + BREEAM Excellent

Successful project delivery was achieved by:

- + A clear vision and clinical strategy underpinning the service model.
- + Strong leadership by Chief Executive and Board, ensuring rigorous programme management, clear and strict governance processes for change control.
- + Clinical Project Director role ensured proposals were developed and embedded within clinical teams.
- + Key stakeholders were engaged throughout business case development, employing a specialist to specifically liaise with and guide the project through the external approval process.
- + Working with the local authority throughout to help planning, utilities and logistics issues.
- + Using evidence based P22 Repeatable Rooms and Standard components as a starting point for design to reduce time/cost.
- + Strategically managing risk with all parties, to facilitate of enabling and other works in advance of final business case and planning approvals.



## NHS Property and Estates

Why the estate matters for patients

An independent report by Sir Robert Naylor  
for the Secretary of State for Health

March 2017

**70**  
**YEARS**  
**OF THE NHS**  
**1948 - 2018**

*'The Estates Team is very proud to have delivered the only completely new General Hospital on the 70th anniversary of the NHS. We believe it sets an example of what can be delivered nationally.'*

Natalie Forrest,  
Chief Executive Officer, Chase Farm Hospital

## 2. Show clear proof of improvement on existing practises or services

### Involving the local community and key stakeholders throughout planning and development was critical.

A failure to deliver promises in the past meant the Trust faced a major credibility gap with the local community, politicians and other stakeholder organisations.

This time it would be different. The Trust committed itself to a series of stakeholder meetings during pre-construction, many in public, to share the plans and build support. Extensive pre-planning discussions with the Planning Authority, GLA and Transport for London took on board comments and reflected these in the design. Key health commissioners were invited to be members of the Programme Board, overseeing the development.

Managing risk collaboratively with all parties enabled IHP to provide an early, robust, and jointly owned “not to be exceeded” project budget. This enabled progression of advance works whilst detailed design was completed advance of final business case and planning approvals.

If there was frustration on the part of the local community, there was also scepticism from staff and clinicians. To build support, the Trust held a series of major events, off-site and attended by over 100 staff at a time. These visioning days looked at what the new hospital could be, started to challenge how things were currently organised and what new models of working could be used to improve care and financial stability.

Innovation was at the heart of new model, reflected not only in the design (inclusion of barn theatres and generic outpatient’s units), but also by using IT to deliver a ground-breaking, digital hospital, and new working practices (including 3 session days and new clinical roles).

The Local Authority set a condition for the hospital element to provide a 35% reduction on the total CO2 emissions over Part L of Building Regulations 2013.

To achieve this, we set clear strategies for engineering systems, following the London Plans “lean, clean and green” approach. The “lean” performance exceeds the Part L2A carbon targets, even before we apply the further improvements. The addition of gas fired CHP further reduces the hospitals carbon footprint. The combined CO2 emissions equates to an improvement of 45.3% exceeding the 35% target.

During the construction we held multiple events bringing the local community into the delivery of their hospital.



Students of Haringey/Enfield College to their Academy for an Introduction into Dry Lining Techniques



Pirates of Chase Farm Hospital nursery



'Construct With Us' event with Enfield Council at The Nightingale Academy and Winchmore School



'Open Doors' - taking the public behind the scenes at Chase Farm



Site hoarding artwork unveiled by children from Wilbury Primary School

### 3. Teamwork and collaboration with key stakeholders

**Shared offices with the team physically and physiologically in the same place, provide a collaborative team.**

To assist with planning, utilities and logistics, the Trust's executive team took the opportunity to move into the same office as Enfield Planning department. The relationships created certainly smoothed the process.

Co-location of the dedicated Project Management Organisation (PMO ) in open plan, on-site accommodation developed strong teamworking, rapid problem solving and shared ownership across the construction and operational work streams.

The Trust, with the design team, held a full day's workshop with full size mock ups, models, innovative equipment to hundreds of Trust staff.

The Trust's team held open days for the community and patients to view the new hospital designs and to give their opinions.

IBI worked with the Trust to select a group of exciting artists to create art for the new entrance, funded by the Royal Free Charity.



The Trust, IHP and the Design team - One team - One office



# 4. Evidence of ongoing evaluation

The team has and will use all established tools and processes to capture and share lessons learnt for continuous improvement.

IHP has shared the learning from Chase Farm with DHSC and the principal supply chain members in P22.

The Trust and IHP will jointly undertake a Post Project Evaluation (in line with NHSI Business Case Requirements, Annex 8 Checklist) for inclusion within the Trust's Project Completion Report within 6 months of occupation. This will capture and feed back to NHSI, improvements, all learning and best practice arising from the Chase Farm development process.

Looking ahead, we will undertake Post Occupancy Evaluations at 12, 24 and 36 months. This will capture the specific business case benefits, in conjunction with the NHS Efficiency and Productivity Targets and compare these to what is being achieved at each evaluation. The outputs from these will enable the Trust to refine the way it operates within the facility to optimise outputs and share this information across the NHS to enable continuous improvement.

**Pre + Post Occupancy Evaluation**

Trust name: *insert* PSC/POE contact: *insert*  
 Project name + Procurement route: *insert* Health planner/Architect: *insert*  
 Trust Client POE contact: *insert* Facility opening date: *insert*  
 PSCP/Contractor name: *insert* Date Pre OE undertaken: *insert*  
 Date Post OE undertaken: *insert*

**Introduction**  
 In line with National and Local Strategy drivers, the P21+P22 framework have developed a GSL compliant Pre and Post Occupancy Evaluation toolkit, to capture Outcome measures across a range of areas, which the built environment can influence and support.  
 The metrics support 'before' and 'after' comparison of the Healthcare development, across both new build and refurbishment schemes. (refer to P22+POE User Guide for more information.)  
 The associated Staff and Patient/Carer Survey Postcards align with NHS England's Business Case Requirements Checklist for capturing feedback after occupation of the new facility. The Page 1 measures align with the NHS Model Hospital, Estates and Facilities reporting requirements (albeit at a scheme level).

**Executive Summary**  
 Complete this section, to summarise any key findings and/or lessons learnt at the end of each Evaluation (Pre, Post Y1, 2 and 3)

Ref no.	Lessons Learned / Best Practice Positive
1.1	
1.2	
1.3	

Ref no.	Lessons Learned / Best Practice Negative
2.1	
2.2	
2.3	

Ref no.	Any other key comments or feedback
3.1	
3.2	
3.3	

Completed by: *insert name* date: *insert date*

**Project + Post Occupancy Evaluation**

**Complete date measures undertaken**

Measure	Add date	Add date	Year 1	Year 2	Year 3
Design Appraisal process, dates + outcome					
P22 Project End Review (annual/monthly)	n/a				
CQC Rating					
<b>Physical environment/space/functional content</b>					
Total Gross Internal Area (GIA)					
Split new build / refurbishment					
Functional content summary					
Net departmental area					
Circulation area and as a percentage					
Communication area					
Floor area and % of roof top plant					
Patient attendances (patient bed days)					
Other					
<b>Functionality and Effectiveness (Social)</b>					
<b>Analysis of patient feedback postcards</b>					
Unoccupied or under used space (total across 12-18m)					
Occupied or under used space	< 35%				
Small infrastructure risk (£/m <sup>2</sup> )	< 2.5%				
Building Maintenance (£/m <sup>2</sup> )					
<b>Environmental measures (Environmental)</b>					
PMV/PPD (insert score/target)					
Energy use (kWh/m <sup>2</sup> )					
Emissions (kg/m <sup>2</sup> )					
Water (litres/m <sup>2</sup> )					
Waste (litres/tonne)					
<b>Financial Performance measures (Economic)</b>					
£/per m <sup>2</sup>					
Net Facilities running cost (£/m <sup>2</sup> )	HPCCF				
Net cost (£/m <sup>2</sup> )	<£300/m <sup>2</sup>				
Net staff time (£/m <sup>2</sup> )	Cost				
<b>Business Case or other Benefits Realisation measures (see included above)</b>					

**Pre + Post Occupancy Evaluation**

**Service Specific Measures: Acute Inpatient Ward**

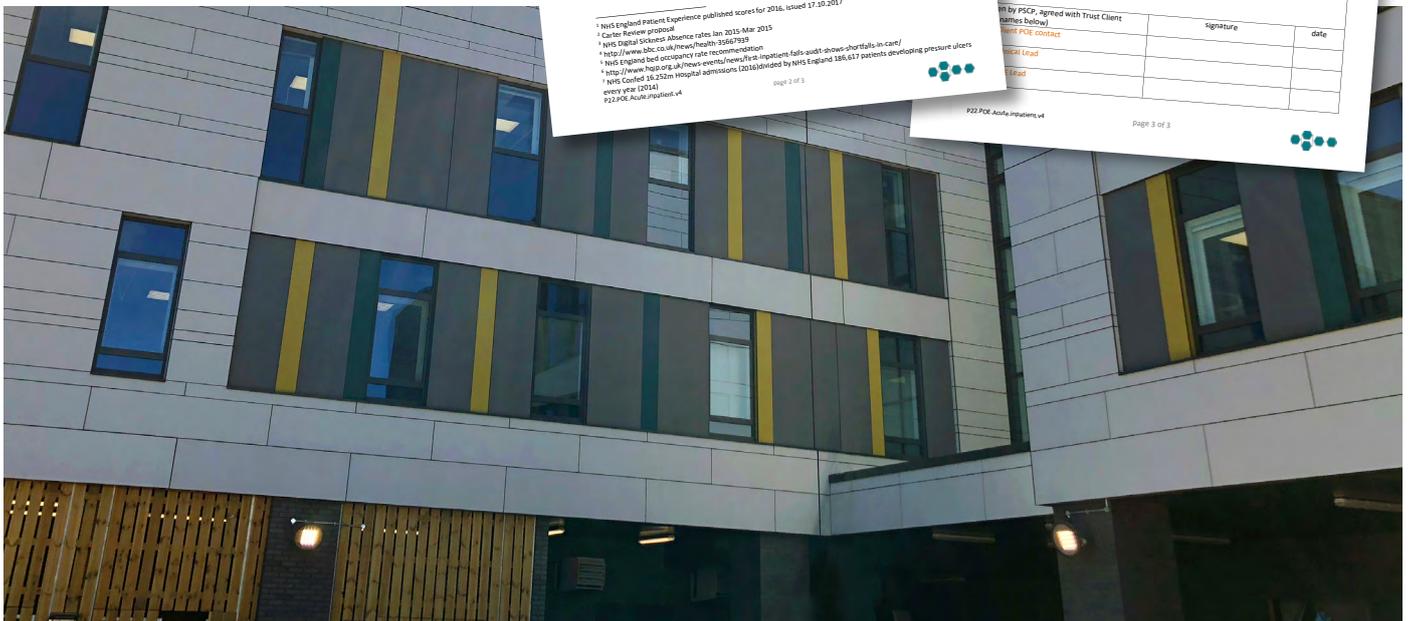
Measure	Complete date	Measure undertaken	Add date	Trust wide (overall and dept measure if available)	Proposed/Target	Year 1	Year 2	Year 3
Patient experience	Insert National Averages where available)	Ward category i.e. surgical, medical etc	Specialty ward type	Local results				
		Patient experience 76.7%	Local results					
		PLACE (Patient Led Assessment of the Care Environment) assessments	Local results					
		Friends and Family Test 95%	Local results					
		NHS Choices and Trust website	Local results					
		Care Hours per patient day (KIPDP)	Local results					
		9 x 11 hours	Local results					
		Staff experience/satisfaction	Local results					
		Staff friends and families work (NHS Choices website)	Local results					
		Staff turnover rate	Local results					
Staff resources	Insert National Averages where available)	Staff absenteeism 4.4%	Local results					
		Staff absence (total staff) 2.7% (n=10)	Local results					
		Nursing Staff vacancies 9.0%	Local results					
		Bed occupancy (based on data report Feb-2017)	Local results					
		2016/17 90.3% average 85%	Local results					
		Length of stay (IMA too data report Feb-2017)	Local results					
		Speciality specific check commencing last	Local results					
		Incidents slips, trips and falls (patient accidents) 6 per 1,000 bed days	Local results					
		2017 target 4.9-8.0 (nurs per 100,000 bed days)	Local results					
		Infection rates (see equipment and guidance)	Local results					
Service effectiveness	Insert National Averages where available)	Medication errors	Local results					
		Pressure sores incidents	Local results					
		Pressure sores incidents	Local results					
		1 patient in every 87	Local results					
		<b>Other agreed measures (see included above)</b>						
		Environmental comfort, keep an queue referred, noise + comfort						
		Awards						

**Pre + Post Occupancy Evaluation**

**Project/Service Specific Commentary: Acute Inpatient Ward**

COMMENTARY (Any highlights below)

Signature	Date



## 5. Improved environment for staff, patients and visitors

### The Trust's vision saw the facility as feeling more like a hotel than a hospital

The existing hospital was set over a sprawling low level campus with multiple entry points, access and parking issues. The new facility simplifies wayfinding, travel distances for staff, patients and visitor alike. Entry is at both ends of a double height, airy concourse, with mobile help points. The outpatient department is broken down to form a village, with double height waiting zones and views over the countryside. Each zone has stairs to encourage walking. Wards are on the top floor, with each room having a view.

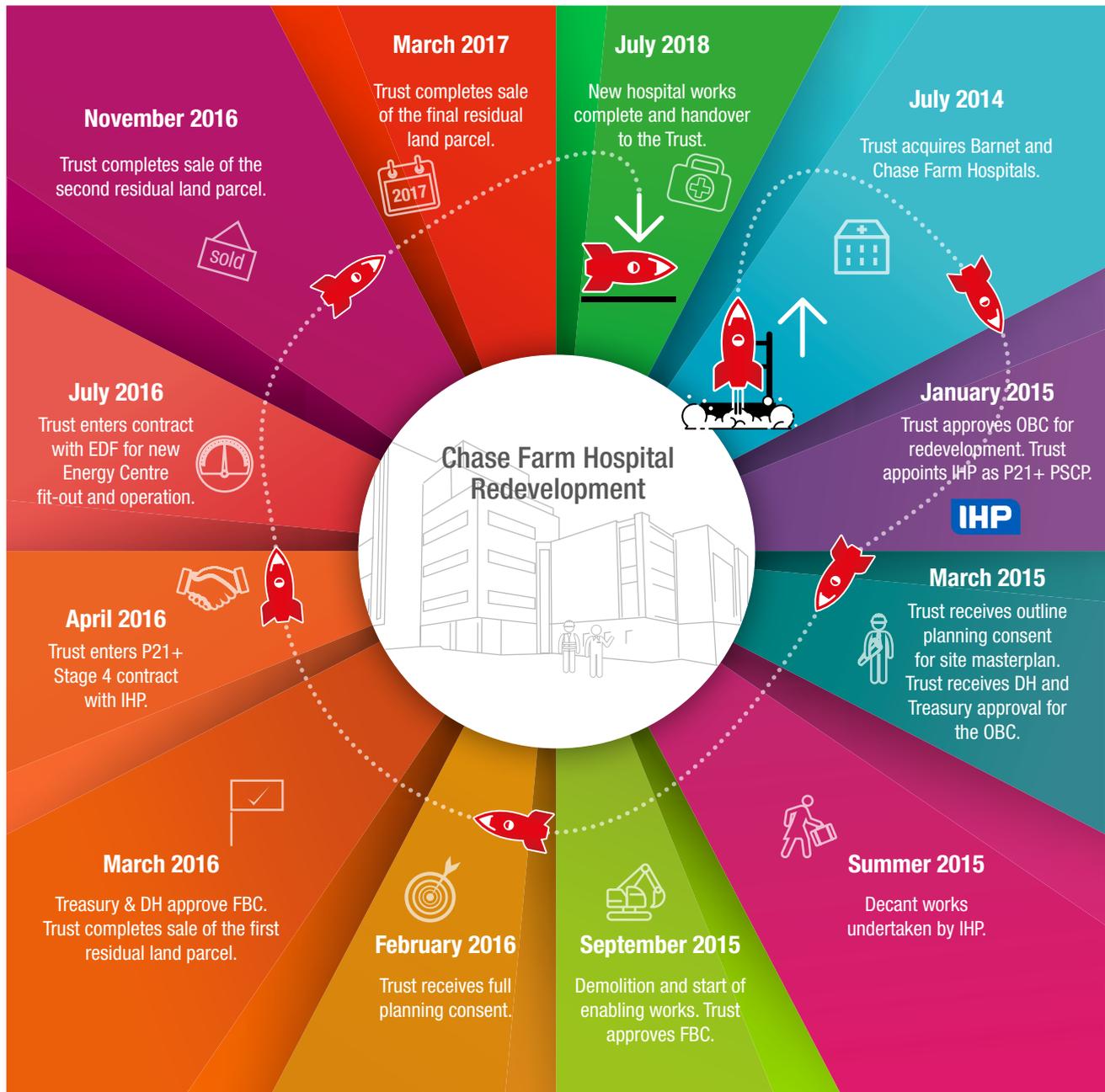
The south facing plaza acts as a focal point for the adjacent housing and a facility for all to enjoy an outside space, as an extension to the café and shopping facilities. The landscape is part of the healing process, with routes linked to therapeutic gardens and exercise equipment. Sensory planting engages all senses, with natural SuDs solutions, green roofs and walls encouraging diversity.

Staff benefits include:

- + Reduced travel distances with departments closely grouped to work flows
- + Travel distances further reduced with vertical adjacencies rather than horizontal
- + Clear and simple routes throughout which are bright, naturally lit, with floor to ceiling windows, connected to outside spaces
- + Easily accessible stairs to walking
- + Infrastructure that supports staff to access modern equipment and simply connect into the intranet with patient records and digital images
- + Larger rooms to facilitate a range of treatments and therapies without moving around the hospital
- + Natural daylight to all theatres and 70% of clinical and staff day spaces
- + Well-designed patient environments to reduce staff abuse and encourage wellbeing
- + Wards designed in small clusters with touchdown bases to allow easy and good observation
- + Shallow plan enables adjacent wards to help in an emergency, especially at night
- + Barn theatres to improve clinical behaviour between staff and increase patient throughput
- + A safe and secure environment for staff, including parking
- + More staff facilities throughout to improve working experience and reduce time wasted



# Appendix 1 - Key Milestones



**Conception to completion**  
=  
**4 years**

**Construction start to handover**  
=  
**34 months**

**This is ground breaking and unprecedented for a new 23,000 m<sup>2</sup> acute general hospital**

## Appendix 2 – Energy Centre



**The state-of-the-art Energy Centre has been delivered via EScO procurement model, serving hospital and housing scheme, meeting Trust and Local Authority energy and carbon reduction targets.**

Power, heating, hot water and cooling supplies for the new hospital will be provided by the Energy Centre. A gas-fired CHP will provide heating and power, while thermal stores inside the Energy Centre will allow its more efficient use, enabling storage of heat until it is required. The Energy Centre also has the capacity to support the heating requirements of the schools, housing and Mental Health Trust buildings that will share the site.

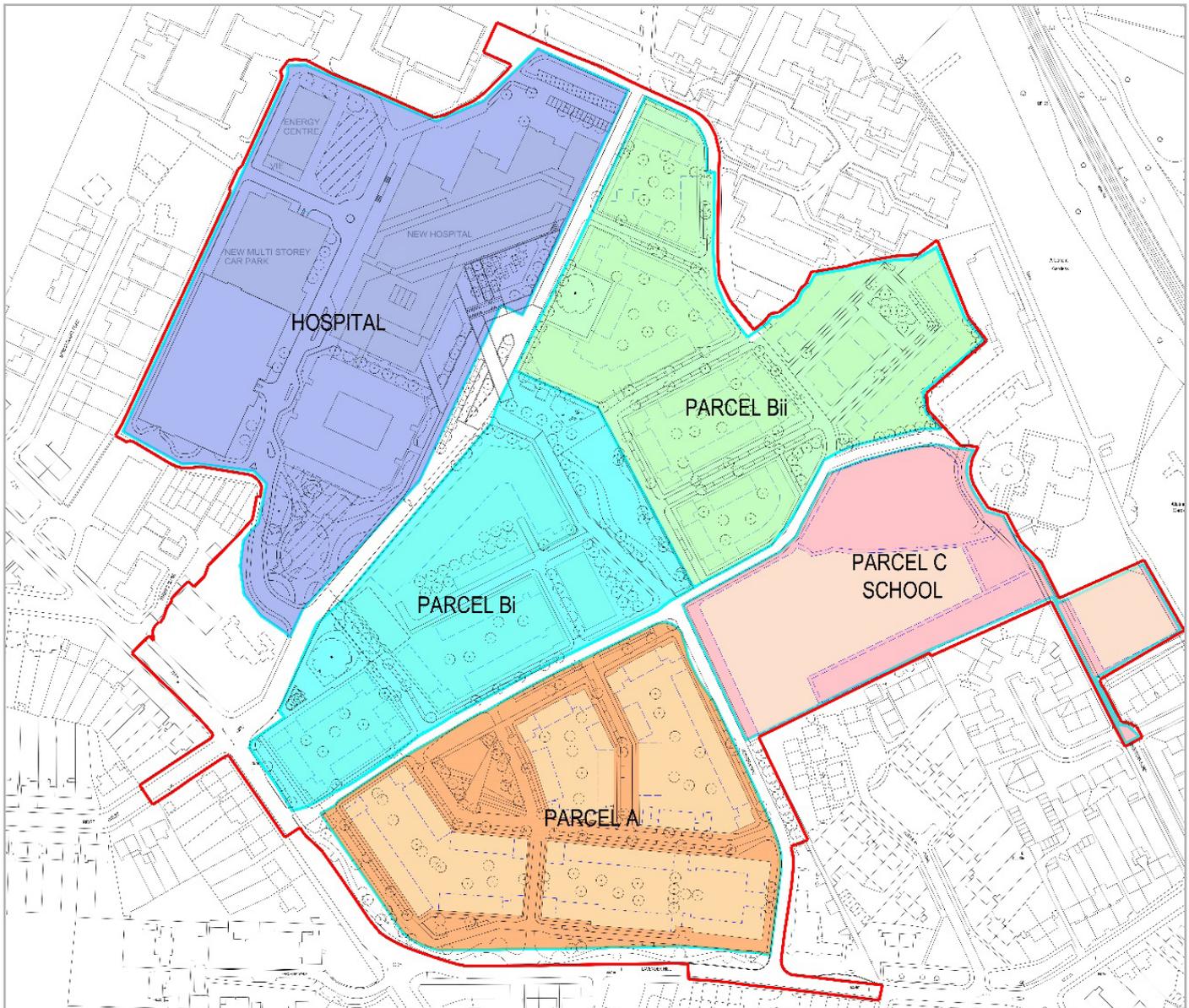
**The Energy Centre has been fitted-out and will be operated and maintained by EDF Energy under a 15 year contract with the Trust, procured via the Carbon Energy Fund.** The operating contract provides guaranteed savings for the Trust for that period, generating a significant operational saving to the Trust as well as guaranteed supplies.

The Local Authority set a condition for the hospital element to provide a 35% reduction on the total CO<sub>2</sub> emissions over Part L of Building Regulations 2013. This condition was based on the carbon reduction targets set by the Mayor of London.

To achieve this, we set clear strategies for engineering systems, following the London Plans “lean, clean and green” approach. The “lean” performance exceeds the Part L2A carbon targets, even before we apply the further improvements. The addition of gas fired CHP further reduces the hospitals carbon footprint.

- + Reduction in greenhouse gas emissions (carbon saving of 116 tonnes/pa).
- + The combined CO<sub>2</sub> emissions equates to an improvement of 45.3% exceeding the 35% target.

# Appendix 3 – Land Parcels



**By consolidating services into a single, more efficient new building, the Trust has been able to free-up the remaining site and make it available for disposal for the community uses set out below.**

Revenues from this have contributed approximately one third of the new hospital funding.

- + HOSPITAL - Retained site including safeguarded space for future expansion
- + PARCEL A – Residential (substantially complete)
- + PARCEL B(i) - Residential
- + PARCEL B(ii) - New Secondary School
- + PARCEL C – New Primary School

Residential developments include essential key worker housing.



Alan Kondys  
Framework Director

**IHP**  
**Astral House**  
**Imperial Way**  
**Watford, Hertfordshire**  
**WD24 4WW**

Direct: 01923 280986  
Mobile: 07816 514494

Chris Moriarty-Baker  
Head of Project Delivery

**Capital & Estates Department**  
**Royal Free London**  
**NHS Foundation Trust**  
**Chase Farm Hospital,**  
**The Ridgeway, Enfield**  
**EN2 8JL**

Mobile 07950 960314

Royal Free London   
NHS Foundation Trust



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