



Luton & Dunstable University Hospital Redevelopment

Briefing to Contractors

4th November 2019

Content

Time	Discussion Topic
2pm	Registration and coffee
2.30pm	Welcome and Introduction
2.40pm	Scheme overview
2.50pm	Architecture
3.05pm	M&E
3.10pm	Structural
3.15pm	Planning
3.20pm	Programme
3.30pm	Wrap Up
3.35pm	Q&A Formal session
3.45pm	Coffee, Q&A open session

Welcome and Introduction

David Hartshorne, Programme Director



CLINICAL EXCELLENCE, QUALITY & SAFETY







CLINICAL EXCELLENCE, QUALITY & SAFETY





Scheme Overview

Melanie Banks, Deputy Programme Director
Charles Frampton, Programme Executive

The L&D

- Catchment 320,000
- Population: Luton, Bedford Borough and parts of Hertfordshire and Buckinghamshire
- Luton and Bedfordshire – one of the fastest growing areas in the UK. Population growth over the next 5 years expected to be around 18%, close to double the national average
- Medium sized DGH
- Circa 800 beds
- Circa 4200 staff
- tertiary services: bariatrics, limb fitting, gynae, NICU
- Specialist services support c.1m
- Best performing hospital in the country (financially sound, best ED), with one of the worst hospital estates

TRUST STRATEGY

Substantially redevelop the hospital site to...

1. Tackle backlog maintenance and reduce risk in the highest risk areas;
 - a) Critical care
 - b) Maternity
 - c) NICU
 - d) Theatres
2. Enable transformation of elective surgery through colocation of theatres
3. Address national workforce challenges through a modern, flexible design
4. Increase capacity
5. Improve sustainability and efficiency
6. Maintain and improve quality standards
7. Enable advances in medicine and technology

The Challenge

- The hospital is land locked and developments have not adhered to a master plan
- Untidy and ageing estate
- Clinical adjacencies challenged
- Acute care facilities do not meet necessary standards
- Patient and staff satisfaction is negatively impacted
- Backlog maintenance c. £80m
 - buildings difficult to maintain
 - presents daily risks
 - stifles service development and innovation
- Patients are ageing and getting more acute
- Medicine and technology is advancing at a rate we cannot always keep up with
- Patient expectations are growing

The Journey so far...

2015 / 2016

Mar - Oct 2015
OBC Development
and Approval

Apr 2016
Planning
Permission
Granted

2016
Engaged market

2016
FBC Development

2016
No funding



2017 / 2018

Sep 17 – Jan 18
OBC Development
And approval

2018
No funding



2019

Aug 2019
Funding approved



SCHEME OBJECTIVES

Delivery of:

1. Acute services block
 - a) Maternity services – delivery suite, 3 operating theatres, midwifery led birthing unit, triage
 - b) NICU – intensive care, high dependency care, special care, transitional care, parental accommodation
 - c) Theatres – two floors for surgical arrivals, 8 operating theatres (including hybrid and intervention), recovery, clean rooms
2. Critical care block
 - a) A 22 bedded critical care unit
 - b) Offices for circa 150 staff
3. Multi-storey car park on Lewsey Road
4. Energy Centre (CHP, centralisation of boilers and standby power generation)
5. Helipad with fast access lift shaft

Supported by:

1. Programme of electrical infrastructure upgrades
2. Transfer of Obesity outpatient services to Travelodge
3. A number of time critical enabling schemes across the site e.g. roadways, demolition, offices

Architecture and Design

James Philipps, Murphy Philipps Architects



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L&D 2024



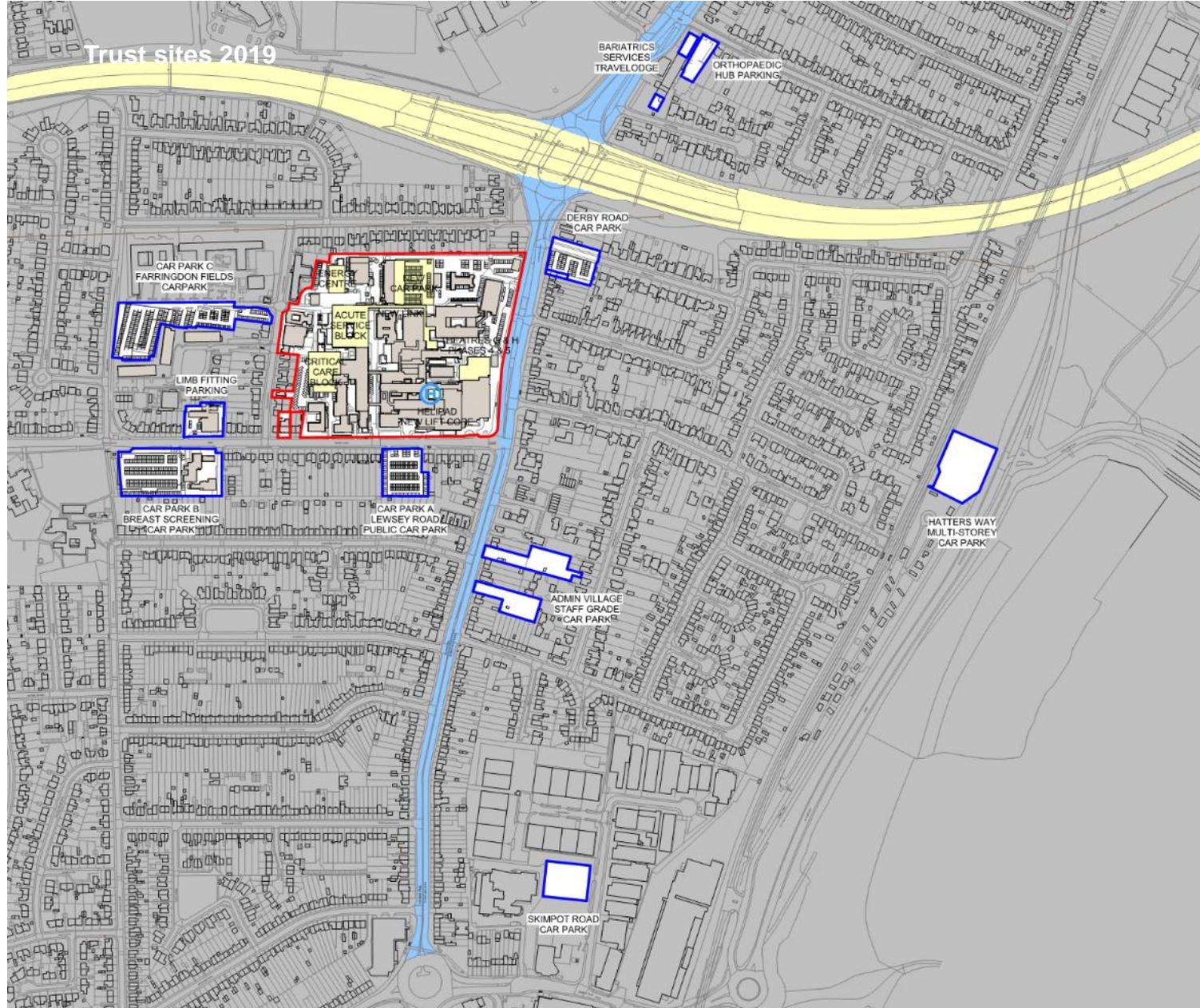
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UNIVERSITY
HOSPITAL

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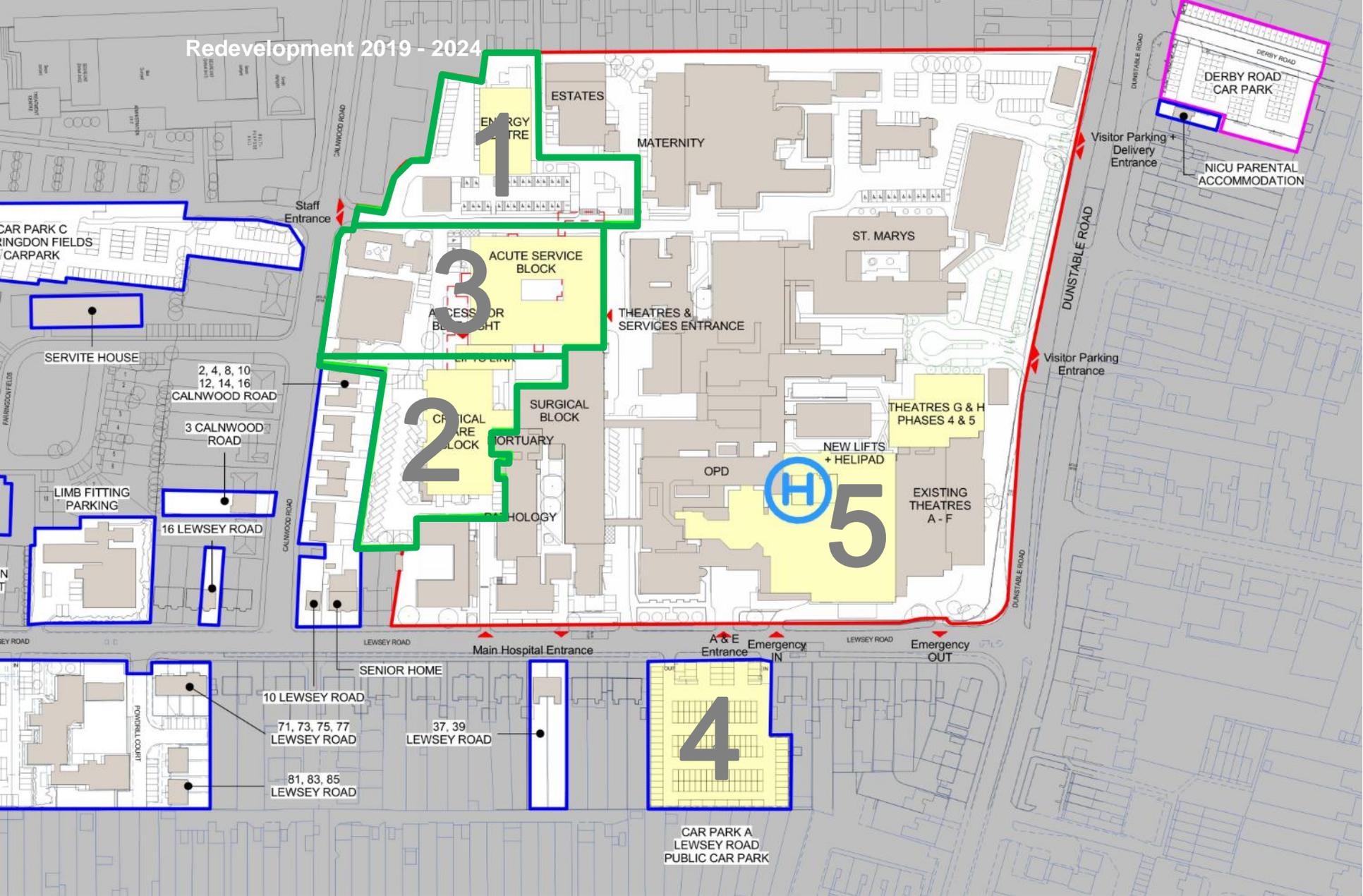


Trust sites 2019



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Redevelopment 2019 - 2024



Small works: currently 18

▢ MPA Programming	#####	Mon 05/08/19	Fri 22/03/24
▣ Redevelopment Board Meeting (3rd Wed of every month?)	1139 days	Wed 18/09/19	Wed 20/03/24
▣ FIP (Last Wed of every month?)	1120 days	Wed 25/09/19	Wed 28/02/24
▣ Imaging Corridor works	161 days	Mon 12/08/19	Mon 06/04/20
▢ Enabling works	485 days	Mon 12/08/19	Thu 29/07/21
▣ Car Park Strategy	90 days	Mon 02/09/19	Fri 17/01/20
▣ Planning Consent renewal (resubmit consented schem	169 days	Mon 12/08/19	Mon 20/04/20
▣ Block 38 (circa 100 workstations predominantly off site	160 days	Mon 12/08/19	Fri 03/04/20
▣ Mortury (relocate community cadavers to on site locati	160 days	Mon 12/08/19	Fri 03/04/20
▣ Bariatrics Services (going to Travelodge)	180 days	Mon 12/08/19	Tue 05/05/20
▣ Audiology & Occupational Health (move to Microbiology)	160 days	Mon 06/01/20	Thu 20/08/20
▣ Social Club (move to Microbiology TBC)	160 days	Mon 06/01/20	Thu 20/08/20
▣ Lewsey Road Public Car Park (gnd+2 full levels)	290 days	Wed 04/09/19	Tue 03/11/20
▣ Dunstable Road Admin Village & Staff grade Car Park	300 days	Mon 30/09/19	Fri 11/12/20
▣ Stanton Road/Hatters Way Staff Car Park Road Public C	300 days	Mon 03/02/20	Tue 20/04/21
▣ EBME (relocate to old Decontam + other space)	260 days	Mon 03/02/20	Fri 19/02/21
▣ Theatres G&H phases 4&5 (4=ophthalmology Chng rms :	85 days	Wed 04/09/19	Tue 14/01/20
▣ ED 1st floor Plant room (for ED CT)	250 days	Mon 03/02/20	Fri 05/02/21
▣ Block 81 6 Calnwood Road (relocate Union in Radio Hou	245 days	Mon 03/02/20	Fri 29/01/21
▣ THQ staff relocation & demolitions	370 days	Mon 03/02/20	Thu 29/07/21
▣ Substation A replacement (ISS)	20 days	Mon 07/10/19	Fri 01/11/19
▣ Infrastructure alterations (FM, waste, etc)TO BE TIED IN	160 days	Mon 12/08/19	Fri 03/04/20
▣ Energy Centre (MPA TA for RIBA 4&5)	365 days	Mon 05/08/19	Fri 29/01/21
▣ Medical Block Fast lifts & Helipad (S/S MPA p5)	698 days	Wed 18/09/19	Mon 11/07/22
▣ Critical Care Block	525 days	Mon 12/08/19	Fri 24/09/21
▣ Acute Services Block & link (?)	1169 days	Mon 12/08/19	Fri 22/03/24

CCB = 4,032sqm

Ground floor = 955sqm

First floor = 1,460sqm

Second floor = 1,185sqm

Plant = 432sqm

ASB = 12,088sqm

Theatres = 2,007sqm

Theatres Delivery = 1,862sqm

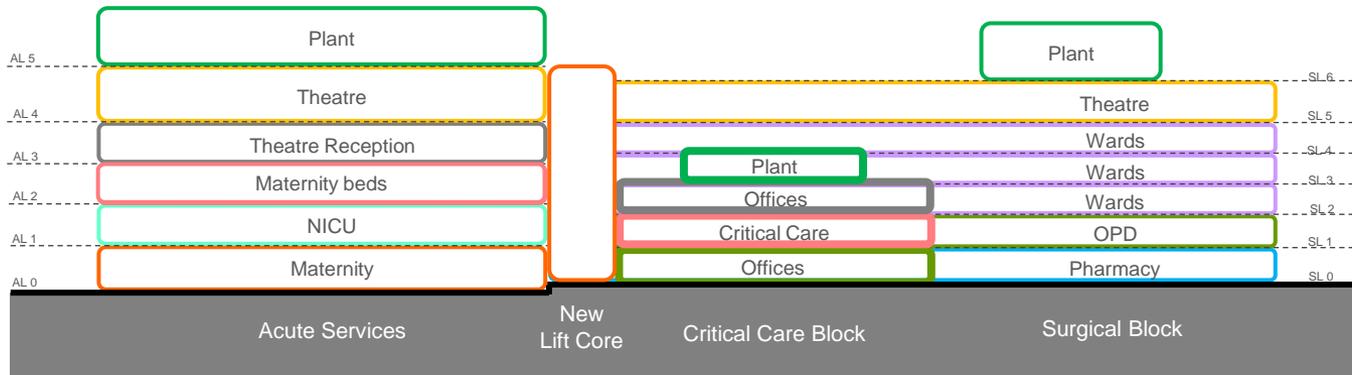
Maternity Beds = 2,298sqm

NICU/SCBU = 1,862sqm

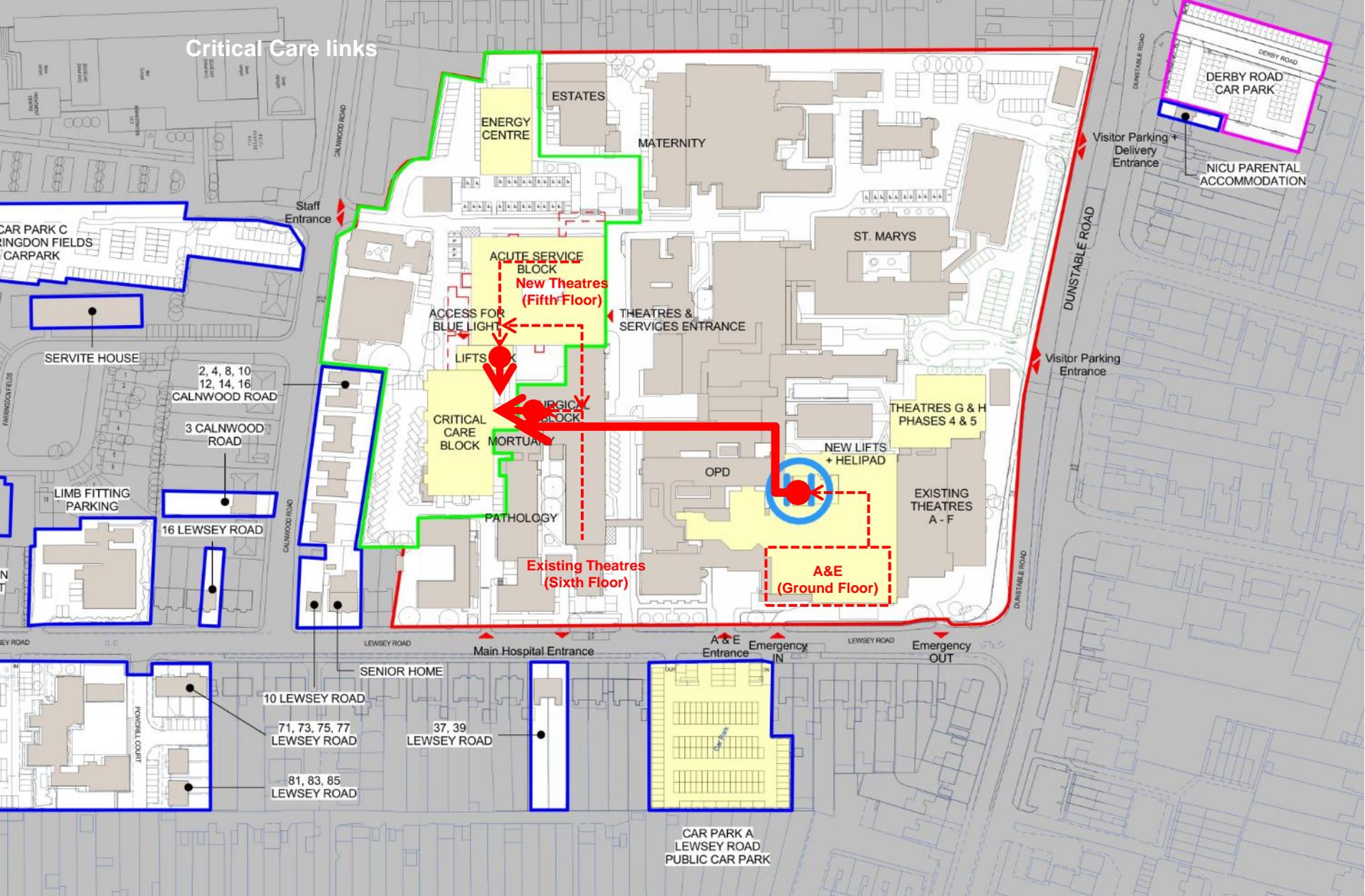
Delivery = 1,862sqm

Plant and Comms = 2,197sqm

Schemes 2&3: Acute Services and Critical Care Blocks - schematic section



Critical Care links



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From A&E:
One level up in lift plus 160m travel distance

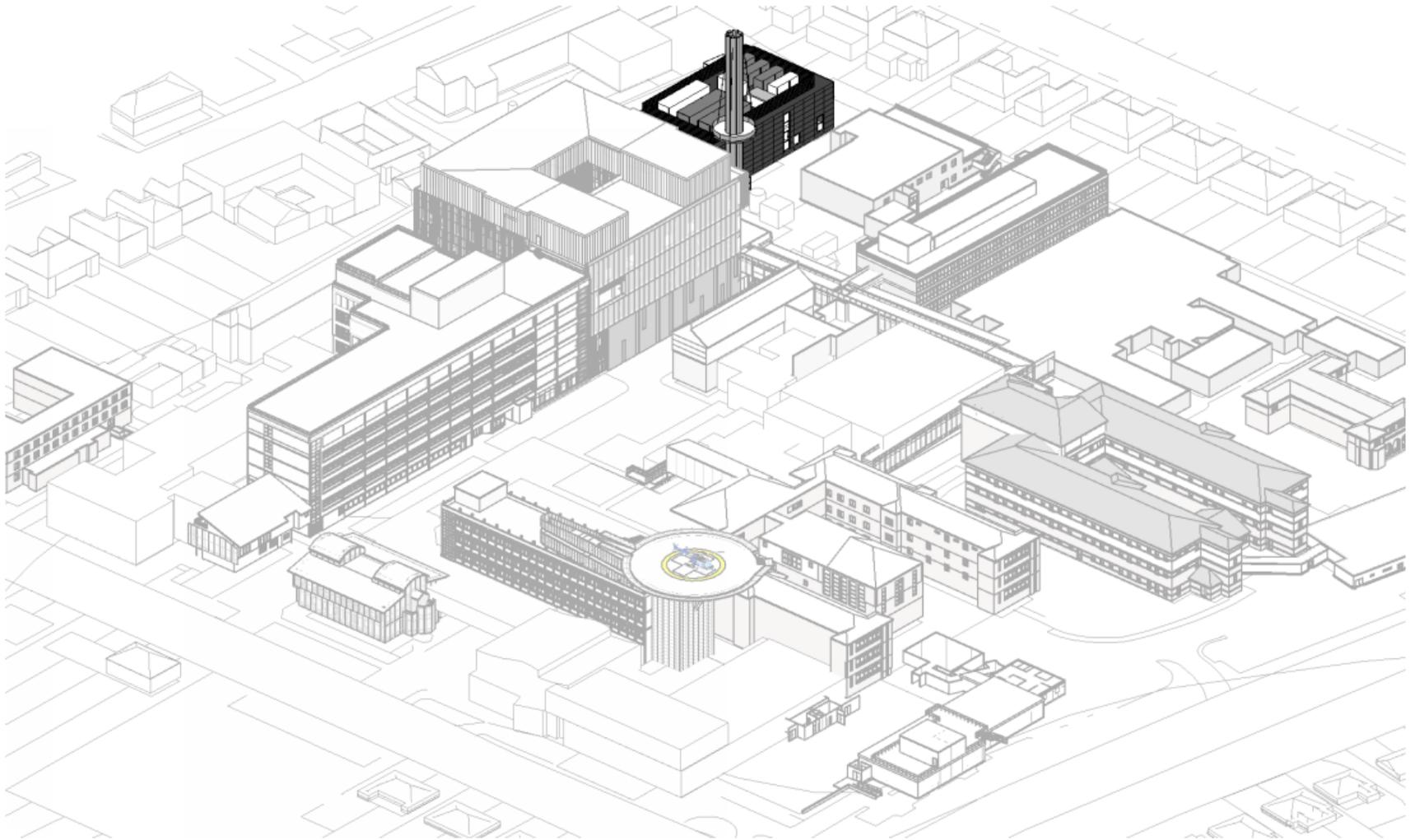
From Existing Theatres on level 6 Surgical Block:
Down four levels in existing lifts

From New Theatres on fifth floor of Acute Services Block:
Down three levels in new lift core

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Scheme 1: Energy Centre



Aerial View Future

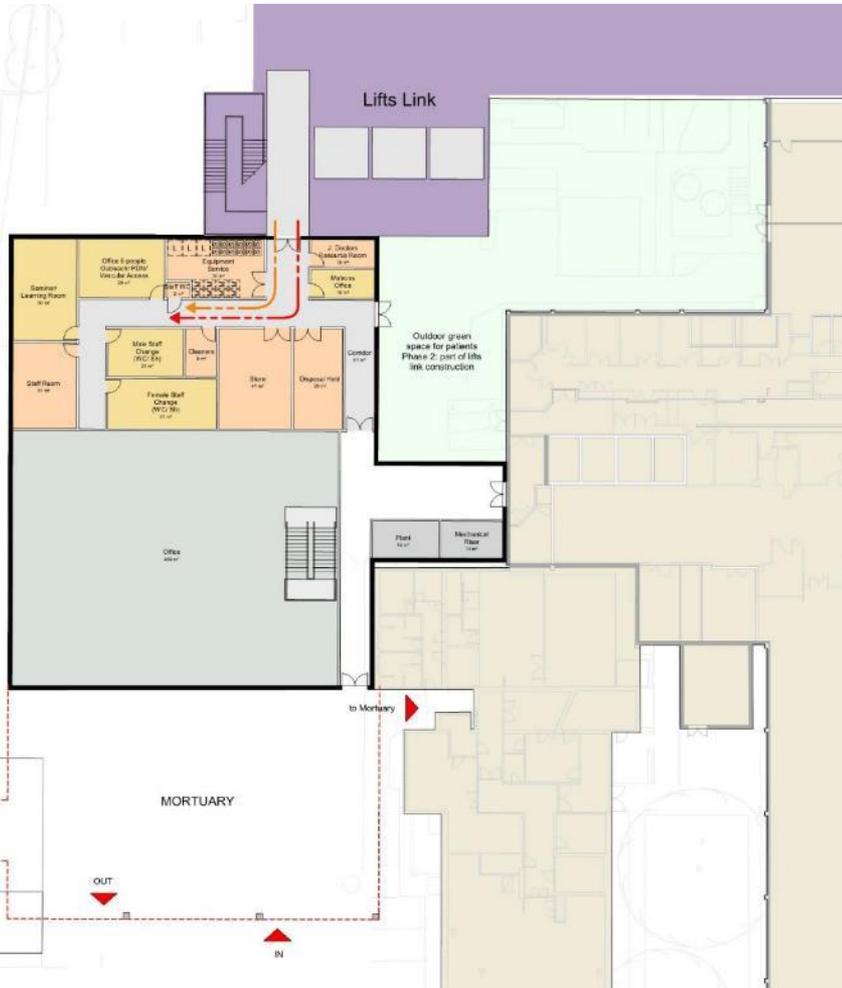


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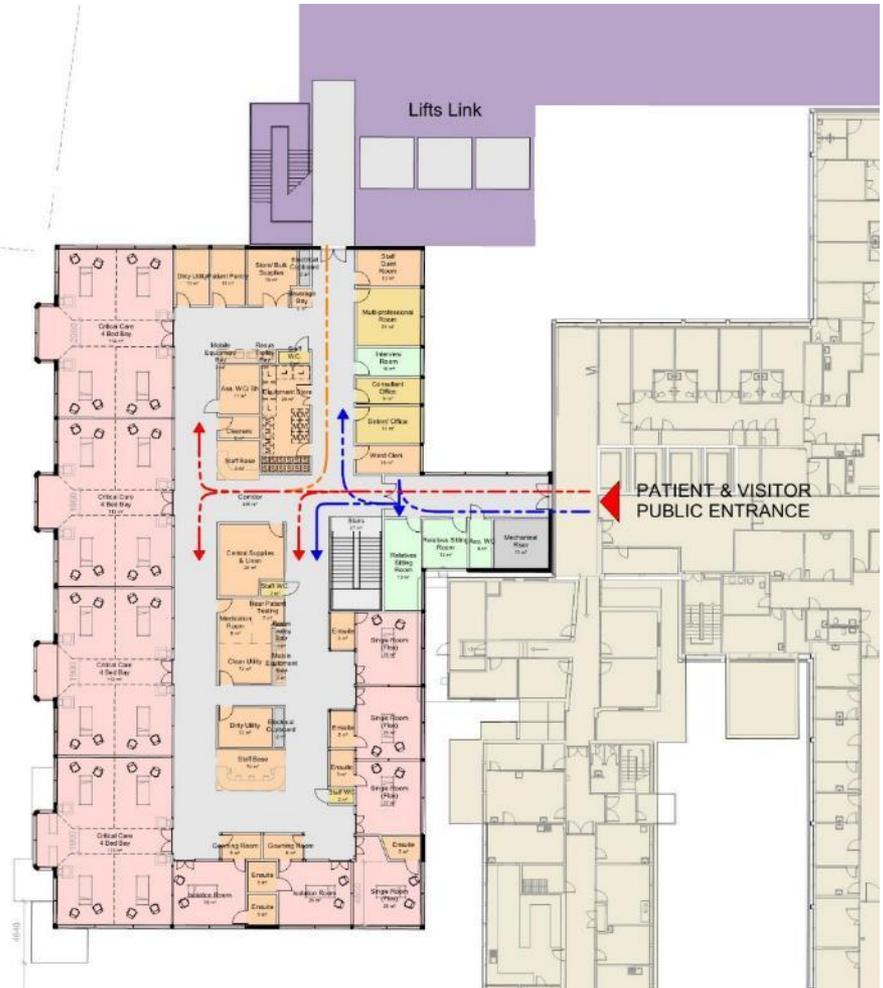
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Scheme 2: Critical Care Block or CCB – ground & first floor plans Critical Care



Ground floor



First floor

Critical Care;

- 22 beds in total - all level 3
- 4 x four bed bay
- 4 x ensuite bedroom
- 2 x ensuite isolation bedroom

Scheme 3: Acute Services Block or ASB – ground floor plan Maternity



Blue Light Entrance

Entrance;
MLBU;
CLBU;
Theatres;

Bereavement suite;

7 triage inc 2 side rooms
8 ensuite delivery rooms inc 3 pools
8 ensuite delivery rooms inc 1 high risk & 1 pool
2 maternity theatres inc baby resus
1 theatre
7 close monitor & recovery bays
2 ensuite rooms

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Scheme 3: Acute Services Block or ASB – first floor plan NICU



Entrance;

Critical care;
SCBU;
Transitional care;

Relatives support
2 ensuite rooming in rooms
25 critical care cots - all level 3
19 cots, 3 side rooms & 1 isolation room
8 bays, 1 side & 2 ensuite rooms

Scheme 3: Acute Services Block or ASB – second floor plan Maternity beds



Maternity beds;

- 48 beds in total
- 24 ensuite bedrooms & 4 four bed bays inc 1 isolation & 1 separation room
- 4 high risk induction beds (1 four bed room)
- 1 treatment room (laser)
- 1 neo-natal treatment room

Scheme 3: Acute Services Block or ASB – fourth floor plan Theatres reception



Theatre reception;

Pre & post gowned areas
 3 clean rooms (gynae)
 32 second stage recovery
 Discharge lounge

Scheme 3: Acute Services Block or ASB – fifth floor plan Theatres

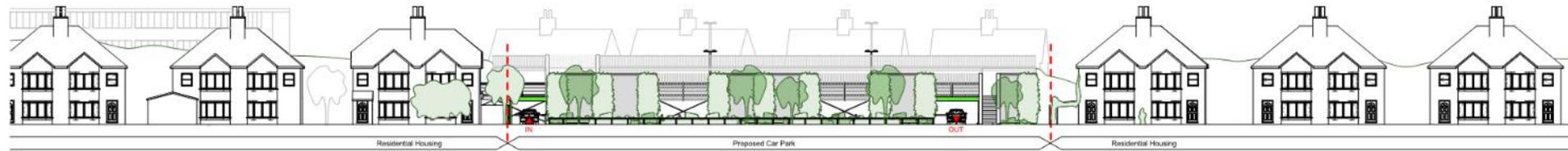


Theatres;

- 9 new theatres inc
- 4 laminar flow theatres
- 4 general theatres
- 1 general theatre within existing surgical block
- 14 bay post anaesthetic recovery inc 4 paediatric
- 1 interventional/vascular theatre



Scheme 4: Lewsey Road Car Park



1. Front Elevation along Lewsey Road in Context
1:200



Granta Park, Cambridge

Green wall cladding



Green wall cladding

Wire mesh cladding



Perforated metal cladding



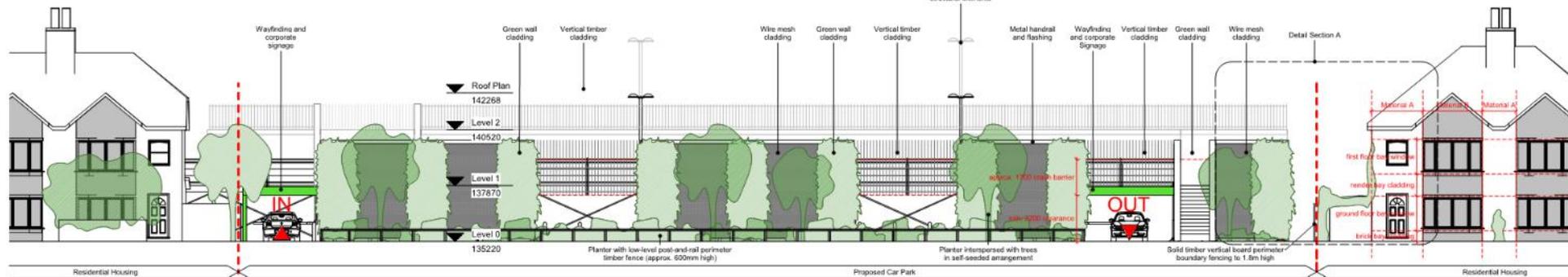
Broad Screening Car Park, Lewsey Road

Low-level timber post-and-rail fencing

Vertical timber cladding

Galvanised metal structure

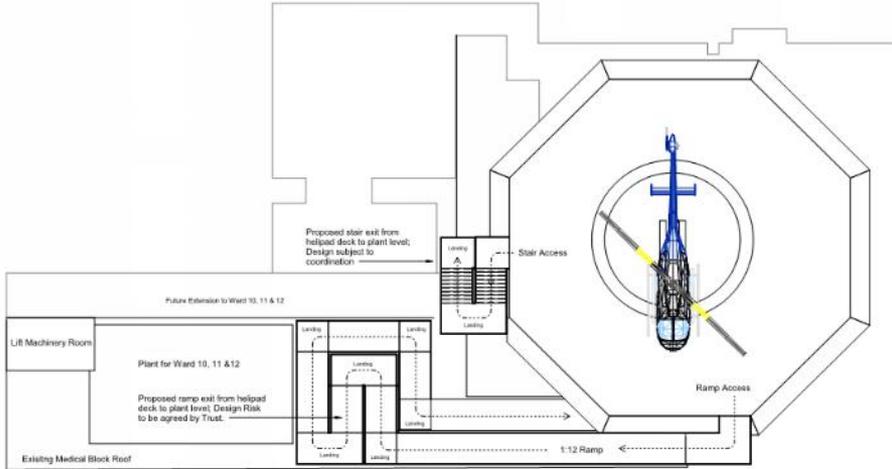
Similar planting, self-seeded tree and landscaping design



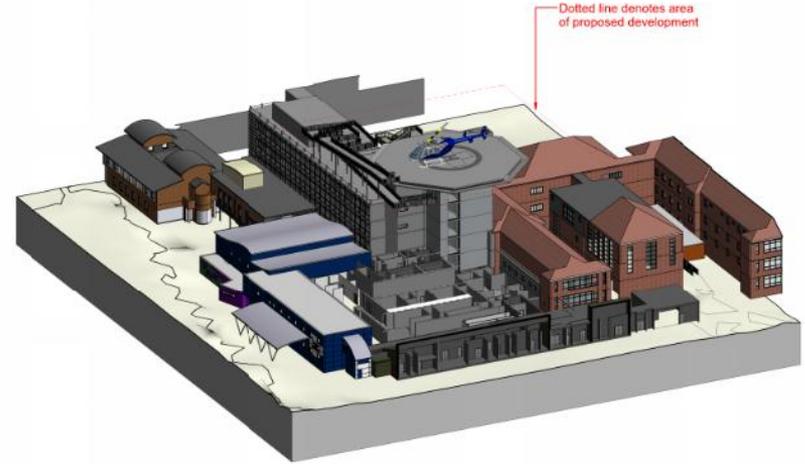
2. Front Elevation
1:200

Lewsey road public car park; circa 300 bays over ground plus 2 floors

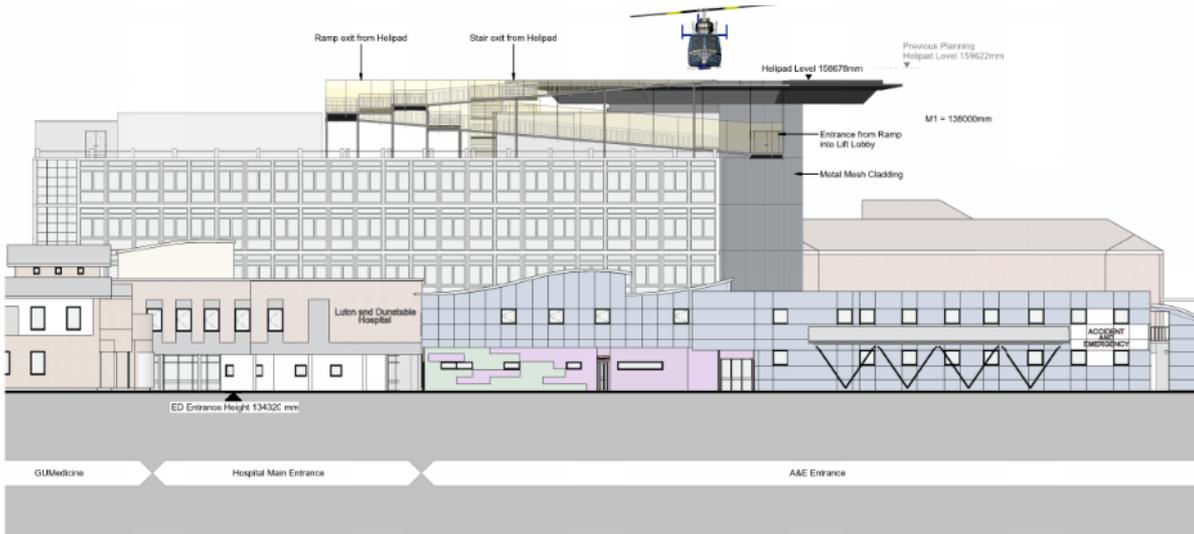
Scheme 5: Medical Block Rapid Lifts & Helipad



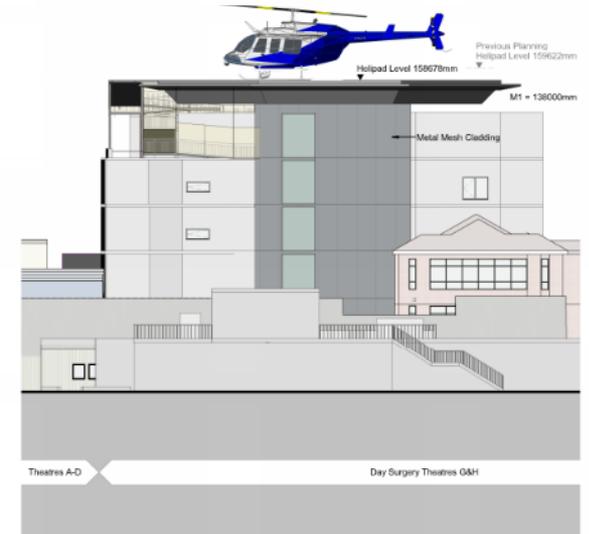
Proposed Helipad General Arrangement



Proposed Helipad Axonometric View



Proposed Helipad Elevation- Lewsey Road



Proposed Helipad Elevation- Dunstable Road



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M&E Design

Alan Newman, Troup Bywaters + Anders



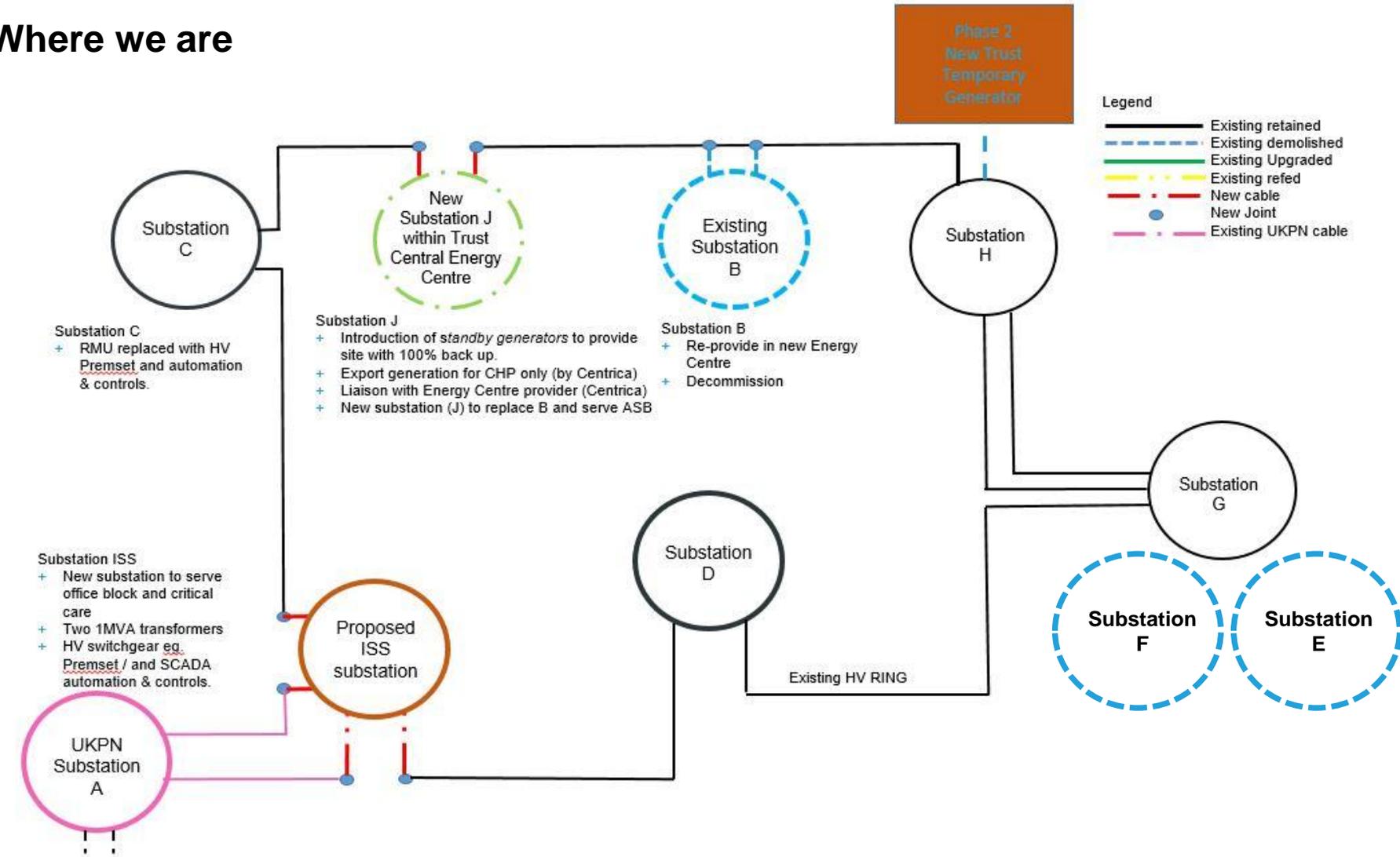
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Site Wide Infra Structure Upgrade Case for change

- Removal of backlog maintenance
- Replacement of ageing equipment
- Increase electrical capacity
- Compliance with HTM
- Improve resilience
- Support future capital projects
- Centralization of heat generation plant
- Income generation
- Reduction in energy usage

Where we are



- Legend**
- Existing retained
 - - - Existing demolished
 - Existing Upgraded
 - - - Existing refeed
 - New cable
 - New Joint
 - - - Existing UKPN cable

Substation C
 + RMU replaced with HV Premset and automation & controls.

Substation J
 + Introduction of *standby generators* to provide site with 100% back up.
 + Export generation for CHP only (by Centrica)
 + Liaison with Energy Centre provider (Centrica)
 + New substation (J) to replace B and serve ASB

Substation B
 + Re-provide in new Energy Centre
 + Decommission

Substation ISS
 + New substation to serve office block and critical care
 + Two 1MVA transformers
 + HV switchgear eg. Premset / and SCADA automation & controls.

Substation A
 + Substation retained
 + UKPN to increase maximum demand to 5MVA and export capability to 1MVA

Revision H 23.08.2019

Key elements next 6 months

- Sub station J design
- Generator tender complete, specialist appointment imminent
- Sub station D in construction
- Sub station ISIS options studies
- Energy Centre design in conjunction with Centrica
- Satellite plantroom works
- Shared CCB and ASB services core option appraisal
- CCB and ASB RIBA Stage 2 reports
- Surgical block chiller upgrade
- Central chiller network for Surgical Block, CCB and ASB

Civil and Structural Design

Steve McSorley, Peregá



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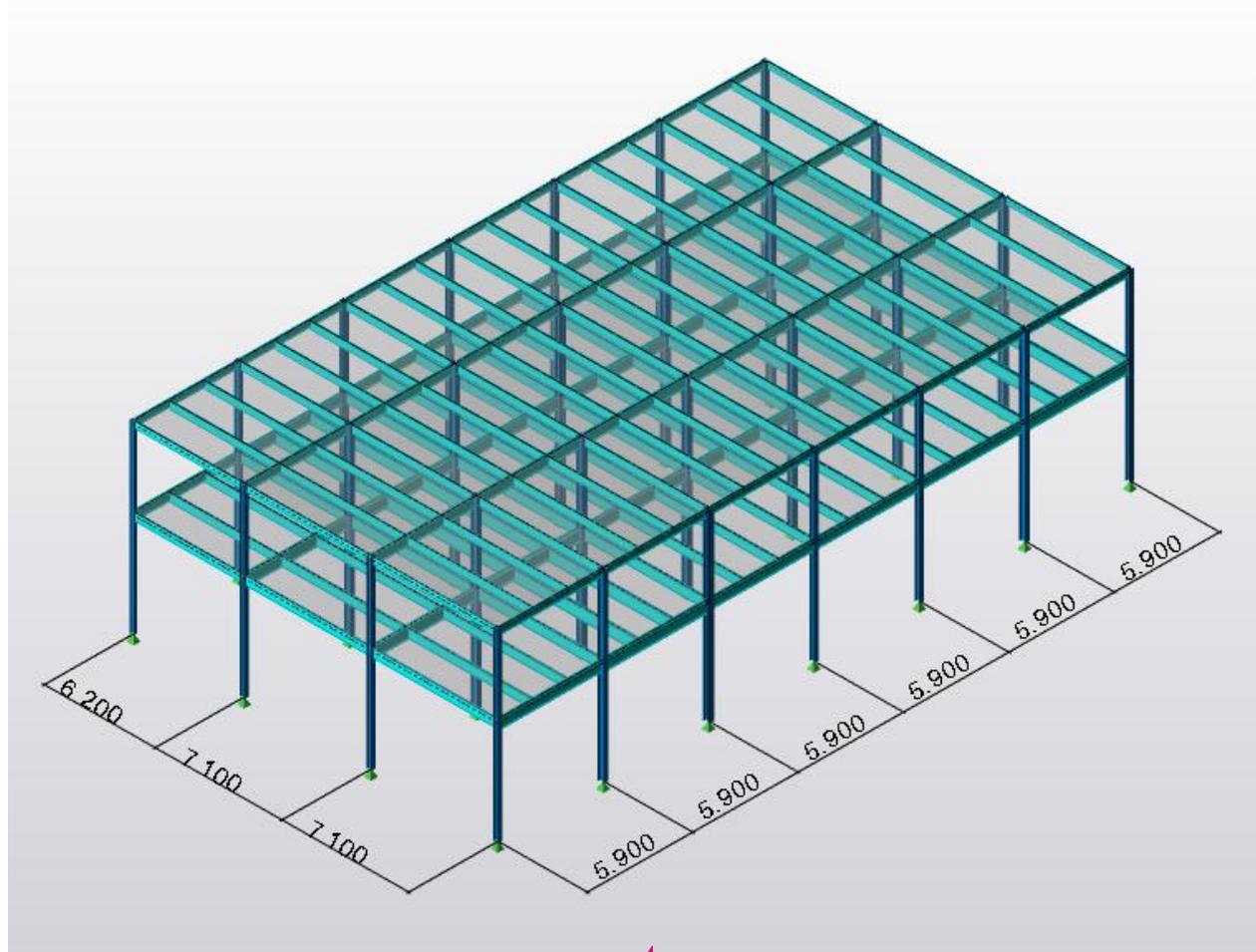


Where we are to date

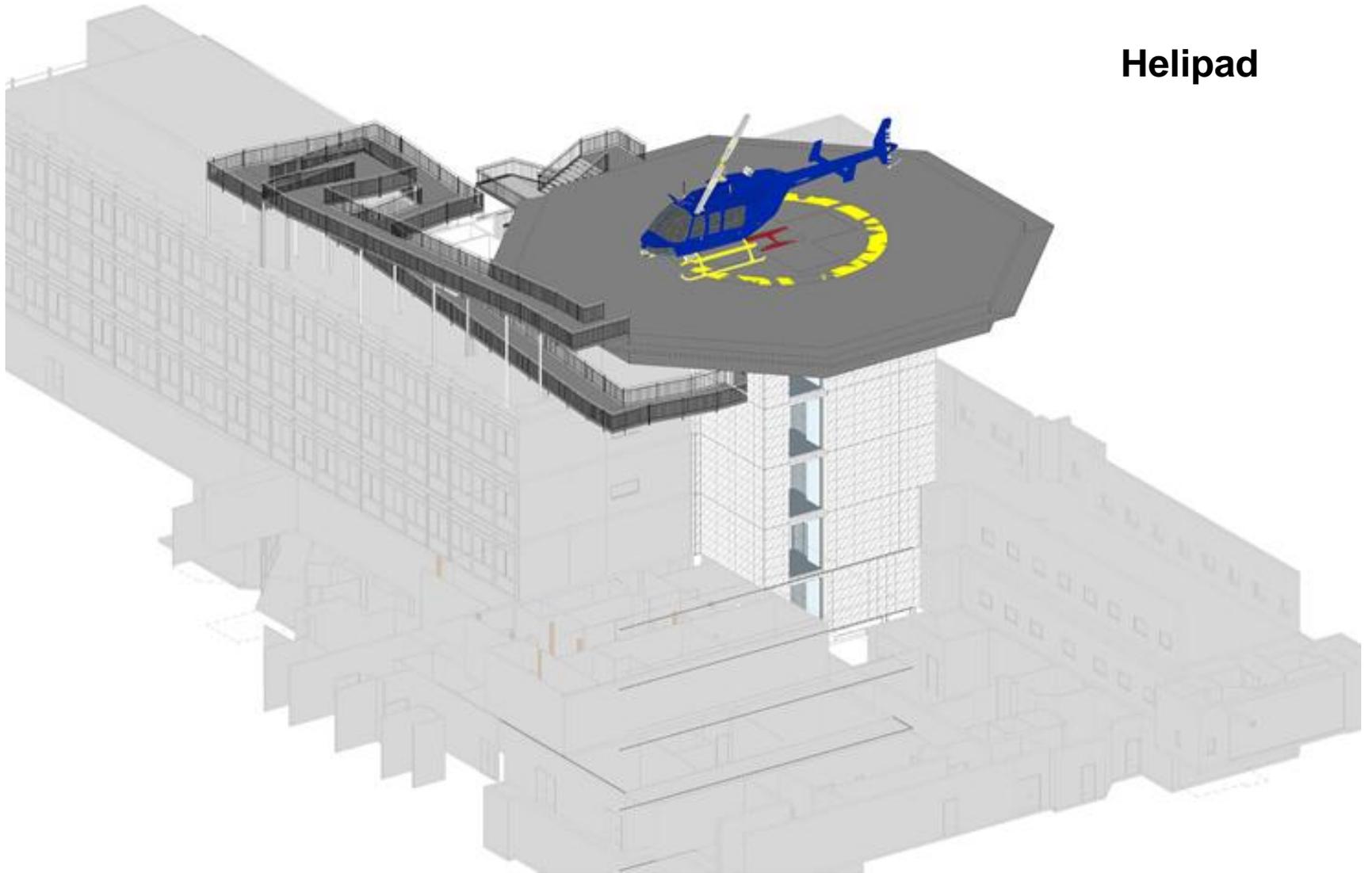
- Ground investigations complete. Report awaited
- Foundations generally expected to be pads bearing into fractured rock chalk. Ground water 10m+ down. Little significant contamination.
- Working up site wide drainage strategy and starting to agree design parameters with LPA. LLFA and Thames Water.
- Structures generally framed, but type depends on use:
- Energy centre – steel frame, 170 thick concrete / metal deck upper slabs. Ground bearing RC floor. Pad foundations other than the chimney. High loadings.
- Helipad – steel structure on a braced steel frame. Piled foundations because of uplift.
- New CCU and ASB – likely RC frame to address vibration responses required by HTM 0801 and flat slab type where possible to keep floor plates shallow and for ease of services distribution and future flexibility.
- Lewsey Road Multi-Storey Car Park – Steel framed, concrete / metal deck. Long span column free space to facilitate easy circulation and parking.

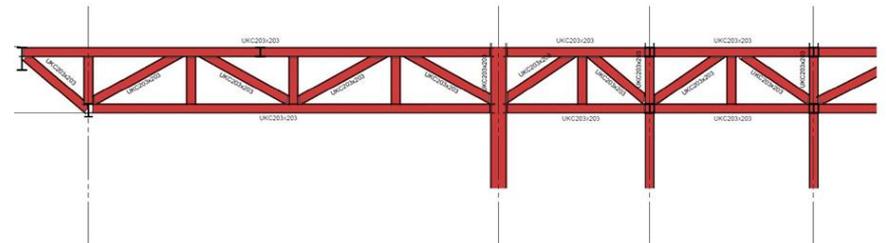
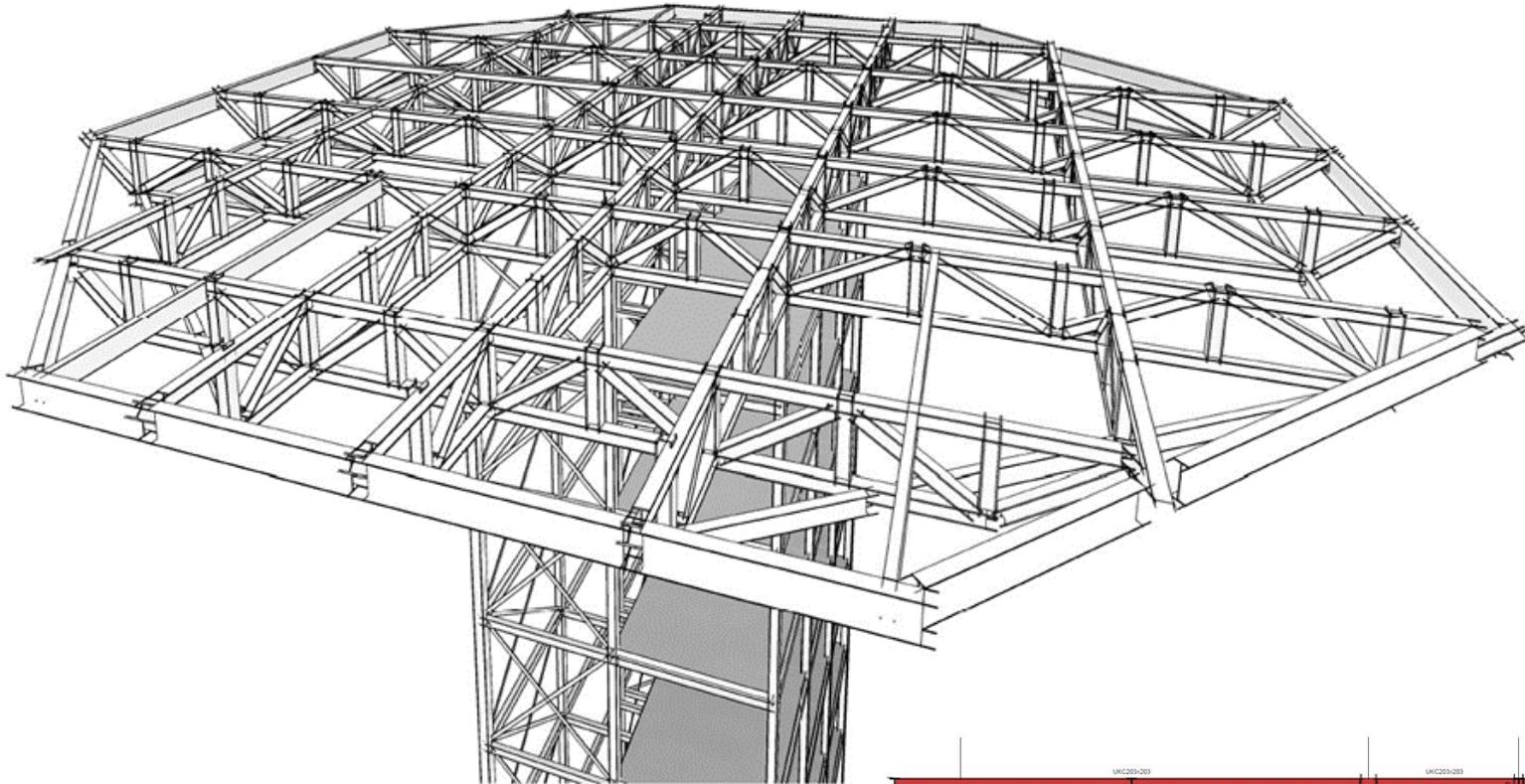
Energy Centre Frame – structural steelwork.

Up to 30kN/m² imposed loading on first floor.



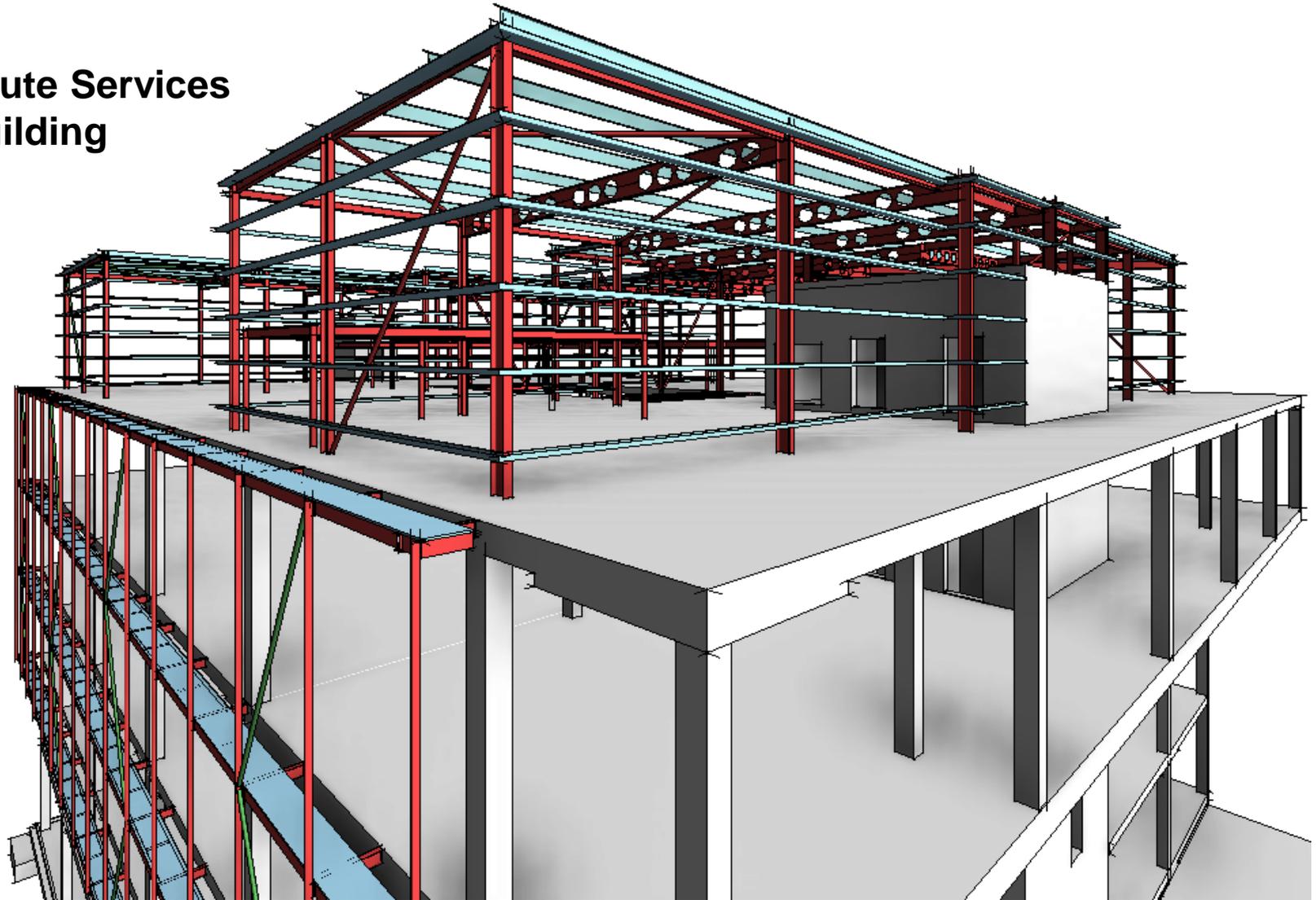
Helipad

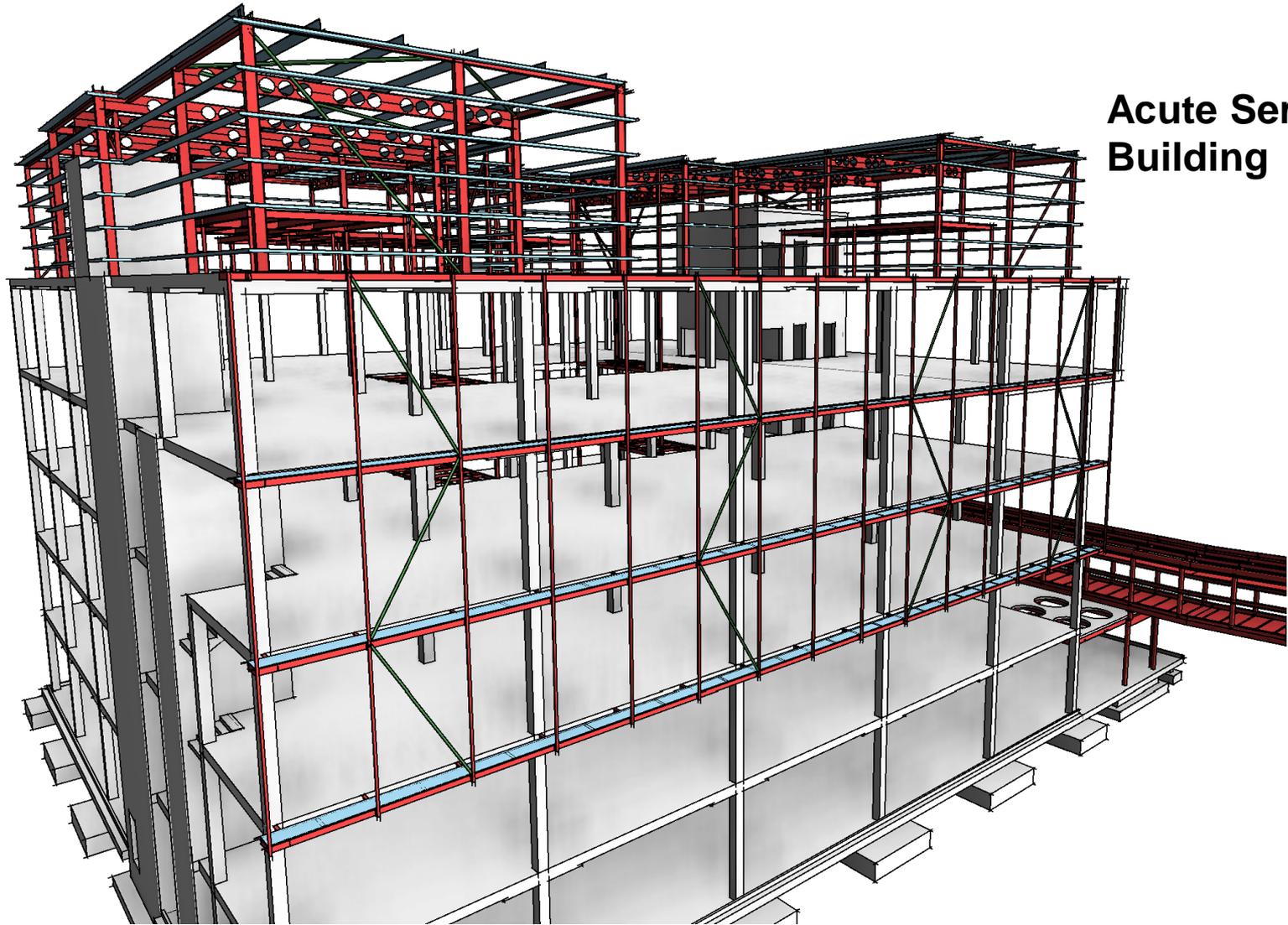




Helipad: Braced steel frame with cantilevered deck

Acute Services Building





Acute Services Building

Lewsey Road MSCP – Clear open spaces to enhance user experience



Planning Strategy

Gareth Wilson, Barton Willmore

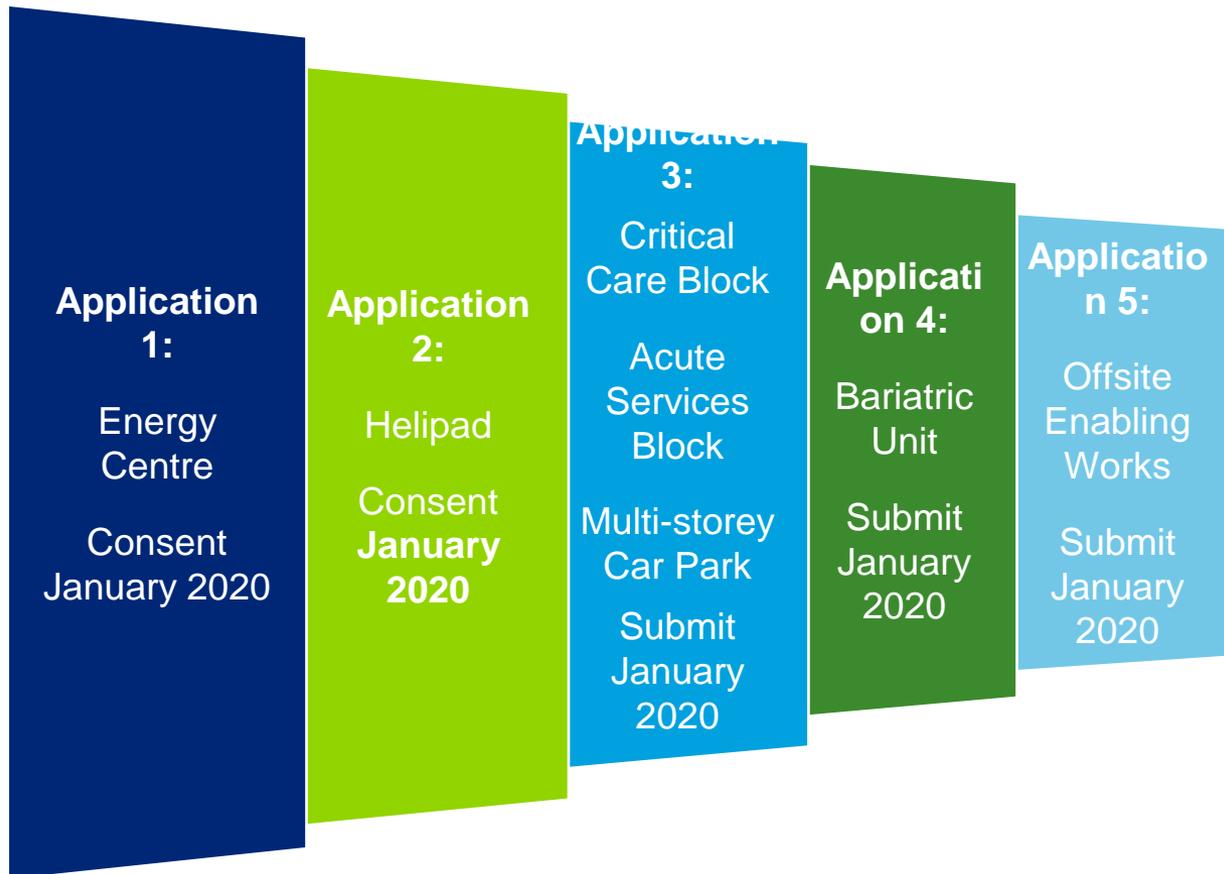


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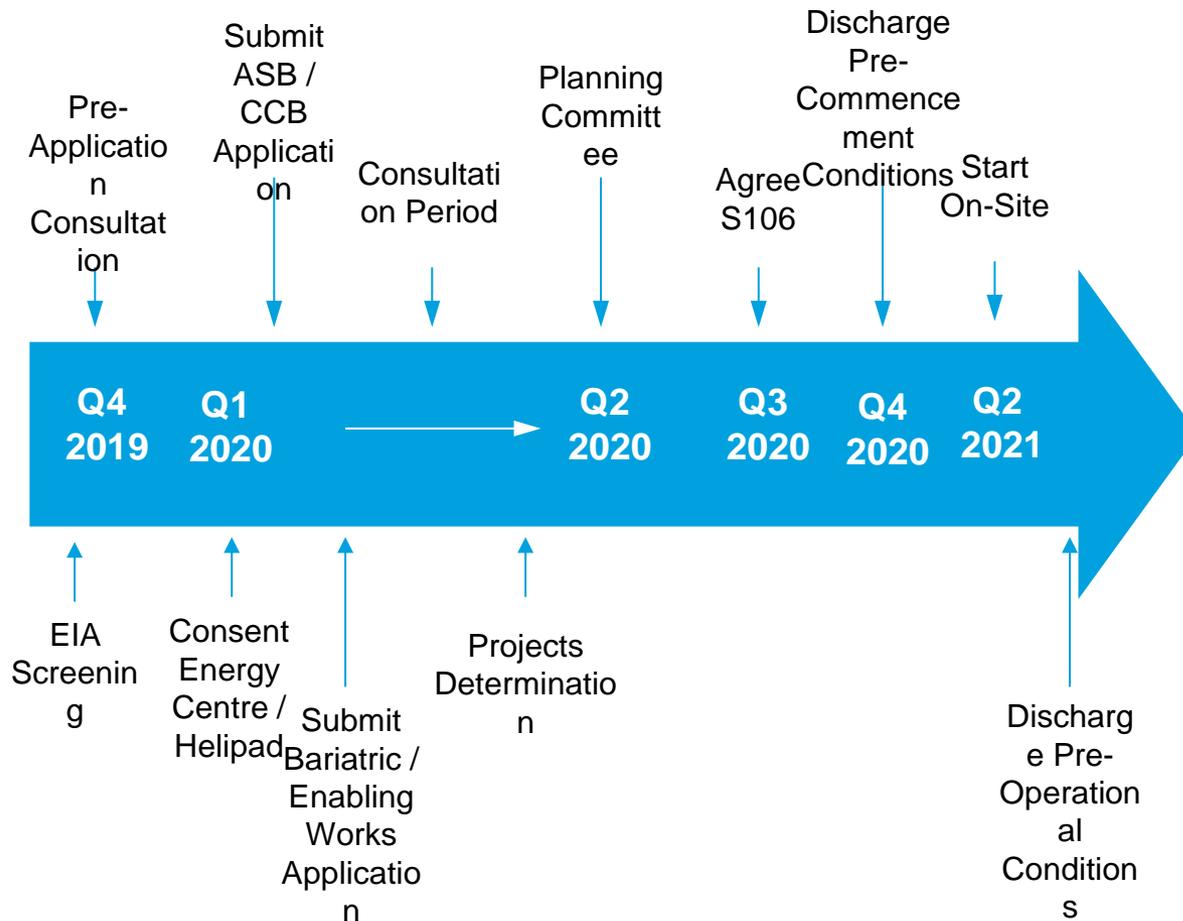




Suite of Applications for Planning Permission



Planning Programme

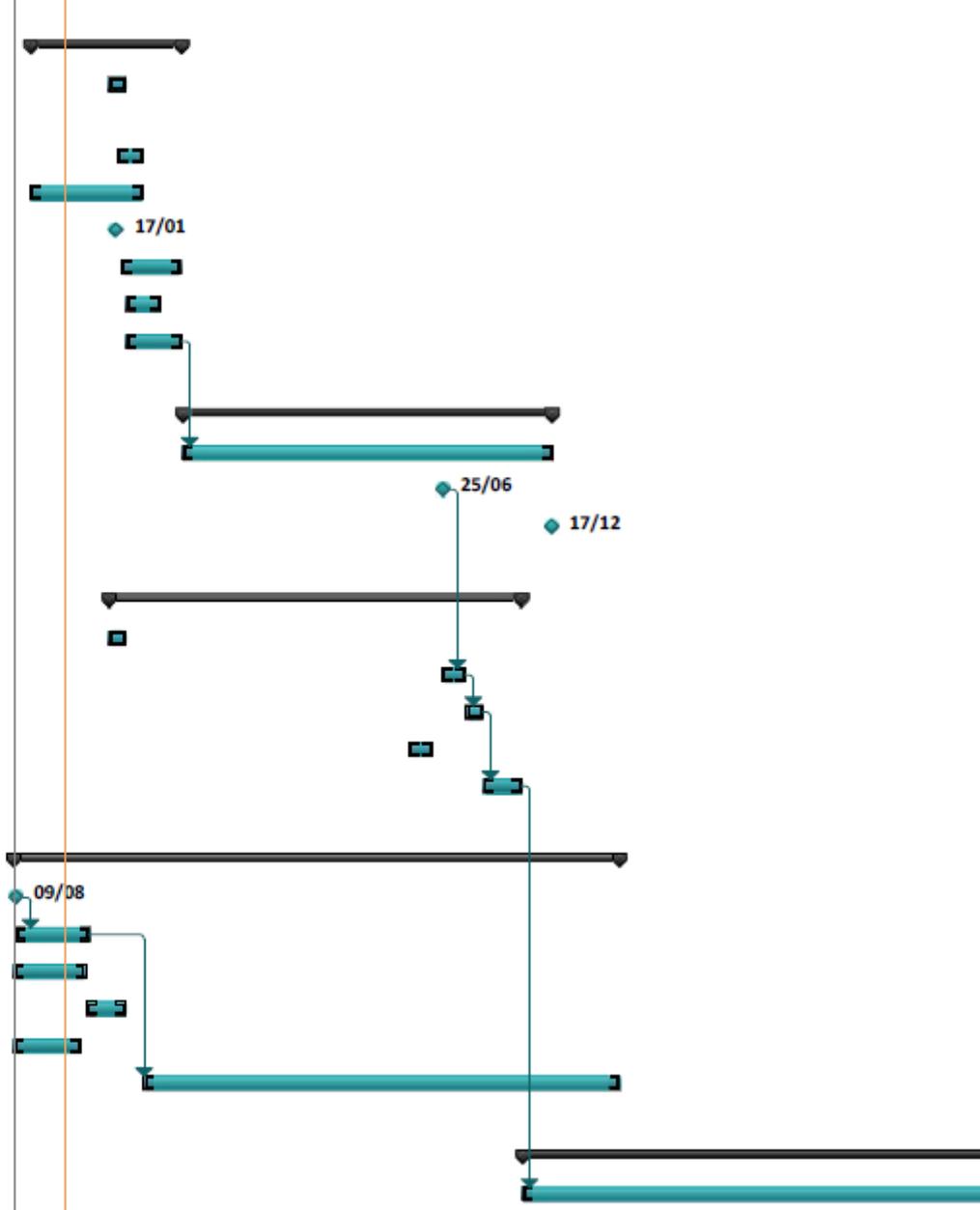


Programme

David Hartshorne, Programme Director



Enabling works	175 days	Mon 02/09/19	Fri 01/05/20	
Temporary accomm. Block 38	20 days	Mon 06/01/20	Fri 31/01/20	
Surveys	30 days	Mon 20/01/20	Fri 28/02/20	
Asbestos removal	130 days	Mon 02/09/19	Fri 28/02/20	
Submit planning	0 days	Fri 17/01/20	Fri 17/01/20	
Planning	68 days	Mon 27/01/20	Wed 29/04/20	
Service diversions	40 days	Mon 03/02/20	Fri 27/03/20	
Demolition/clear site	65 days	Mon 03/02/20	Fri 01/05/20	
Office block	425 days?	Mon 04/05/20	Fri 17/12/21	
Construction	425 days	Mon 04/05/20	Fri 17/12/21	10
Office area complete	0 days	Fri 25/06/21	Fri 25/06/21	
Critical care complete	0 days	Fri 17/12/21	Fri 17/12/21	
Block 28	475 days	Mon 06/01/21	Fri 29/10/21	
Surveys	20 days	Mon 06/01/21	Fri 31/01/21	
Move staff	26 days	Fri 25/06/21	Fri 30/07/21	14
Asbestos removal	20 days	Mon 02/08/21	Fri 27/08/21	19
Service diversions	26 days	Mon 03/05/21	Mon 07/06/21	
Demolition/clear site	45 days	Mon 30/08/21	Fri 29/10/21	20
Energy centre	695 days	Tue 06/08/19	Mon 04/04/22	
Submit planning	0 days	Fri 09/08/19	Fri 09/08/19	
Planning	84 days	Fri 09/08/19	Wed 04/12/19	25
Design	84 days	Tue 06/08/19	Fri 29/11/19	
Procurement	45 days	Mon 02/12/19	Fri 31/01/20	
MSA	77 days	Tue 06/08/19	Wed 20/11/19	
Construction	546 days	Mon 02/03/20	Mon 04/04/22	26
Acute Services block	645 days	Mon 01/11/21	Fri 19/04/24	
Construction	645 days	Mon 01/11/21	Fri 19/04/24	22



Overview	Task		Project Summary		Inactive Milestone		Manual Summary Rollup		Deadline
	Split		External Tasks		Inactive Summary		Manual Summary		Progress
	Milestone		External Milestone		Manual Task		Start-only		
	Summary		Inactive Task		Duration-only		Finish-only		

Wrap Up

David Hartshorne, Programme Director



Questions and Answers



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