Project RED

Manchester Royal Infirmary

Design & Access Statement

Manchester University NHS Foundation Trust

November 2020

DAY

NHS
Manchester University
NHS Foundation Trust

Revision A - Nov 2024: Updated for Section 73 Minor Material Amendment
Revision B - Dec 2024: Section 07 added

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This Design and Access Statement has been prepared by DAY Architectural, with input from others, on behalf of Manchester University Hospitals NHS Foundation Trust and accompanies an application for detailed planning permission at the Oxford Road Campus, Manchester.

The design has been developed in conjunction with:

Integrated Health Projects - Contractor
Manchester University Hospitals NHS Foundation Trust - Client
MACE - Project Manager
AJP - Civil and Structural Engineers
Hoare Lea - Service Engineers
Vertica - Lift Engineers
AEC - Acoustic Consultants
OFR - Fire Consultants
Scott Hughes Design - Sustainability Assesses
WSP - Transport Engineers
Hoare Lea - Lighting Engineers

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DAY

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Introduction &
Overview

00 Introduction

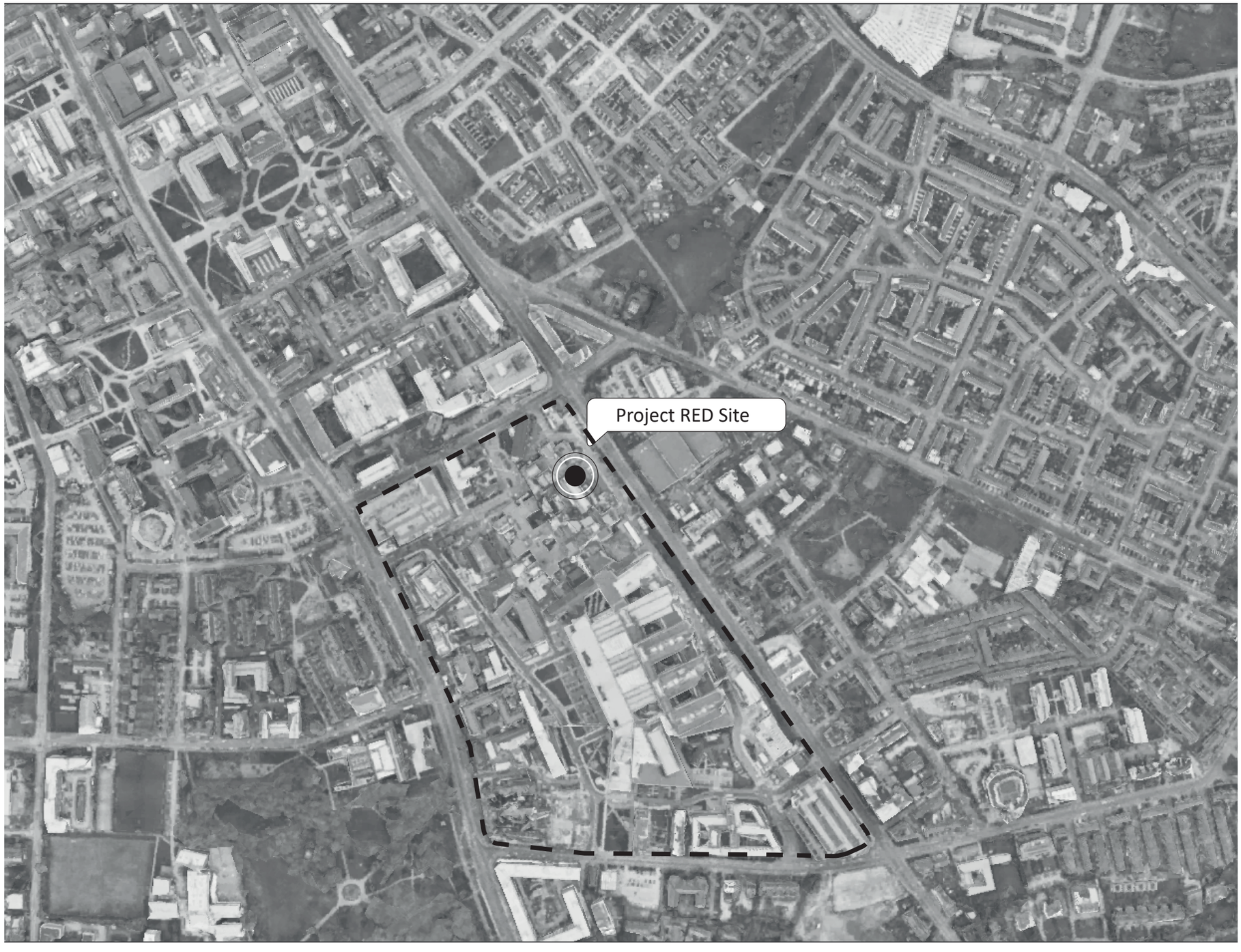
Overview

0.0 Introduction

The purpose of the report is to give an overview of the project from the early concept design stages, through the history and background of the development finishing with the final scheme.

We believe that good design stems from the underlying ‘Big Idea’ or KDP (Key Design Principles) which should be strong enough to drive the whole design process and create a framework for design decision making throughout the evolution of a scheme, creating a sense of consistency and completeness.

DAY’s Key Design Principles for Project RED are just that; a catalyst from which the rest of the design stems. It should be a singular solution to the problems and opportunities identified through initial analysis of the brief, context and typology which will hold the design together throughout the process; a constant focus, regardless of the project stage, and a defender of the design solution.



00 Introduction

The Vision

0.1 Overview

DAY and its Design Partners successfully supported IHP on their P22 procurement bid for the proposed new build Emergency Department (Project RED) at Central Manchester Hospital, on behalf of Manchester University Hospitals NHS Foundation Trust. The Design Team inherited a Stage 4 proposal completed by ADP Architects, Redworth Associates and WSP which captured an alternative building design as detailed within Section 2 of this report.

The Design Team embarked on an initial due-diligence to understand the current design solution, whilst also looking at alternatives to provide a more efficient and better resolved design proposal.

As part of the P22 bid, the Trust altered the original scope of works to remove the internal refurbishment works to the ED and solely concentrate on the delivery of the new build. Aswell as this, The Trust added in the additional requirement for 3 additional Theatres with associated recovery to support a total of 6 no. new Theatres at Level 2 to seamlessly integrate with the existing Level 2 Theater floor.

The Design team reviewed; challenged, analysed and agreed some radically different design solutions to that which were originally developed, with this report providing a complete overview and analysis of the development of the Architectural, Mechanical, Electrical and Structural Proposals for Stage 3 sign off, aswell as critical design input from an independent Fire, Acoustic, and Lift Consultants which are also detailed within this report.

The primary outputs for RIBA Stage 3 are to utilise and develop the agreed Stage 4 information as an initial foundation for the progression and further development of the Project Brief and Design Deliverables. This development included extensive Clinical Stakeholder Engagement with all Clinical Stakeholder Group Leads; Extensive Operational & FM Non-Clinical Stakeholder Engagement, Site Surveys & Due Diligence Activities.

These reviews focused on the following keys areas of the initial ADP Stage 4 report: -

- Design 'Iteration and Testing'
- Flows and functions
- Critical Adjacencies and Clinical Links
- Seamless integration with internal ED refurbishment works, which are to be carried out under a separate contract.
- M&E infrastructure
- Alternative Plant Location
- Structural Assessment to achieve alternative design solutions
- Existing fabric constraints
- Testing the Schedule of Accommodation;
- Rooms Uses, Areas and alternative accommodation

0.2 The Vision

Manchester University Hospitals NHS FT have an aspiration to deliver a world class Clinical facility for Greater Manchester's Adult population and incorporate new models of care for high acuity care at Central Manchester Hospital

0.3 The Brief

Project RED - The Redevelopment and Extension of the Adult's Emergency Department consists of the two- phased delivery of a four storey extension to the existing Emergency Department consisting of Minors, Majors, RAU and Resus at Ground Floor Level, alongside Level One Administration & Plant, Level Two Theatre Suite consisting of 6 ultra-clean Theatres, with a Level 3 rooftop plant.

Adult's Emergency Department

A 1460m^2 extension to the Ground Floor Emergency Department comprising a new 5 Bay Triage / RAU with Ambulance Handover, 10 new Resus Bays, 11 new Minors Bays, 12 new Majors Bays with 1 new CT scanner and associated support accommodation.

Administration Accommodation

New admin space and to support up to 50 members of staff alongside a full staff change area to support the ED.

Theatre Suite

6 new UCV Theatre Suites and 8 bay dedicated Recovery Area, with supporting ancillary accommodation.

00

DAY ARCHITECTURAL

Selection of Previous Healthcare Projects













00

Introduction

Location



00

Project Summary

Information & Stats

Site Area 4550m²

Beds Provided
Resus - 10
Minors - 10
Traige - 5
Majors - 12
Recovery Bays - 8

Car Parking Spaces
29 Standard + 6 Disabled

Location North of MRI Site

Value £23 million

Internal Area (GIA) 5174m²

01 Site Context & Analysis

01

Site & Context Analysis

Healthcare Context

1.0 Healthcare Context

The need for a New Emergency Department has been driver by a number of key factors including the condition and future viability of the existing General Hospital Estate and the need for more acute care to relieve existing departmental pressures.





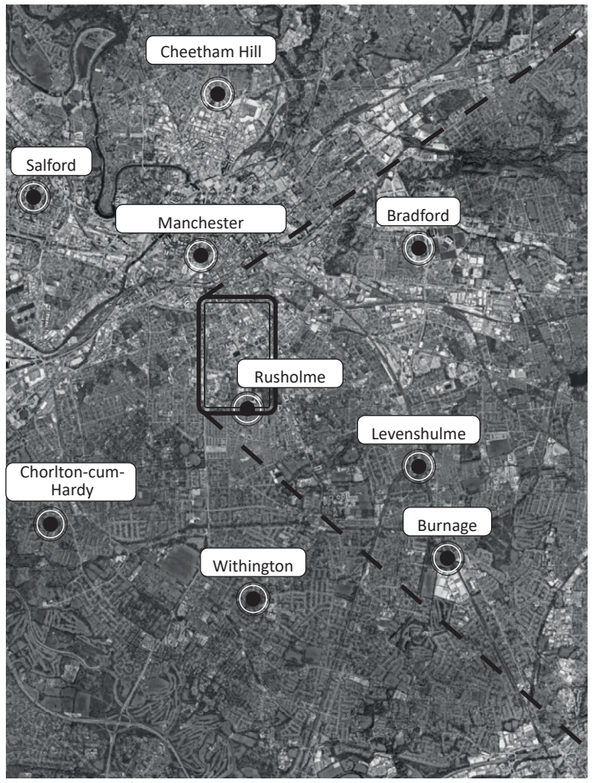




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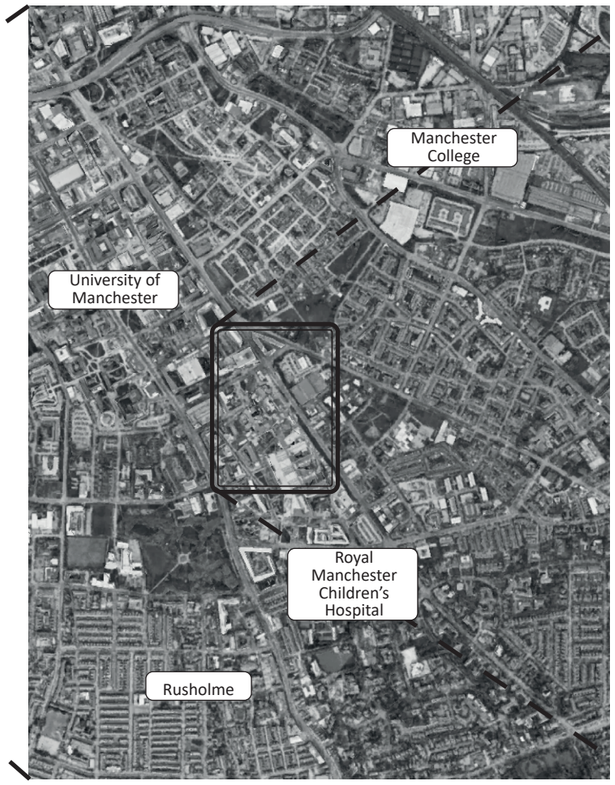
Site & Context Analysis

Macro to Micro Scale



1.1.1 Macro Context

Central Manchester Hospital is a large University teaching hospital in Manchester, England. The Hospital is operated by MFT NHS FT, one of the largest NHS trust in the country.

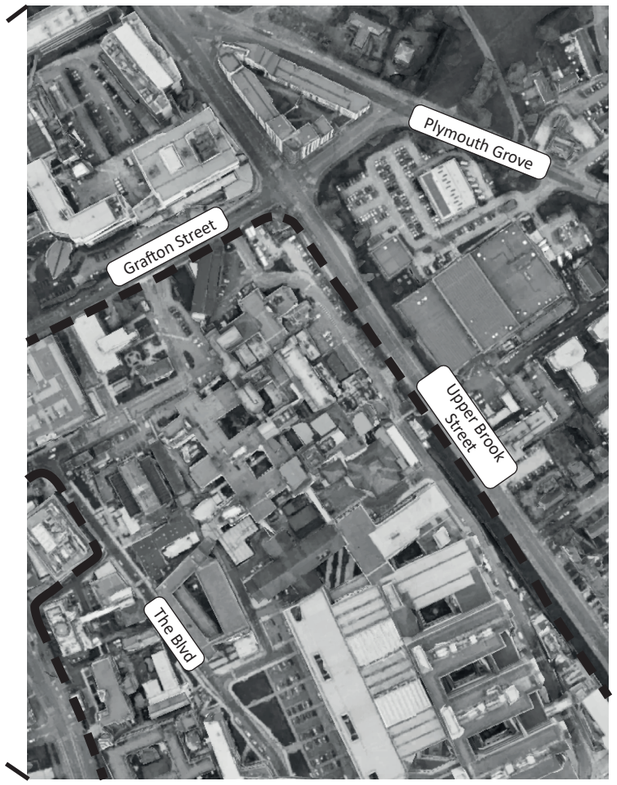


1.1.2 Meso Context

MFT are an integrated provider of hospitals, community and Primary Care services, including the University Teaching Hospital.

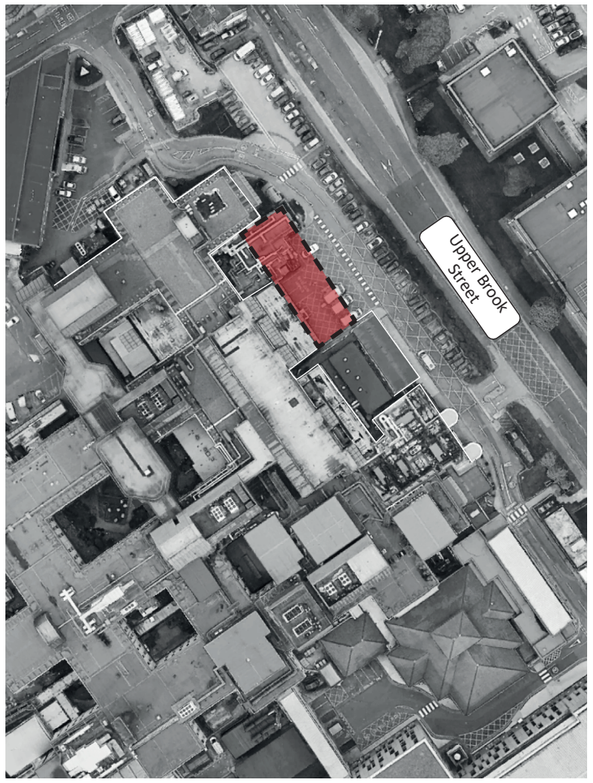
Formed in 2017 MFT has been responsible for running a family of nine hospitals across Six separate site, providing a wide range of services from comprehensive local general hospital care through to highly specialised regional and national service.

MFT are the main provider of hospital care to approximately 750,000 people in Manchester and Trafford and the single biggest provider of specialised services in the North West of England.



1.1.3 Micro Context

Central Manchester Hospital is about 2 miles south of Manchester City Centre and is easily accessible by public transport. The Central Manchester hospital is conveniently located either side of Oxford Road and Upper Brook Street, 2 main arterial route south of Manchester City Centre. There are bus stops that surround the site



1.1.4 Proposed Site

The proposed site for the new Emergency Department is located to the South East of the Central Manchester Hospital site, with direct access off Upper Brook Street. The proposed Extension will be positioned on the main frontage of the upper brook street and will be very visible from the East and West approach.

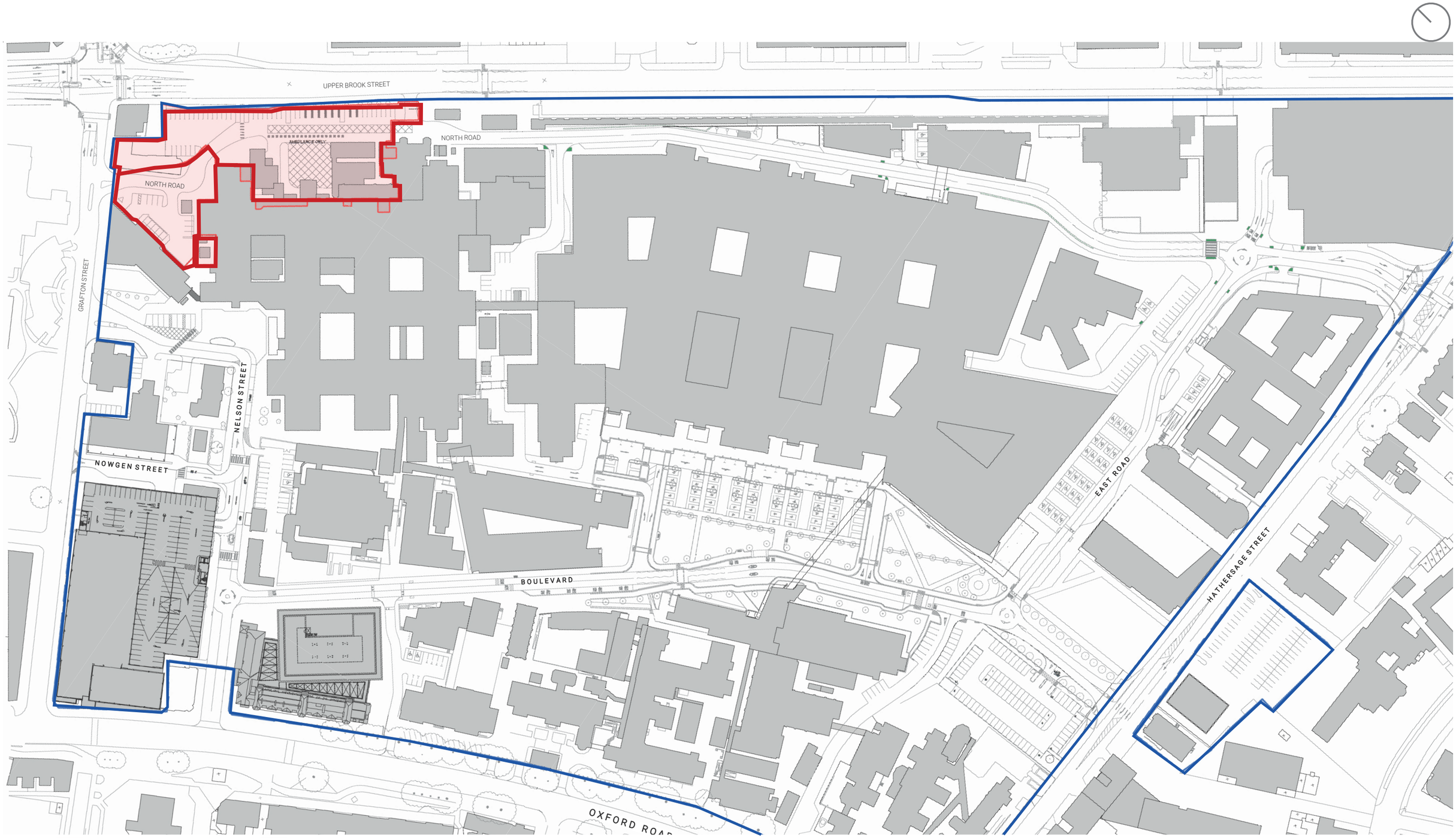
Site & Context Analysis

Site PFI Departmental Overview



Site & Context Analysis

Site Location Plan



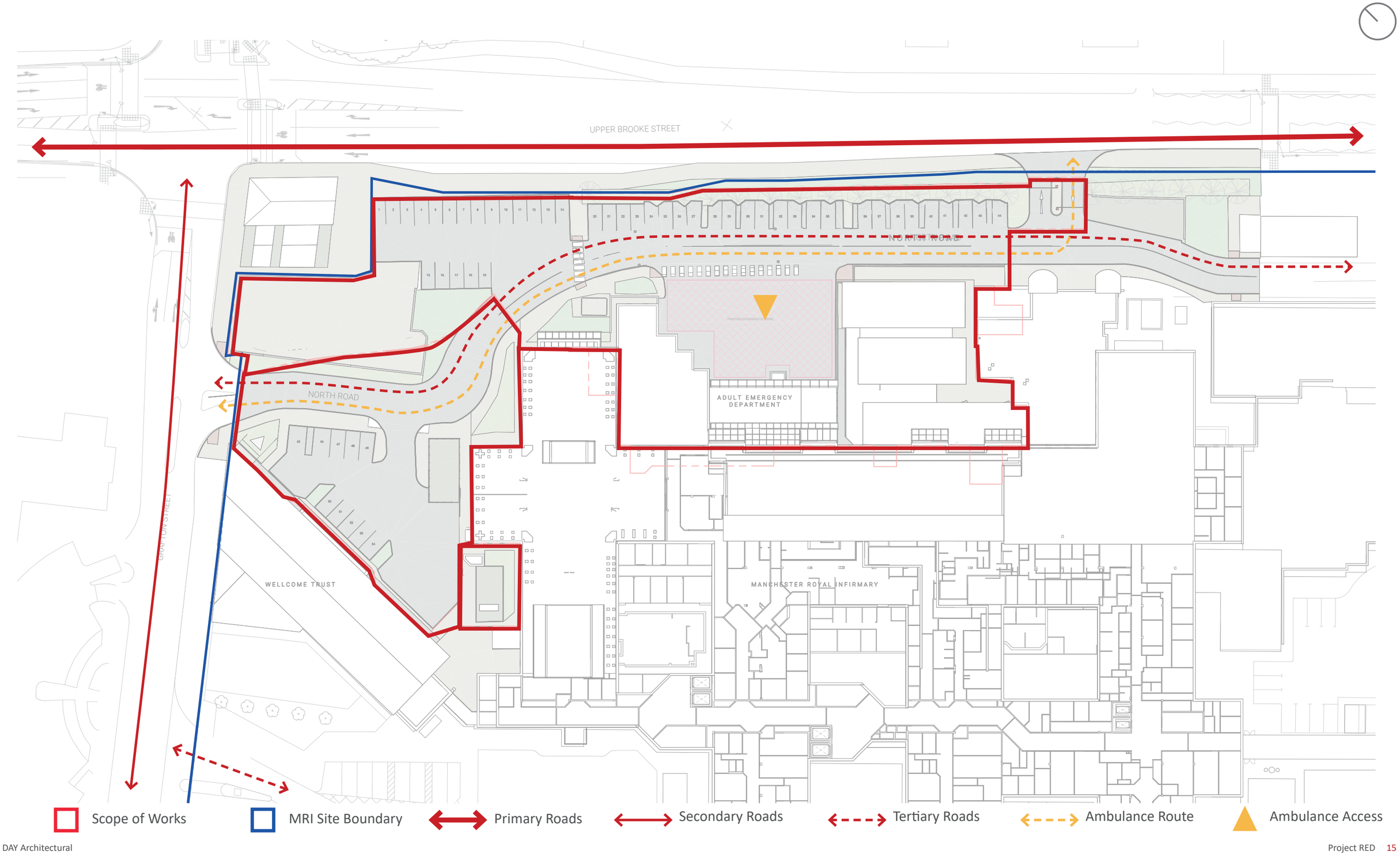
Scope of Works

MRI Site Boundary

01

Site & Context Analysis

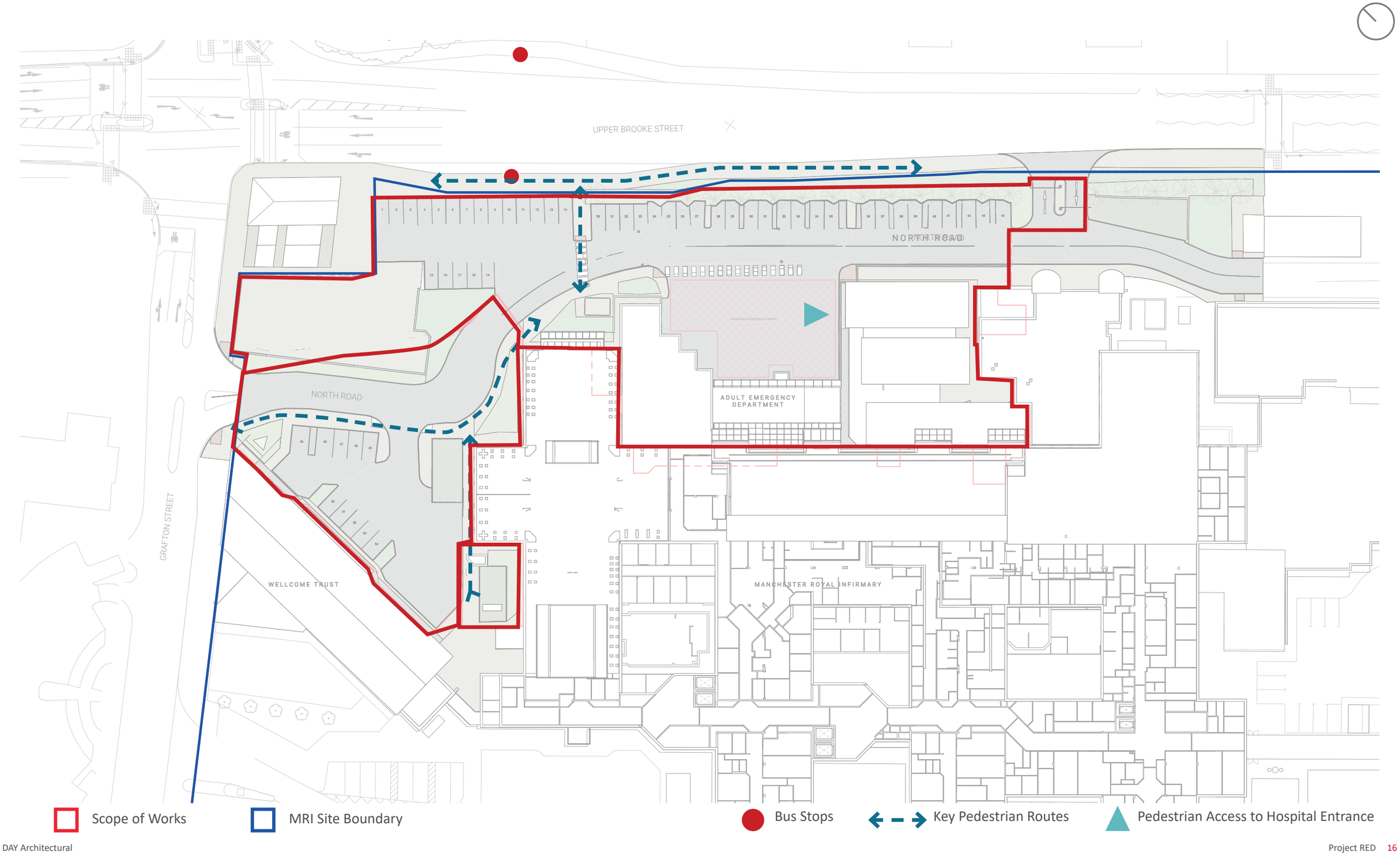
Vehicular Access



01

Site & Context Analysis

Pedestrian Access



01

Site & Context Analysis

Vehicular & Pedestrian Approach



Vehicle Approach_Grafton Street

One of the main approaches to the site for vehicles using North Road and car parks close to the site.



Vehicle Approach_North Street

North Road running past the site, currently shared between vehicles and ambulance route to A&E.



Vehicle Approach_Grafton Street to Nelson Street

Existing access to the East side of the site, leading to the Outpatients Department and Grafton Street Car Park.



Ambulance Approach_Entrance on Upper Brook St

Exclusive ambulance entrance from Upper Brook Street, allowing quick access to A&E.



Pedestrian Approach_Nelson Street

Existing route for pedestrians to access to the Entrance 1 from the West side, connecting the MRI with Nowgen Centre and the Grafton Street Car Park.



Pedestrian Approach_Main MRI Entrance

Existing approach from Nelson Street to Entrance 1 of Manchester Royal Infirmary.



Pedestrian Approach_Upper Brook Street

Existing direct approach to the A&E department from Upper Brook Street and cars parks on either side.

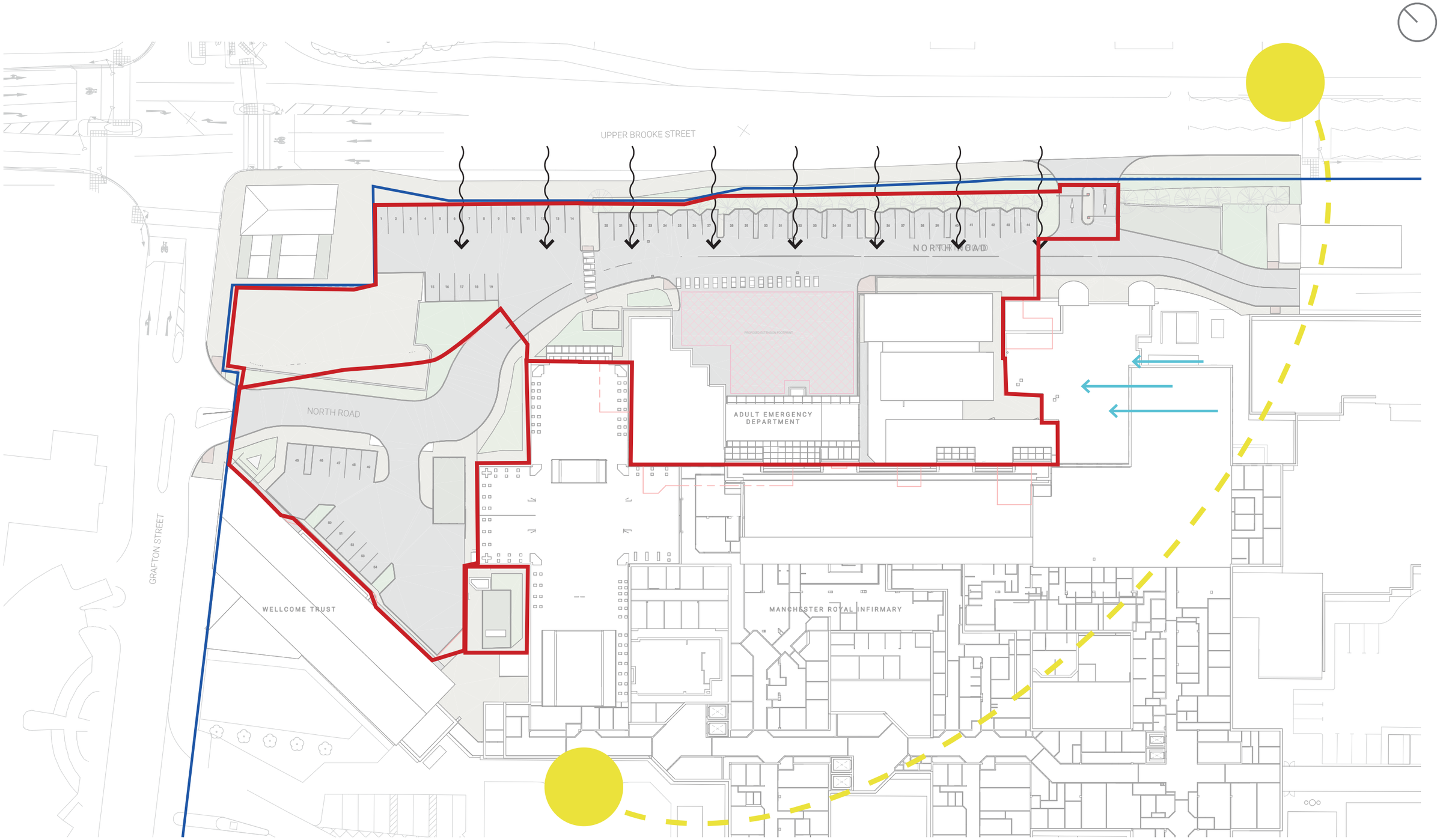


Pedestrian Approach_Upper Brook St Junction

Existing approach from the junction of Upper Brook Street and Grafton Street, where passers by get a glimpse of the site.

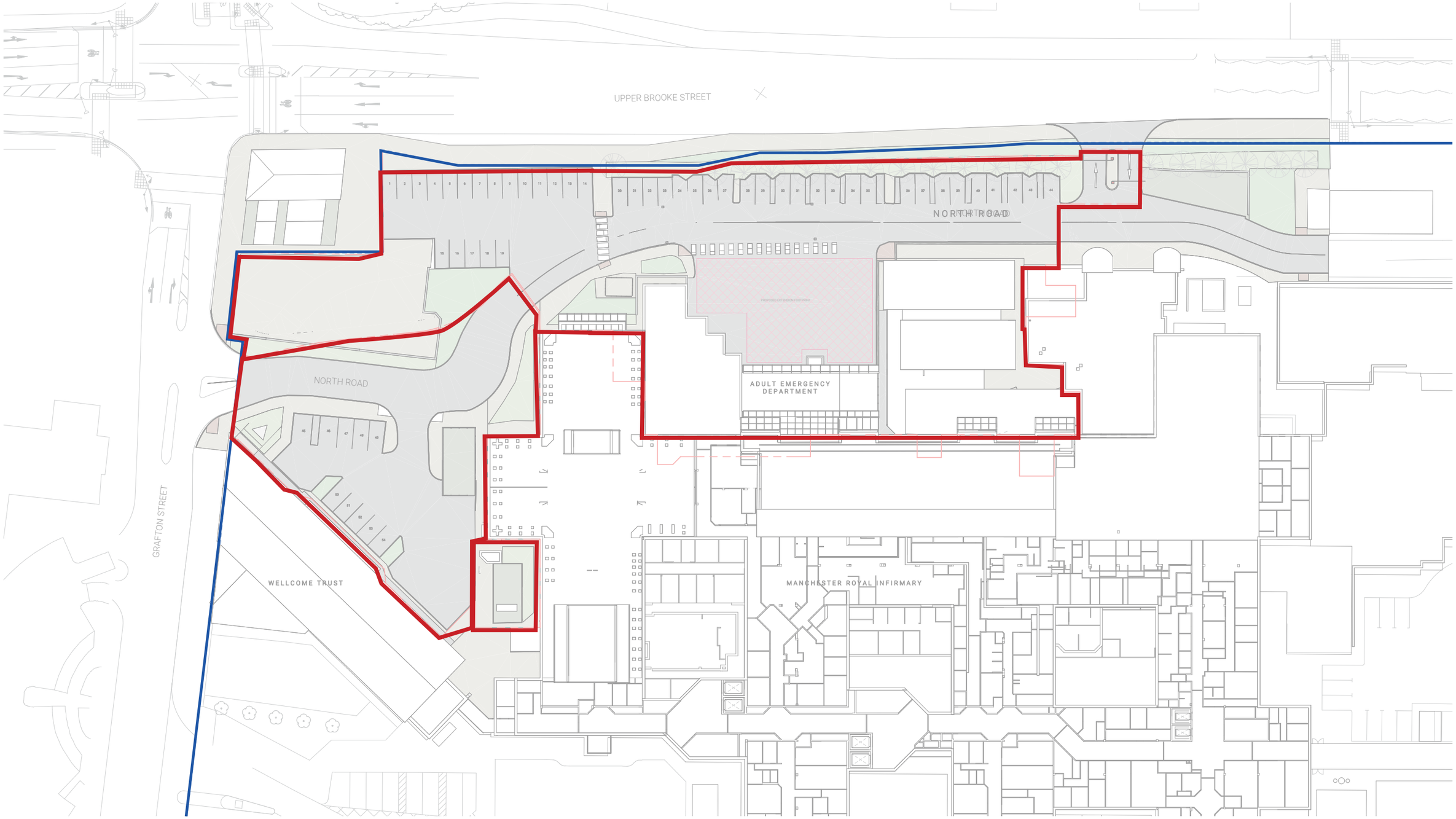
Site & Context Analysis

Existing Environmental Constraints



Site & Context Analysis

Existing Site Plan

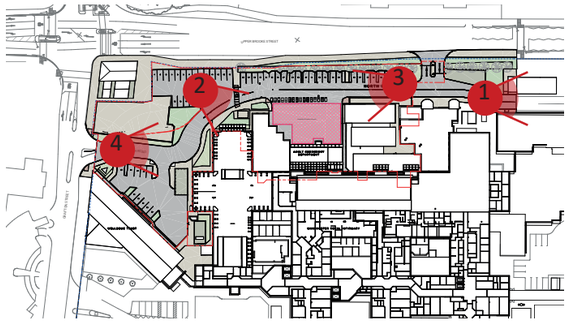


External Works GA Plan - Existing

01

Site & Context Analysis

Vehicular & Pedestrian Approach



Location Plan



1. Towards RMCH



2. Resus and Service Risers



3. Radiology Block



4. Grafton Street Approach

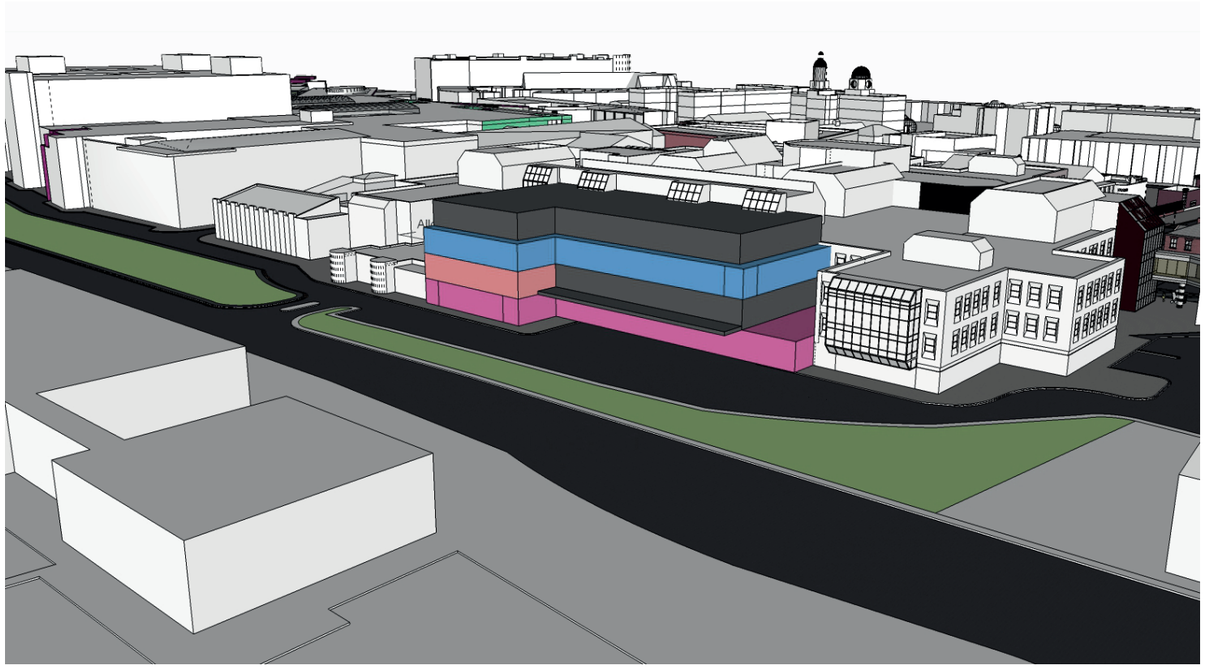
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Site & Context Analysis

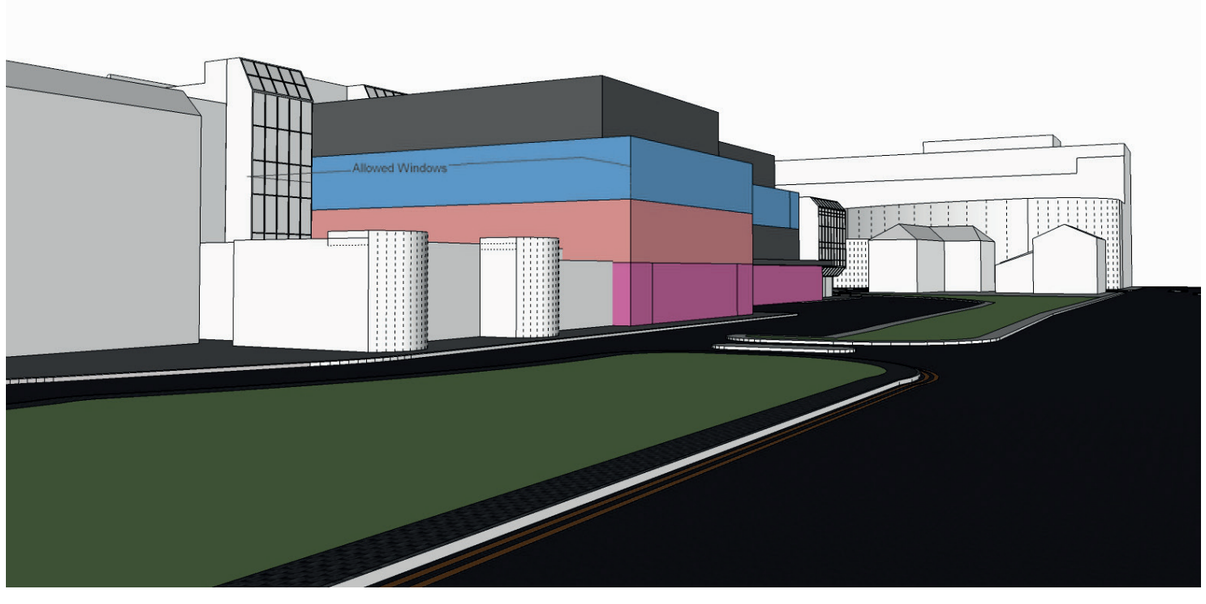
Existing Site Plan

1.1 Proposed Massing

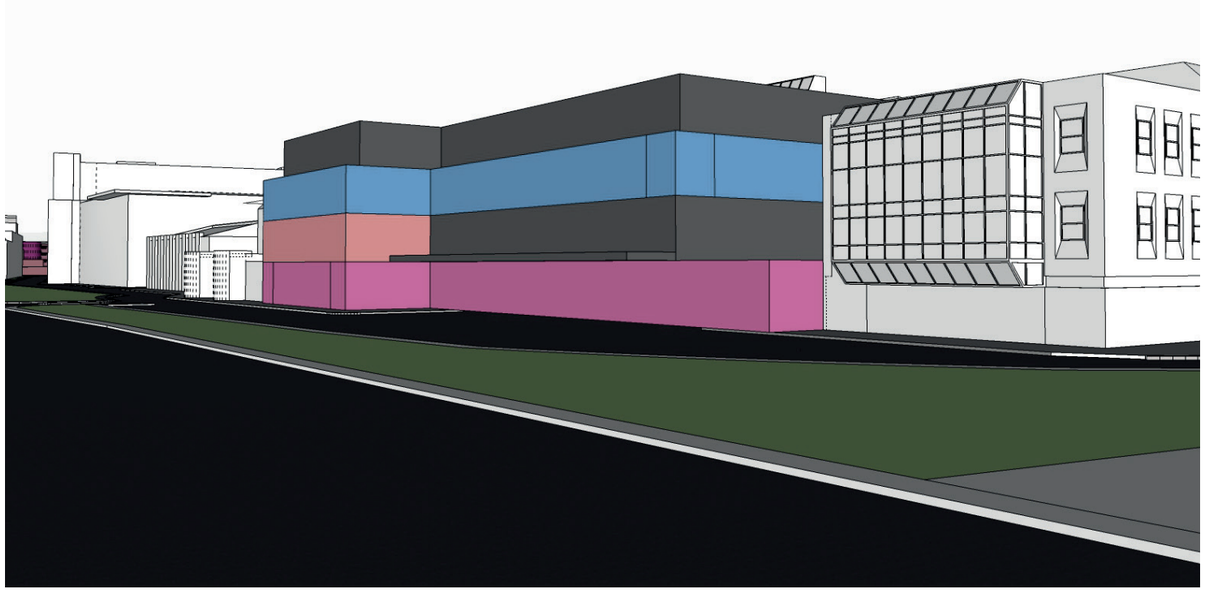
The proposed massing of the development was established by the functional internal schedule of accommodation. The design wanted to maximise the space proposed as the development zone, whilst considering all the internal key clinical adjacency and flow. As part of the initial design principles we wanted to try and balance the massing of the new build with the surrounding hospital building, so it didn't sit out of context with the wider site development. Another critical consideration was having the ability to link the existing hospital to the new extension, meaning that we have to tie the existing finish floor levels.



AERIAL VIEW



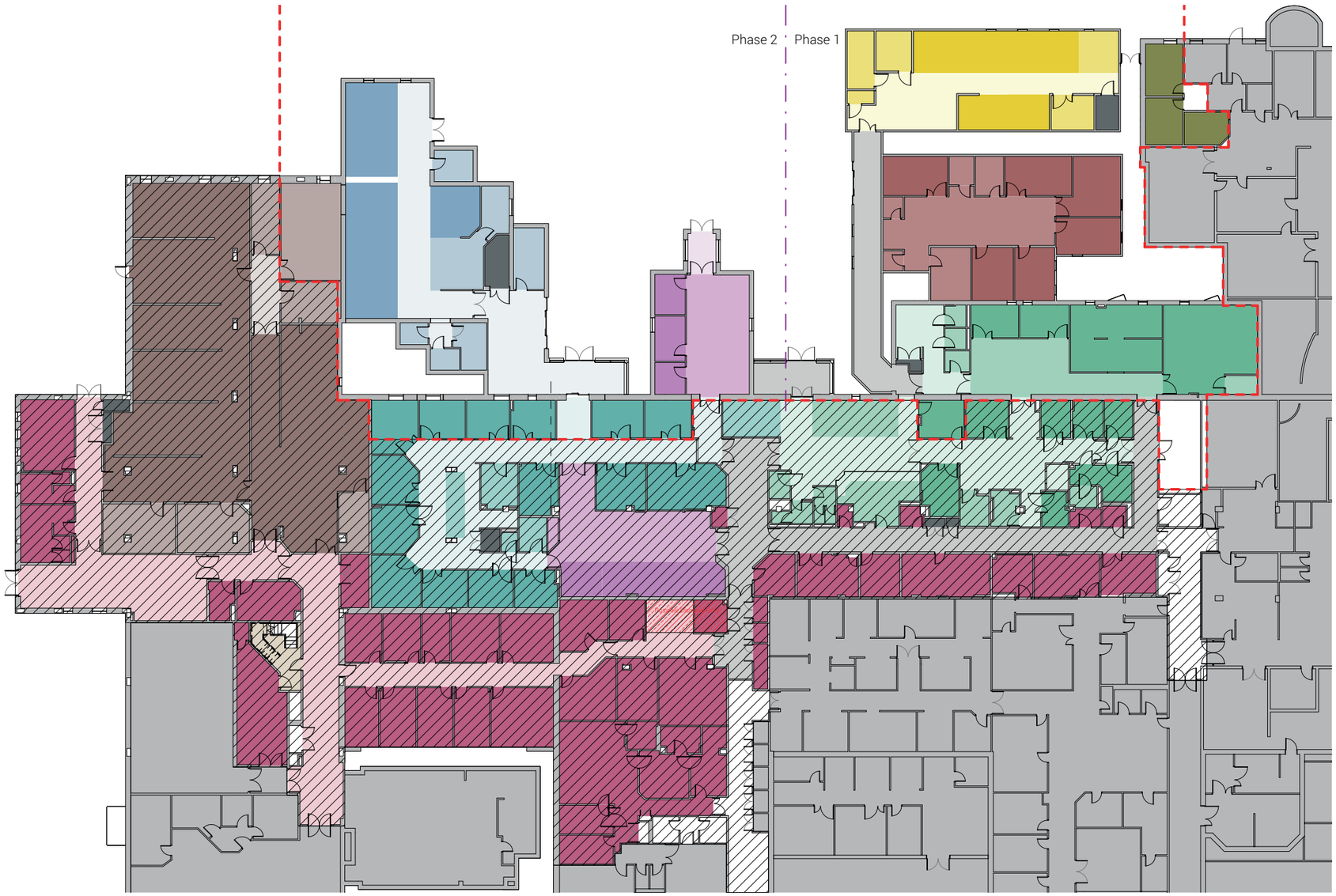
VIEW FROM UPPER BROOK STREET



VIEW FROM UPPER BROOK STREET

Site & Context Analysis

Existing Ground Floor Plan



Department Key

- Circulation
- ED Circulation
- ED Support
- Majors
- Majors Circulation
- Majors Support
- MEAM
- MEAM Circulation
- MEAM Support
- Minors
- Minors Cirulation
- Minors Support
- Plant
- Radiology
- Resus
- Resus Circulation
- Resus Support
- Specialist Medicine
- Specialist Medicine Circulation
- Specialist Medicine Support
- Triage
- Triage Circulation
- Triage Support
- Vertical Circulation
- WIC
- WIC Support

KEY:

Denotes Areas Outside of Scope

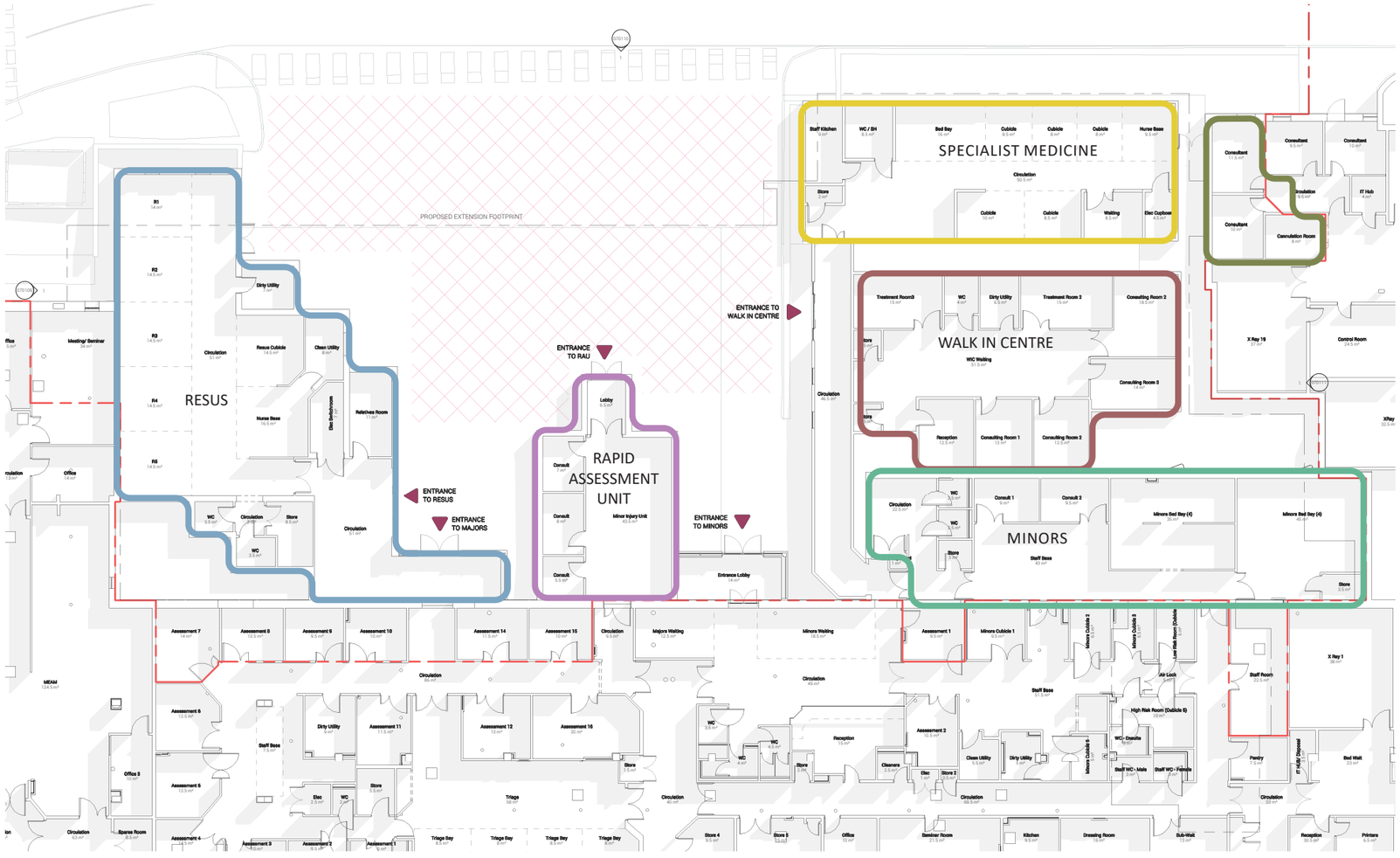
Denotes Internal Refurbishment of Ground Floor ED carried out under separate works package, Final Departmental Layout and Connections indicated.

Denotes Boundary of Work

Scope of Works

Site & Context Analysis

Existing Site Plan - Wider Department Overview



Plan - Level 00

ld accepts no responsibility for any costs, losses or claims whatsoever arising from these drawings, related documents unless there is full compliance with the Client or any unauthorised user of the following:

dimensions and levels are to be checked on site before construction and any discrepancies reported to the r.

Any discrepancies with site or other information is to be advised to the Architect / Designer and direction and re sought before the implementation of the detail.

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r of coordination, all relevant parties must check this information prior to implementation and report any e Architect / Designer.

CLIENT
Manchester University NHS Foundation Trust
IHP Integrated Health Projects by Vinci Healthcare Laing O'Rourke

PROJECT
Project RED

DRAWING
Existing Plan - Level 00

SCALE	FIRST ISSUED
1 : 100 @ A1	13/11/20

PROJECT	CLIENT REF	DRAWN BY	CHECKED BY
1031-20	RED	AL	JC

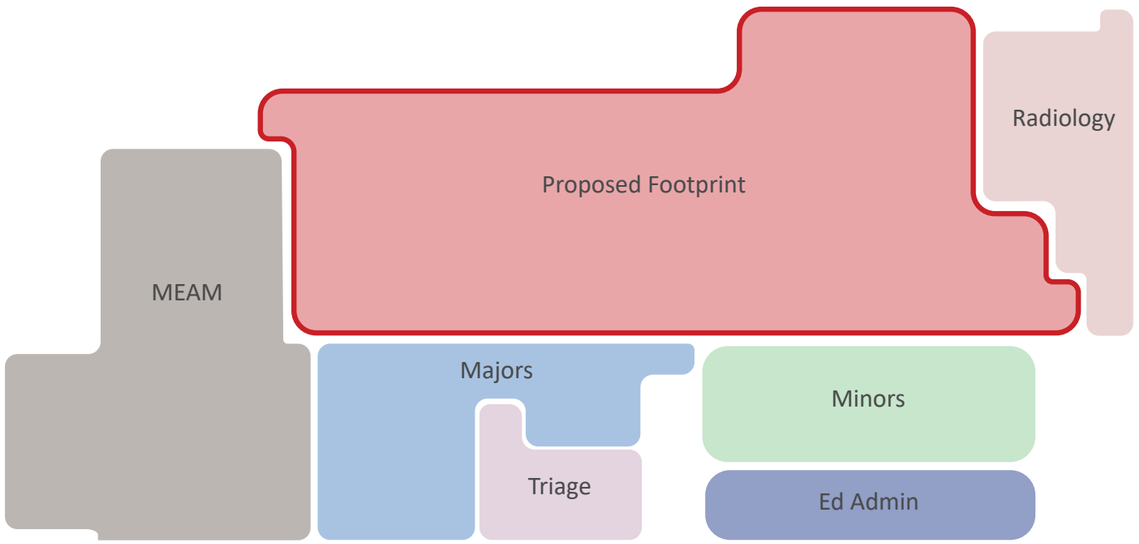
ORIGIN	VOLUME	LEVEL	TYPE	ROLE	NUMBER	REVISION
DAY	00	00	DR	A	070104	P01

DAY Architectural Ltd.
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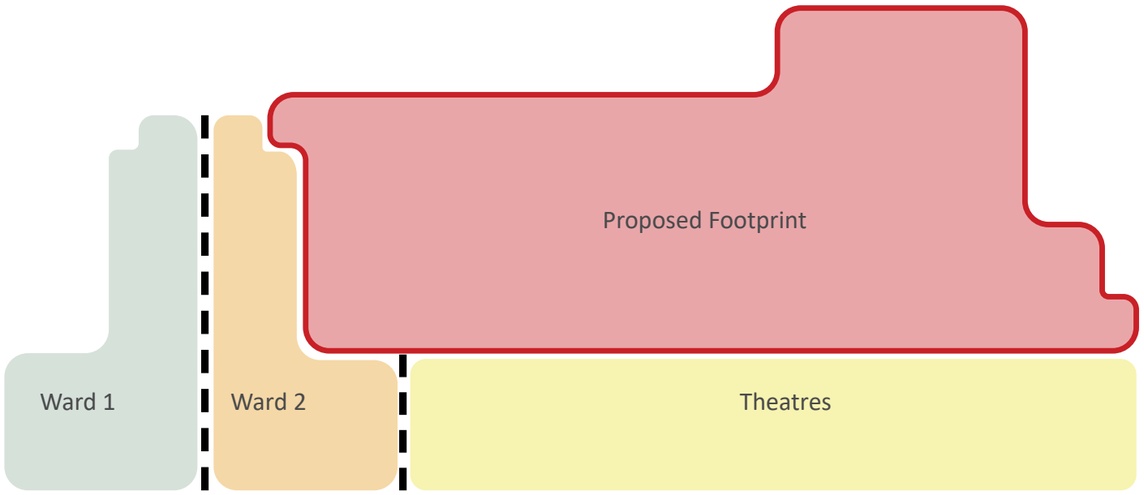
Phase Break line indicated, Refer to Section 5 - Phasing Strategy for Further Information

Site & Context Analysis

Existing Departmental Plans



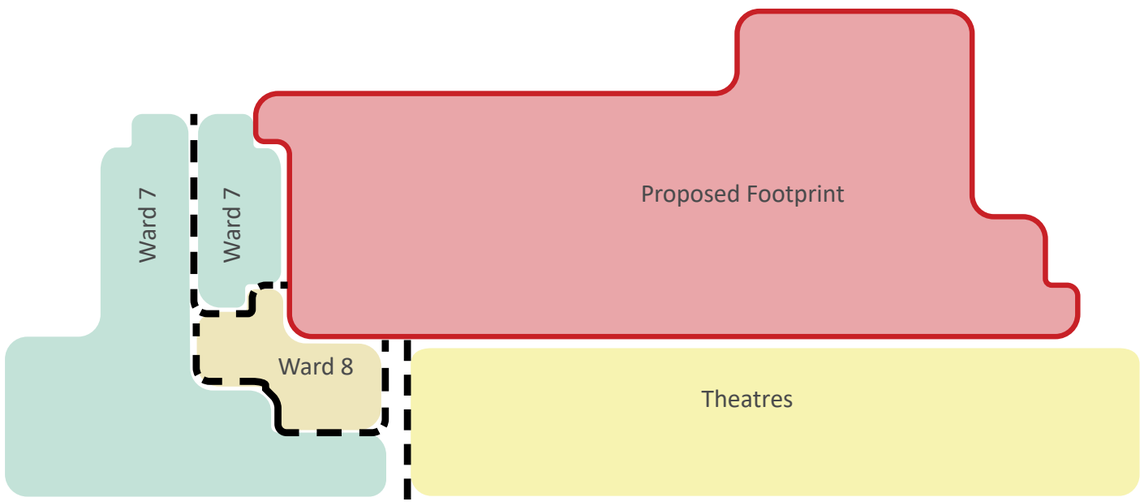
Level 0 Department Adjacencies



Level 1 Department Adjacencies

Denotes Scope of Works Boundary

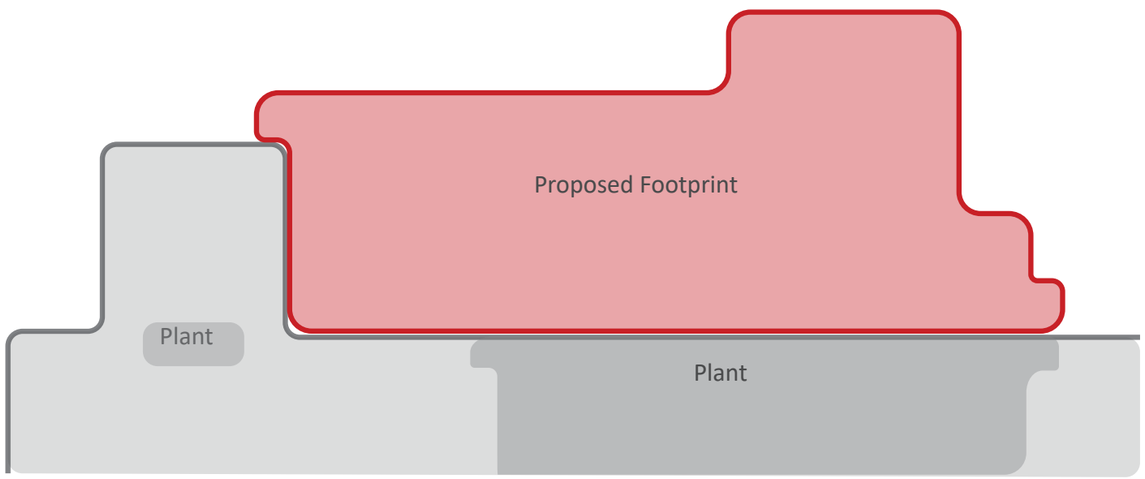
Denotes Department Boundary



Level 2 Department Adjacencies

Denotes Scope of Works Boundary

Denotes Department Boundary



Level 3 Department Adjacencies


Children's
Emergency
Department

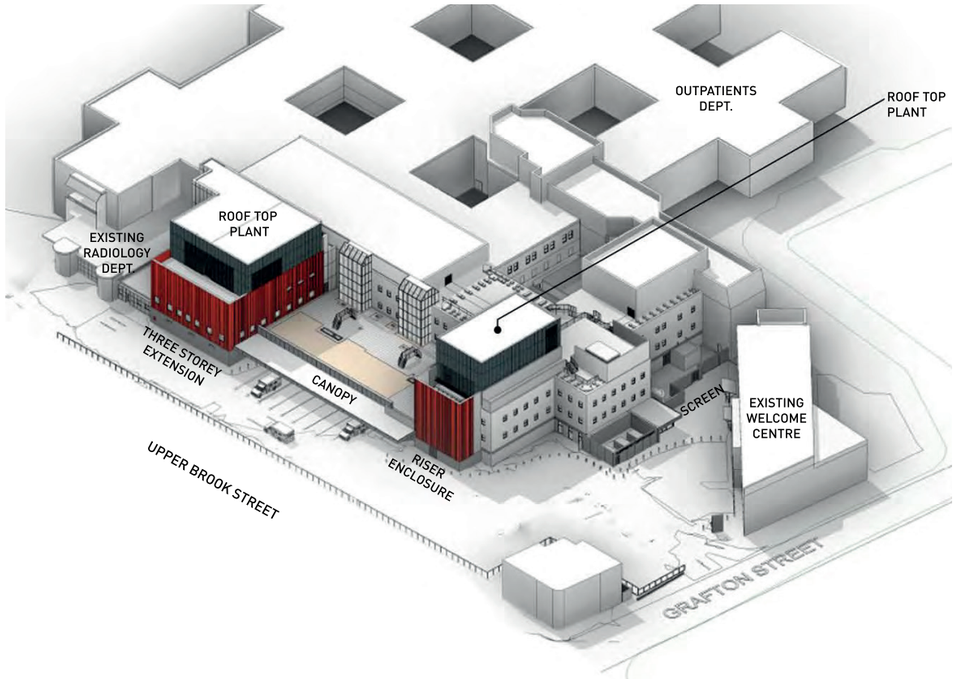
02

Design Development

As part of the design development, we had to review the Planning submission for the previous design proposal, done by APD. Due the Trust changing the functional content, the new design proposal has a very different massing and design philosophy. As detailed in the following section.

Design Development

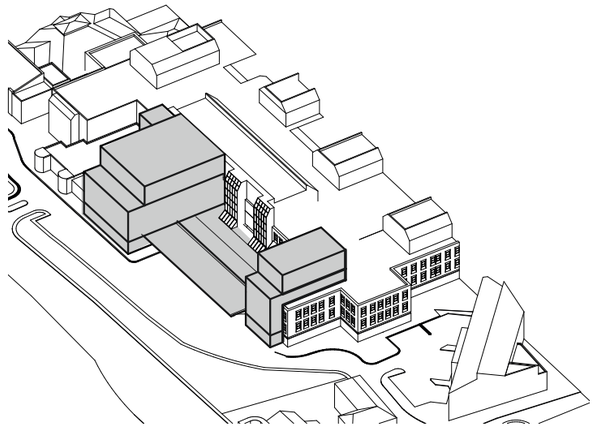
Revised Building Form



2.1 Massing, Form & Arrangement

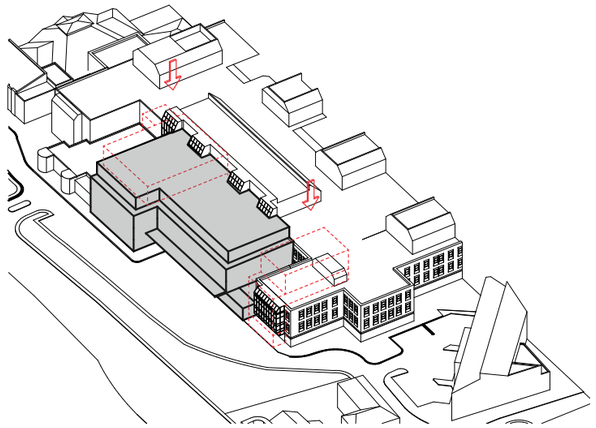
Redesign of current massing approach, from single storey ED flanked by 2no. 4 storey 'bookends', to a single 3 storey holistic element, reducing the mass and impact to the upper brook street frontage.

The primary changes between the ADP RIBA Stage 3 Proposal and The Current RIBA Stage 3 Signed off Plans can be summarised as follows:



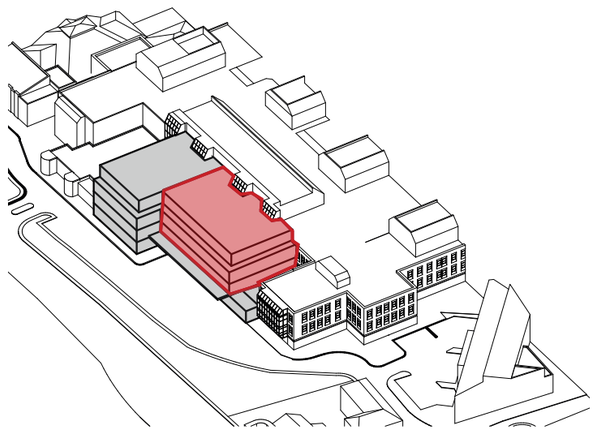
1 ORIGINAL MASS STAGE 4

Original mass was 2 x more vertical tower elements with a central ambulance receiving area.



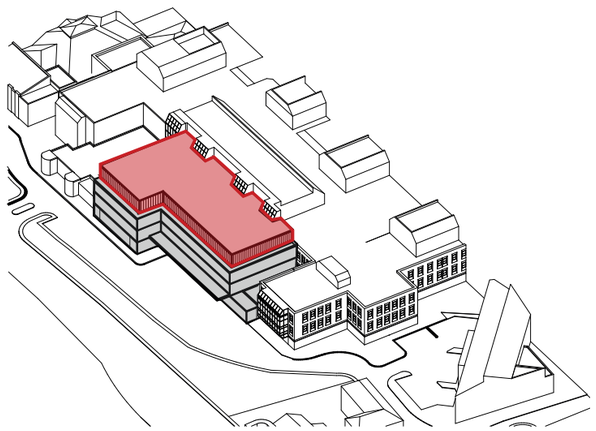
2 MASSING REVISED

Tower elements reduced in height to be more in keeping with surrounding context and more uniform stacked massing.



3 ADDITIONAL THEATRES

Requirement for additional Theatres within the scheme, stacked centrally to allow ease of service to new plant room.



4 ROOFTOP PLANT

Creation of rooftop plant to directly and efficiently service Theatres below,

02 Design Development

Internal Zoning Diagram

2.1 Clinical Engagement

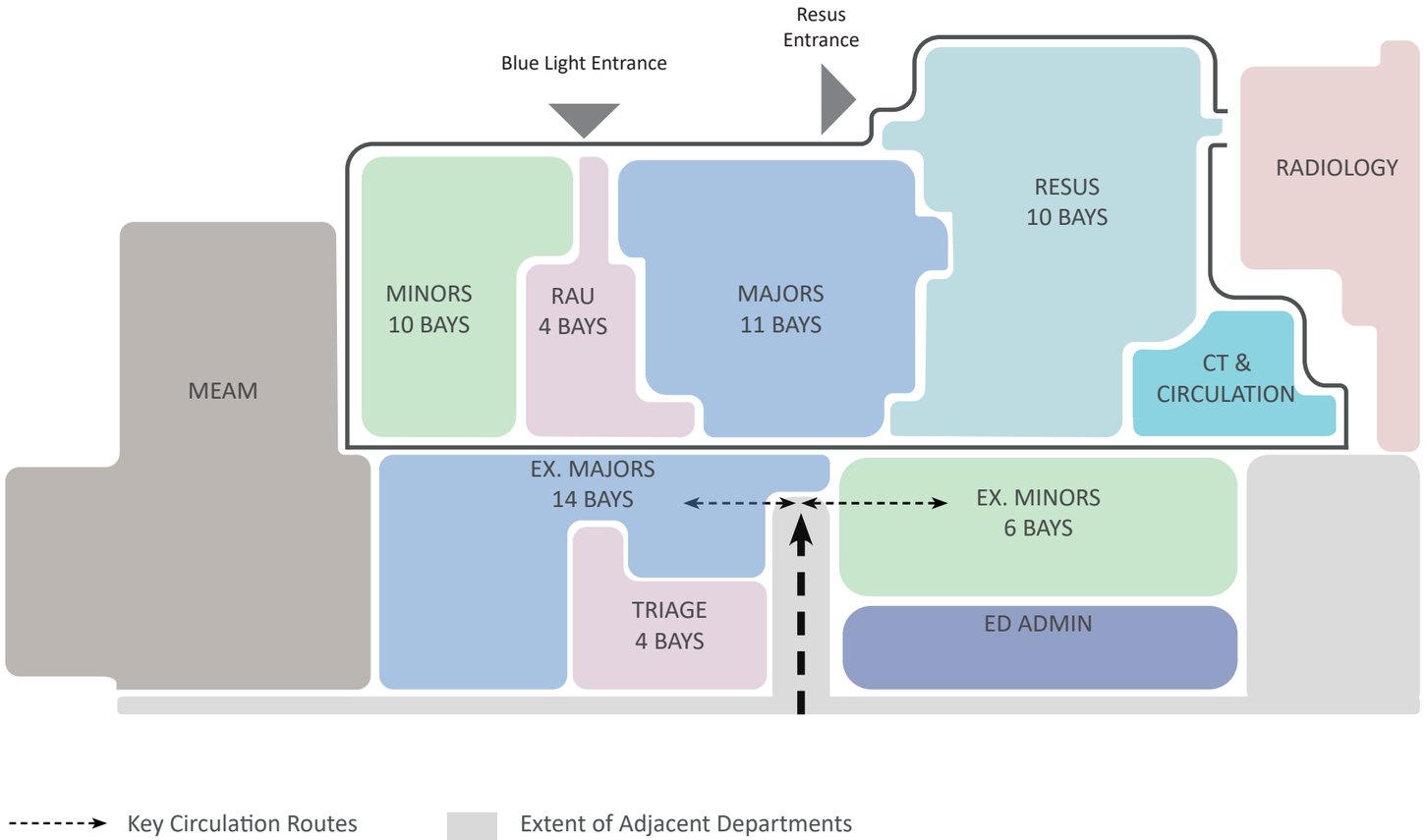
Through RIBA Stage 3, the design team had an extensive period of Clinical Engagement, These meetings were split between the below stakeholder groups:

- Pharmacy
- Nursing Team
- Radiology
- Mental Health
- Reception & Admin
- Security
- Department Teams:
- Consultant / Nurse (ED, Radiology, Theatres, Anaesthesia)
- Trust IT
- Estates and Facilities

2.3 Internal Zoning

Following the completion of a due diligence review of the previous Stage 3 proposals and redesign to suit the revised massing. the Project Team embarked on the progression and completion of RIBA Stage 3, Design Development. This stage further progresses the design and co-ordination with further involvement from the Key clinical and non-clinical Stakeholder groups with Design Change Control.

The proposals in the following Section offer an accurate representation of the Signed off Stage 3 Proposals ahead of Stage 4 Technical Design Development.

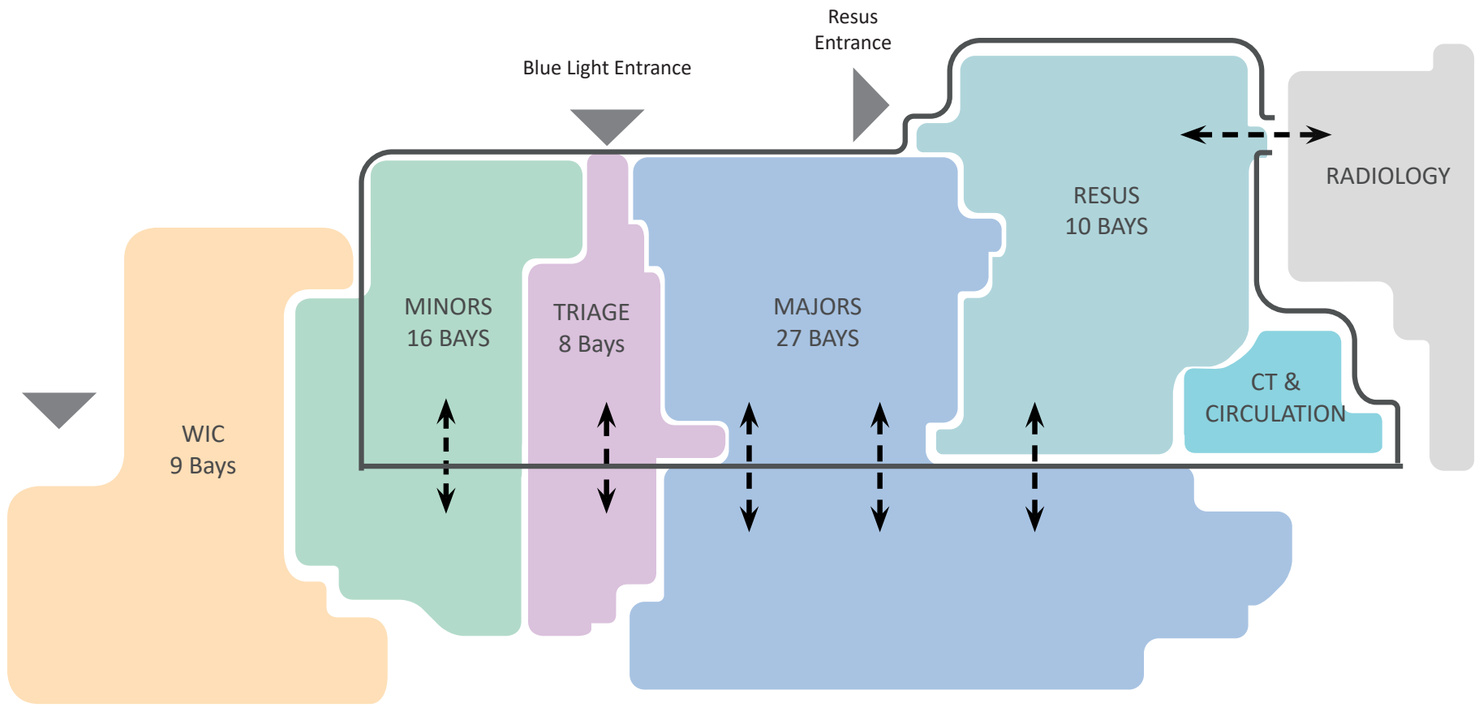


02 Design Development

Internal Zoning Diagram

The design of the ground floor ED is made up of the new build extension and major internal refurbishment works.

This image illustrates the proposal
departmental layout and occupation numbers, whilst also showing the Key adjacencies upon final completion of all the works.
Note: The Refurbishment will be subject to a separate Planning submission.



Key Circulation Routes

Extent of Adjacent Departments

Proposed Plans - Ground Floor

2.6 Ground Flood ED

- Due diligence review of all areas carried out to provide standardised bay sizing.
- Review of phasing strategy to ensure existing department can remain operational throughout the construction programme.
- 1m Separation distance provided from existing radiology department for buildability and maintenance access.
- New dedicated entrance and stairwell provided for First Floor Admin Accommodation.
- Increased Storage and WC provision across the department.
- Services coordinated to coincide with revised phasing proposal. Refer to Section 5, Phasing Strategy.



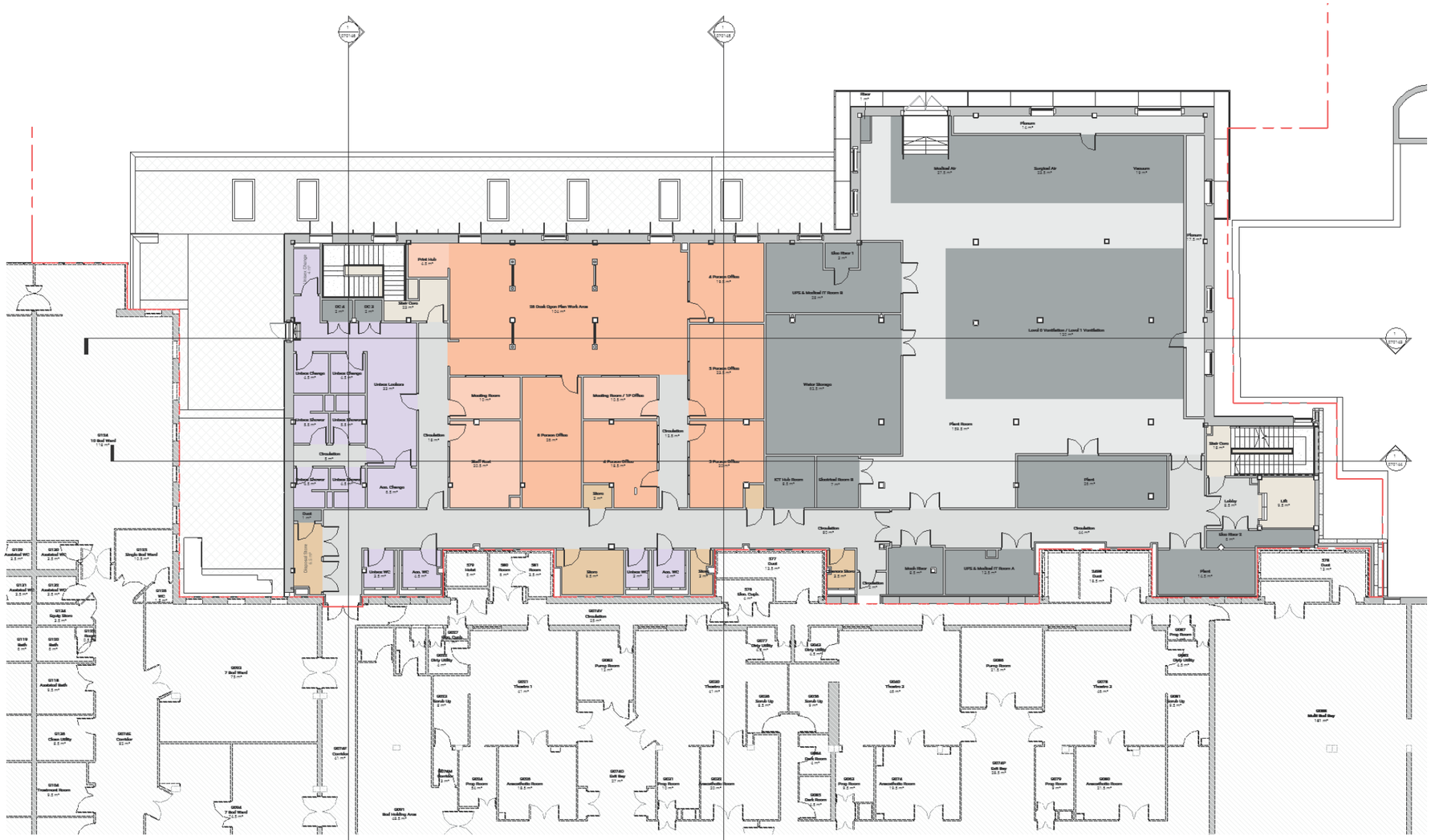
Current Stage 5 Proposal

Design Development

Proposed Plans - First Floor

2.7 First Floor Administration/Plant

- Mirrored arrangement of all plant / accommodation to provide better plant provision as part of the phasing strategy.
- Increased areas of storage / WC, and Staff Welfare Provision
- Consistent Desk Spaces (50no.)
- Dedicated external access for Admin staff.
- Additional Means of escape towards the Hospital Street.
- Opportunity for greater light penetration across the floorplate due to open plan office located on prominent external wall.



Current Stage 5 Proposal

Design Development

Proposed Plans - Second Floor

2.8 Second Floor Theatres

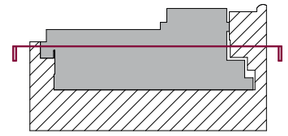
- Additional 3 no. Theatre Suites.
- Due diligence review of all staff WC's, Storage and access / egress to suit revised footprint.
- Dedicated 8 bed recovery including Resus bay within the proposal footprint, benefiting from natural light and potential for views.



Current Stage 5 Proposal

Design Development

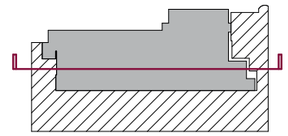
Proposed Sections A - A





Design Development

Proposed Sections B - B

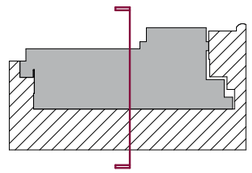






Design Development

Proposed Sections E - E

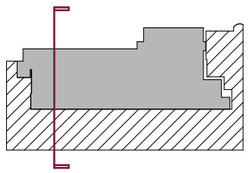


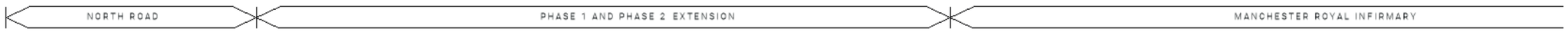




Design Development

Proposed Sections F - F








EMERGEN
LJ03
KPV

03 Stakeholder Engagement

03 Stakeholder Engagement

Workshops & User Groups

3.0 Overview

Throughout RIBA Stage 3 the project team have engaged with both clinical and wider stakeholder groups to help inform, review and further develop the design proposals to ensure it meets all the key requirements, which include: -

- Confirmation of Critical Clinical Adjacencies
- Confirmation of Schedule of Accommodation
- Phasing Strategy and Temporary works
- Site logistics
- Critical Staff and Patient Flows; both during construction and on completion.
- Environmental Considerations
- Suitability for the proposed model of care
- Suitable Size and capacity of individual spaces.
- Co-ordination of Site wide Infrastructure
- Access and Maintenance
- Access and Security
- Fire Strategy

The design and co-ordination has been reviewed and developed with involvement from the key Clinical and Non-Clinical Stakeholder groups listed on the next page.

3.1 Engagement Sessions

From June 2020 through to September 2020, engagement sessions and stakeholder workshops have been held to help inform and advise the Design Team with their development of design options and reaffirm Stakeholder sign off on the Proposed Design Strategy.

These sessions included relevant Design Team members, MFT staff across various departments and external stakeholders where necessary. Actions and comments from each meeting have been formally captured within meeting minutes, with feedback being incorporated from the client and users wherever appropriate.

Overall, stakeholder engagement has been positive and has ensured the RIBA stage 3 design pack covers the requirements. Formal sign off on the 1:100 GA Plans has been achieved and the relevant dates are noted in the following section. Any comments from the final review including virtual reality walkaround sessions will be recorded and addressed within the RIBA stage 4 Technical Design phase.

TRUST / NON CLINICIANS	
Name	Role / Organisation
Matthew O'Hara	Mace
Stuart Malcolm	MFT
Tyler Eason	Mace
Christopher Smith	MCC Planning
Bushra Ramzan	Trust Health & Safety
Tommy Higgins	Trust Security
Ian Smith	Trust Security
Andy Kuczaj	Trust Fire
Ian Turford	Trust Fire
Michelle Worsley	Trust Infection Prevention Control
Kathryn Mitchell	Estates and Facilities
Sharon Salmon	Estates and Facilities
Claire Doran	Estates and Facilities
Cassie Barker	Estates and Facilities
Jon Bell	Trust IT
Mark Grimsley	External Electrical Advisor
Lee Fraser	Sodexo
John McGurk	Sodexo

03 Stakeholder Engagement

Workshops & User Groups

Trust Clinicians	Theatre Clinicians	Engie	Pharmacy	NWAS
Rosemary Morton	Afshin Tavakoli	Patricia Tobin	Gareth Adams	John Birchenough
Kirstin Ballantyne	Ferdinand Serracino-Inglott		Adele Mackeller	Anne Marie Rooney
Martin Ranson	Reid Tiley		Adele Torkington	
Craig Ferguson	Ian Gall		Matt King	
Stuart Clark	Anthony Southin		Annette Adams	
	Rachel Vandermark		Victoria Anderson	
	Helen Archer			

Trust Clinicians


1 2 3 4 5 6 7 8 9 10
Emergency Ambulance
AMS

04 Design Approach

04 Design Approach

Facade & Materiality

4.0 Overview

With the facade, we wanted to express the horizontal layers of the building to be sympathetic towards the Hope Buildings facade. However we wanted to express these in a more subtle way so that the building can still be read as one curvilinear form upon approach.

The rich copper effect aluminium tones of the proposed cladding veil tie in well with its immediate context with the surrounding terracotta facade of the Hope Building and prominent red bricks of the CSB and surrounding local housing.

The Veil proportions also tie in with the existing proportions of the Hope Building facade to scale it to its surrounding context and give it a firm grounding within the site.

The more reflective silver / grey aluminium cladding that can be seen as the facade increases past the veil helps to reflect the sky to assist with diminishing the scale and prominence of the building.

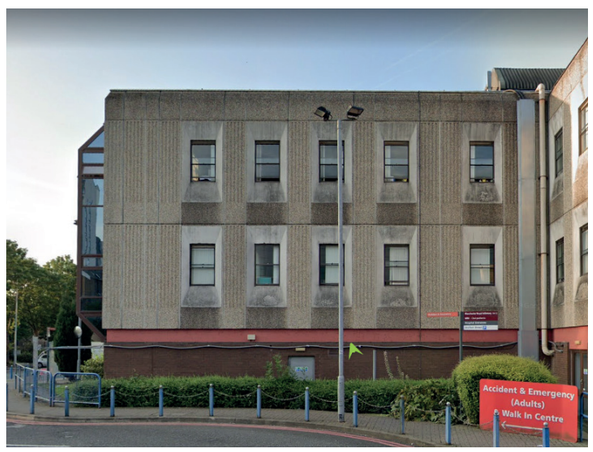
4.1 Facade Design

DAY have liaised with FMDC with regards to the proposed facade design and analysed various methods of facade construction to ensure that it is reflective of the concept and that the design is not compromised.

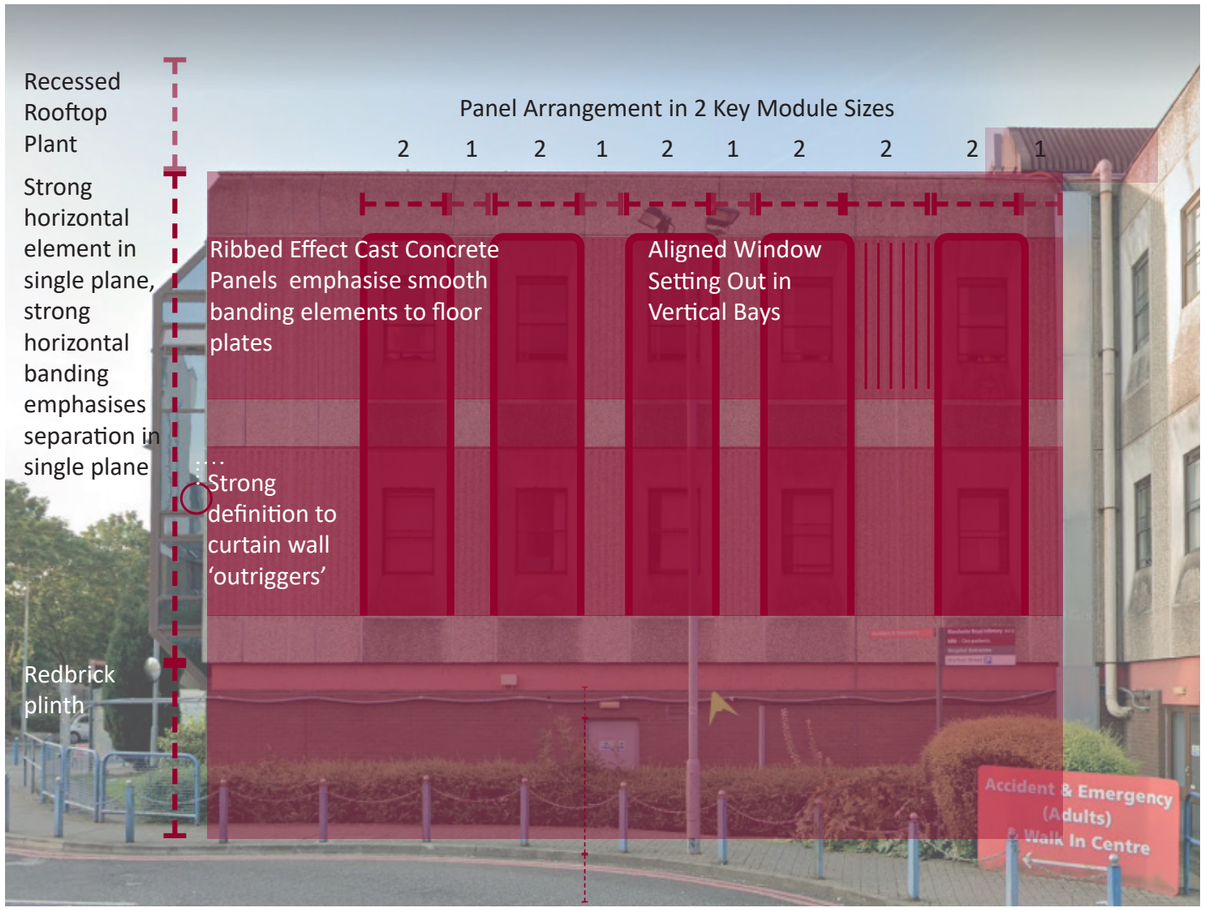
Sketch detailing and thermal performance calculations have been considered following the initial façade workshop with FMDC on 31st Jan
2019 and was followed up with a second workshop on 14th March 2019.

We have broken the facade design into 3 main components:

- Entrance Glazing System
- Rainscreen Cladding System
- Secondary Skin (facade wrap)



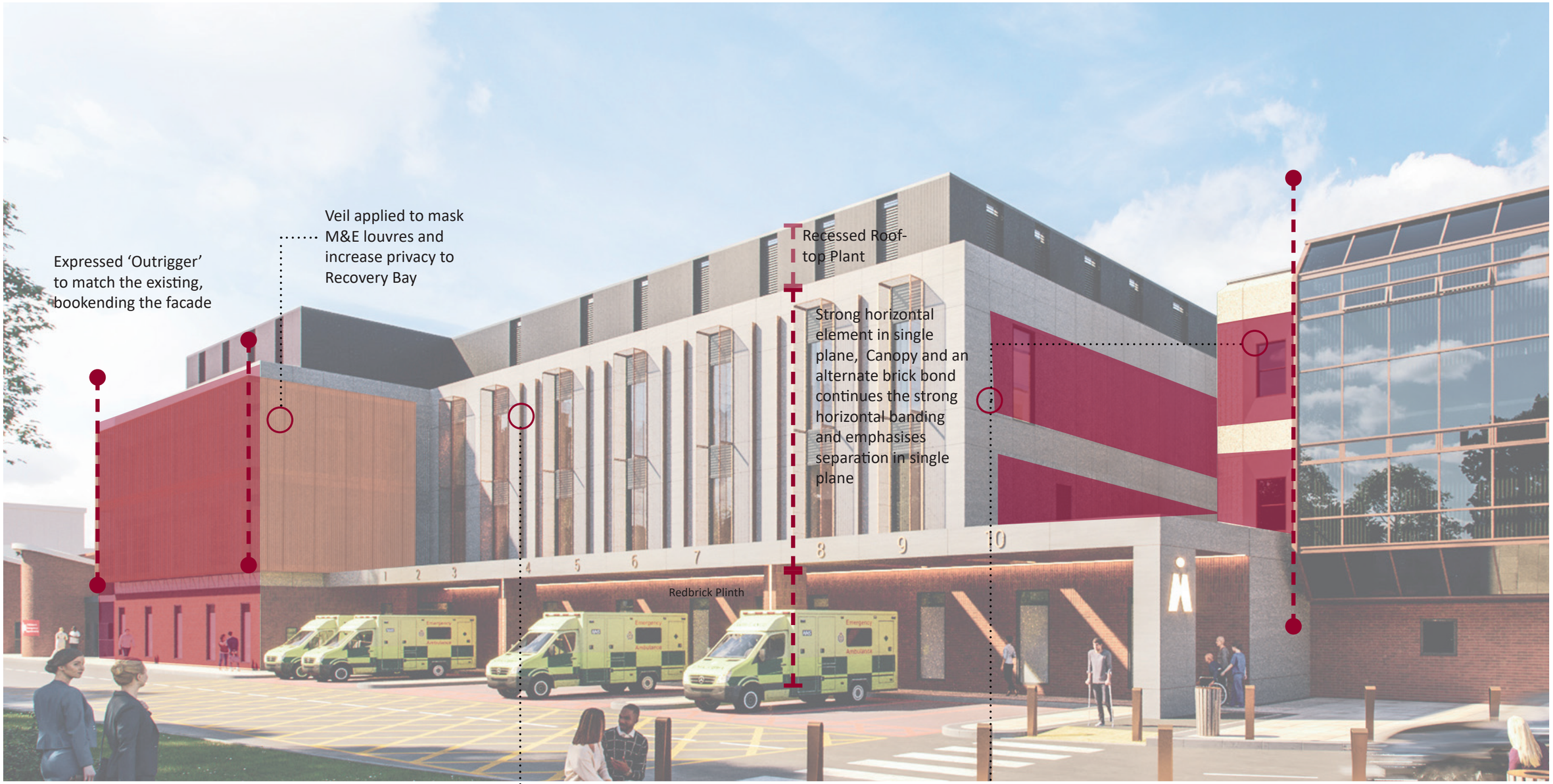
Gable End - Grafton Street / North Road ED Approach



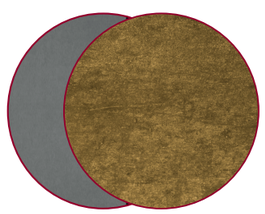
Review of Gable End - Arrangement & Hierarchy

Design Approach

Facade & Materiality



Blue Light Drop Off / Ambulance Bays



High Quality Material palette appropriate to express presence from Upper Brook Street.



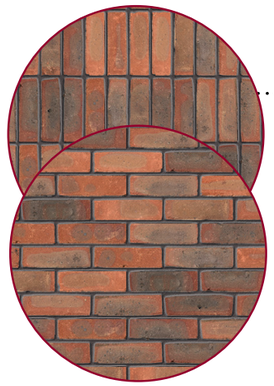
Equitone Linea Panels - Gable Ends
Application of Linea Panels to continue existing banding.

Design Approach

Facade & Materiality



Canopy Soffit -
Polyester powder coated anodised effect copper aluminium panels



Brickwork Swatch Sample
Ibstock Reigate Medium Multi
Traditional Bond, 90 degree stack bond banding.
Dark Grey Mortar



Blue Light Drop Off - Colonnade



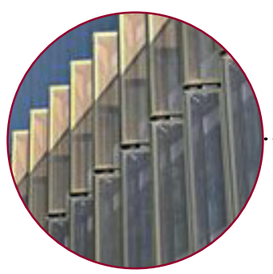
Eurobond metal composite cladding flat panels- Plant Vertical Arrangement



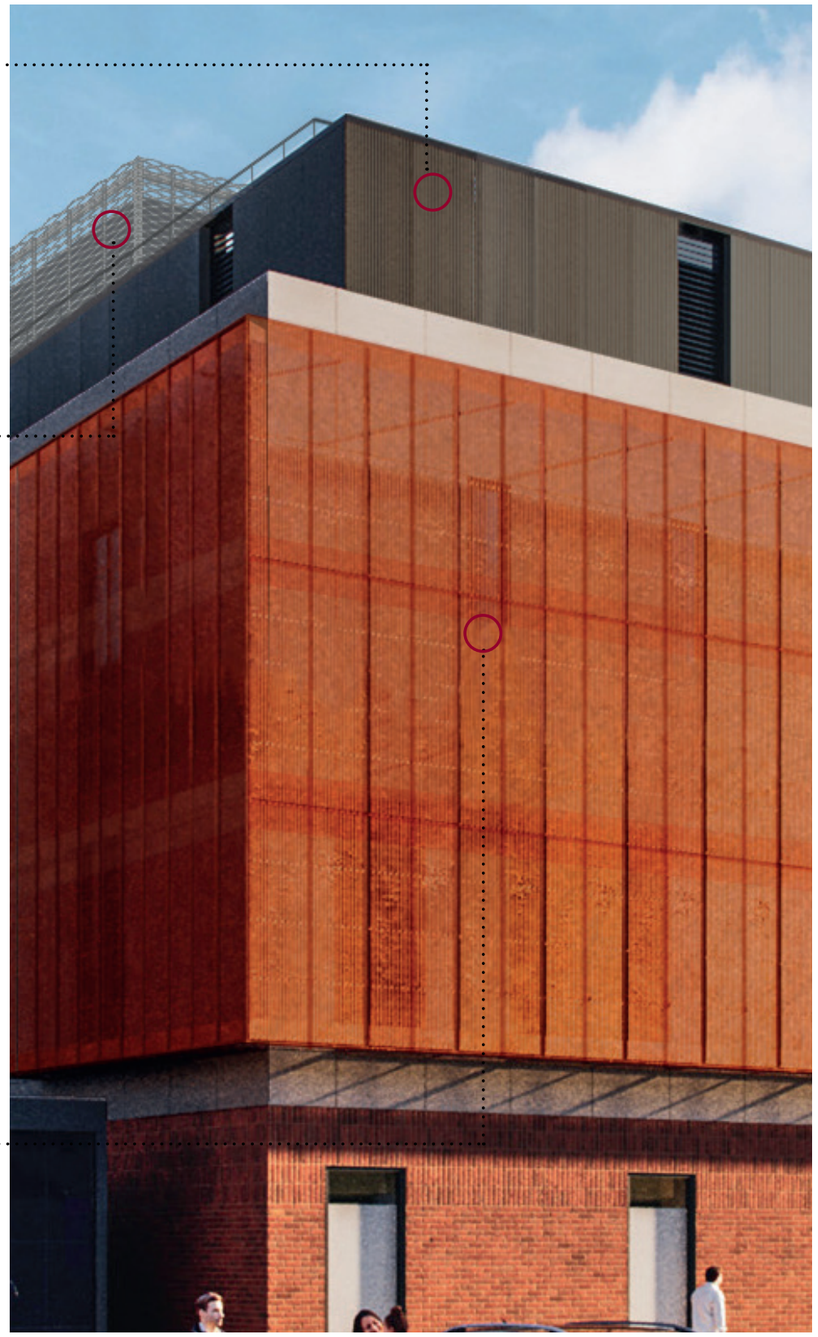
Expanded steel mesh roof plan screening



Equitone - Facade
Tectiva and Linea fibre cement cladding panels



Veil - Aluminium cladding
- Polyester powder coated anodised effect copper



Materiality - Strip Elevation

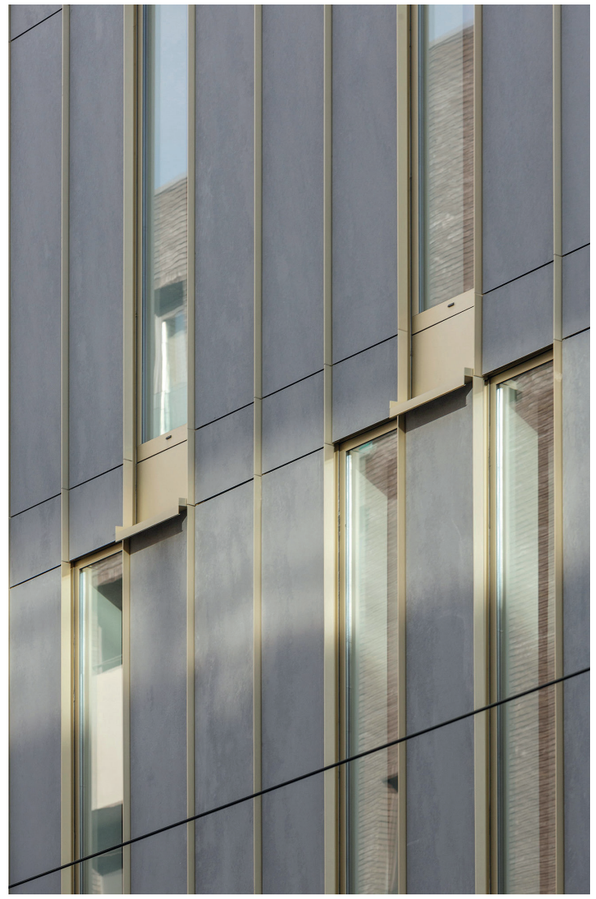
4.2 Facade Precedent Imagery

We carried out a precedent study to better understand the facade materials and proportions as well as how the perforated copper fins could be used in an elegant way to create more fluidity to the external facade of the building whilst also ensuring views are not obstructed for the users whilst maintaining adequate solar shading internally for a comfortable environment.







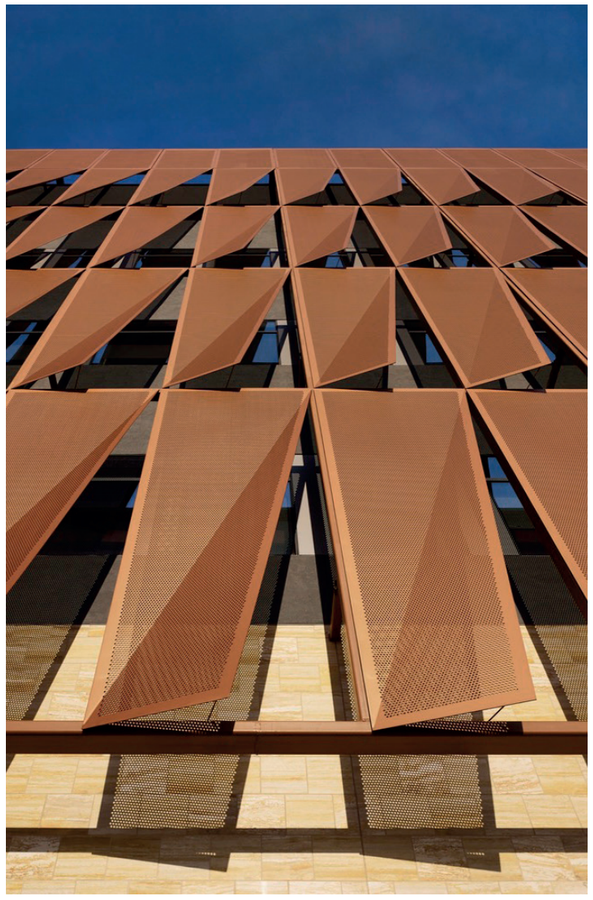


City fire station Antwerp / HUB

The fire station in Antwerp designed by HUB was a big inspiration for the proposed facade of Project RED. The proportions and vertical elements of the elevation help break down the overall size of the massing, helping it blend into its surrounding context.

Design Approach

Facade & Materiality



University of Arizona Cancer Center / ZGF Architects

The secondary skin of the facade of the University of Arizona Cancer Centre was an element DAY tried to implement into the front elevation of Project RED. It not only acts as a screen against direct sunlight, it also allows more privacy in the internal spaces. The choice of naturally toned materials all form the users experience from their initial approach.







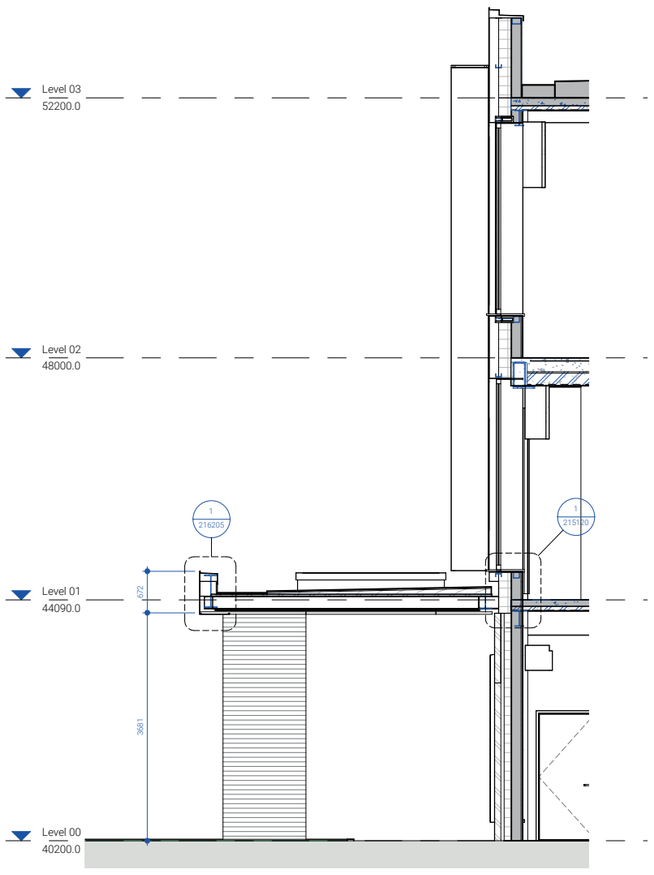
IMPLUVIUM / RAW/deAbajoGarcia

A big element of the design of the above precedent which DAY wanted to implement in Project RED was the subtle balance of allowing natural light into the building and privacy of its users. Enhancing their experience and recovery.



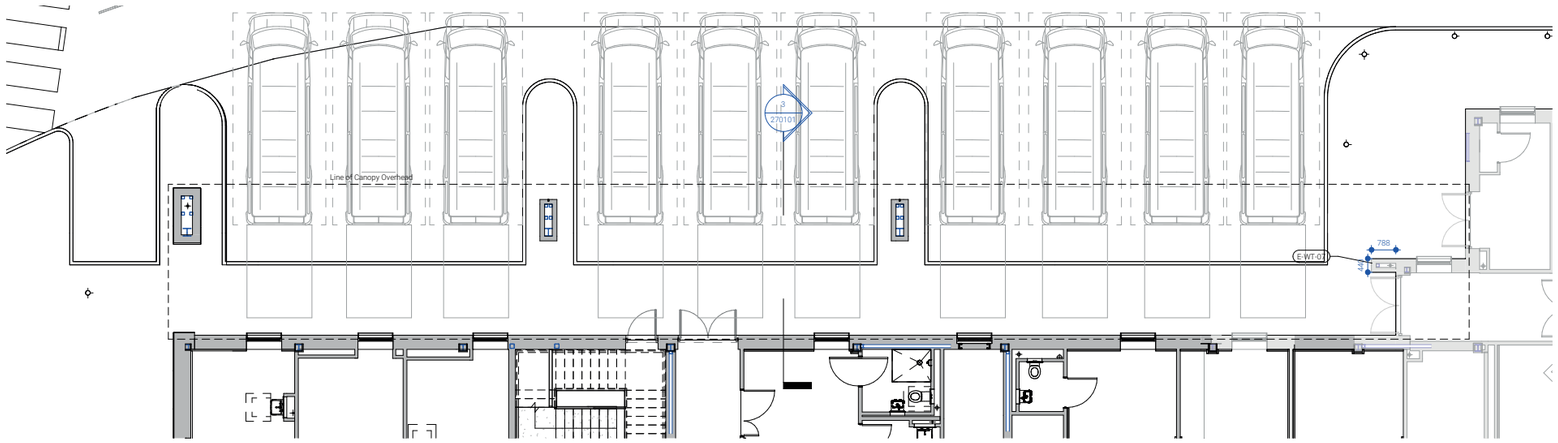


4.3 Canopy Design & Materiality

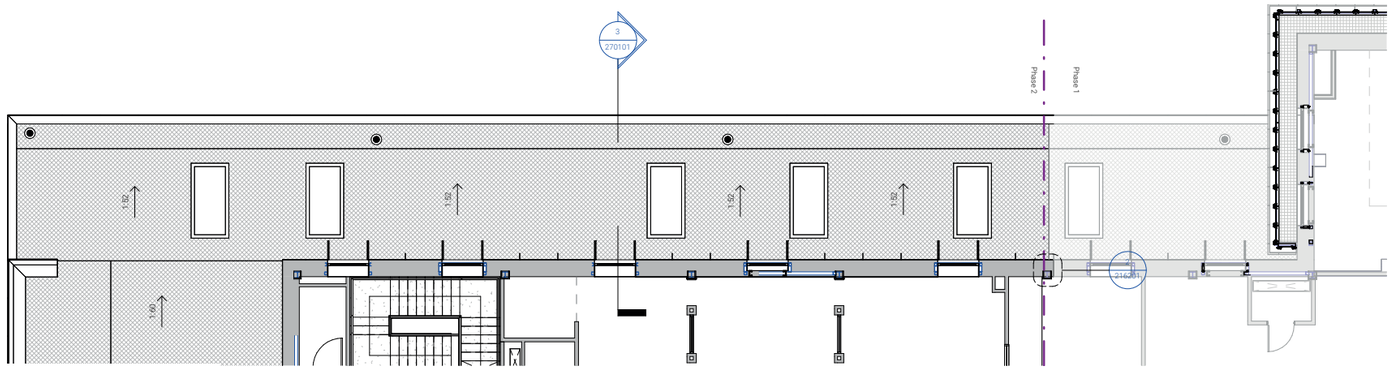


Canopy Section
1 : 50

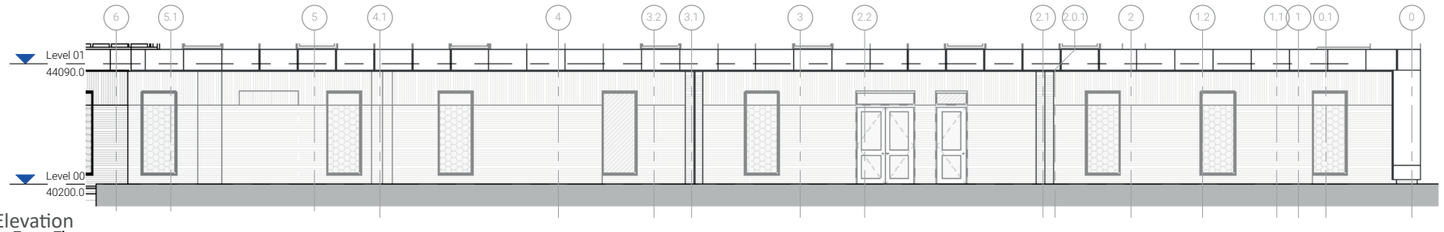
Canopy Section



Ambulance Bay / Structural Setting Out



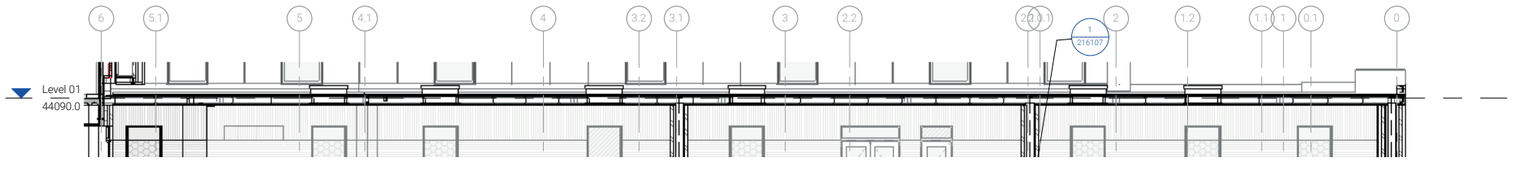
Roof Plan



Front Elevation

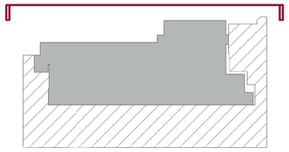
Canopy - Front El

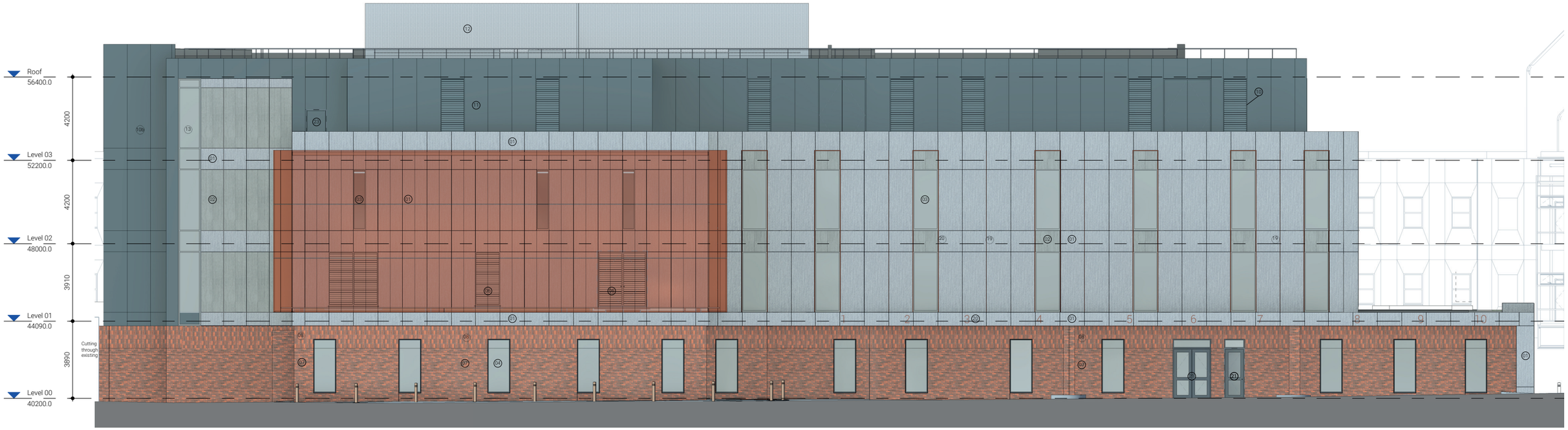
1 : 100



Design Approach

Facade & Materiality



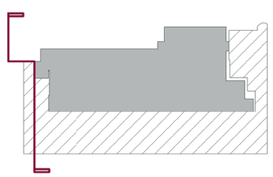


Proposed East Facade

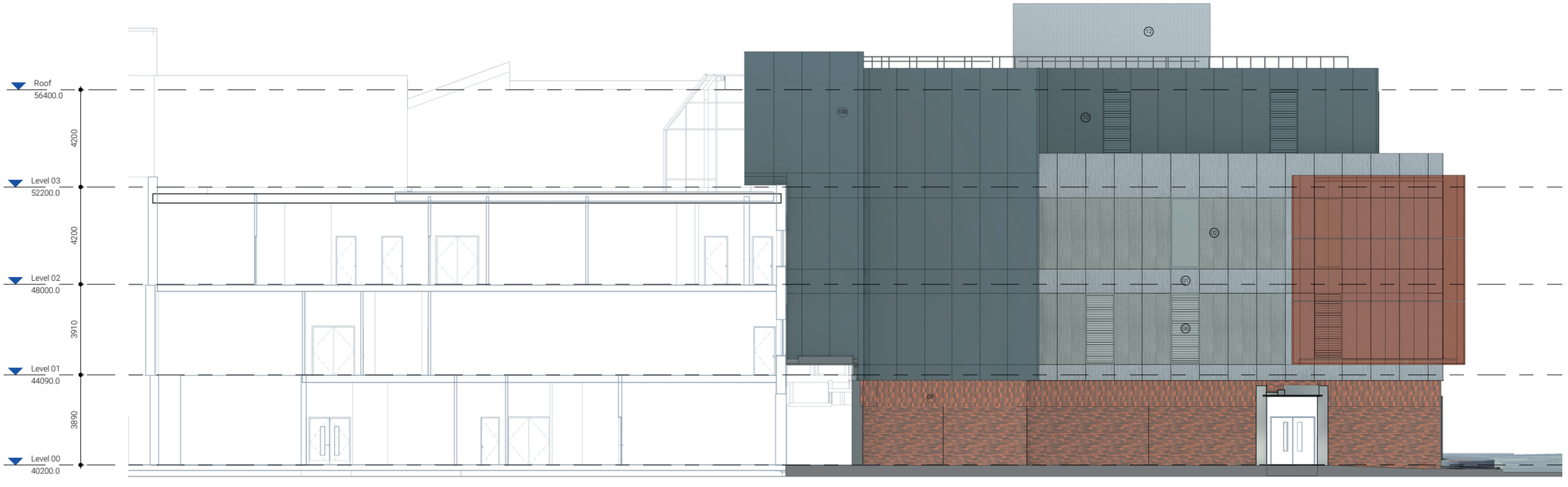
Design Approach

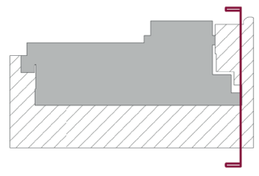
Facade & Materialitv





Proposed North Facade

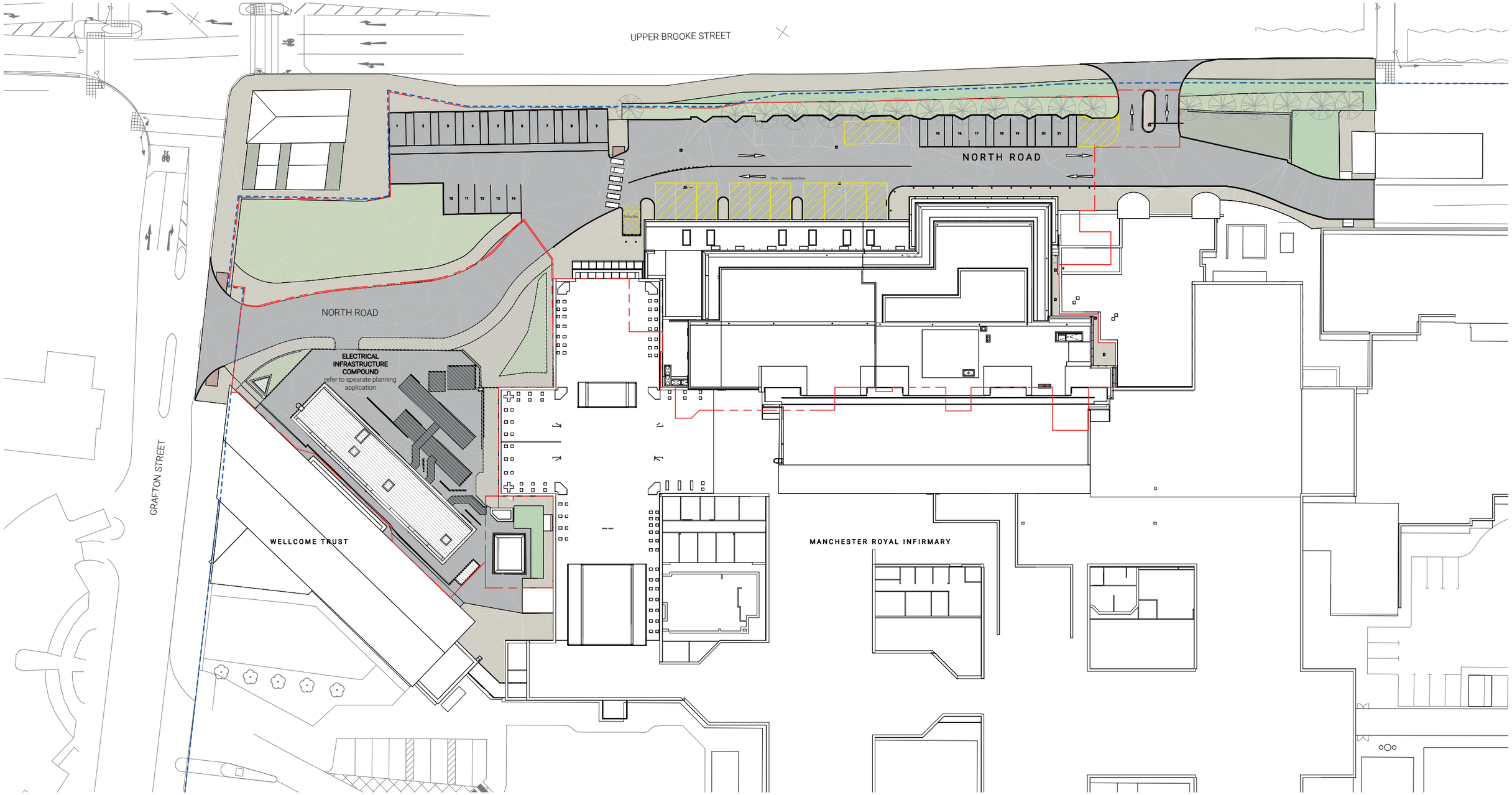




Proposed South Facade

Design Approach

Landscaping - Proposed Site Plan



ning Site Plan - Phase 2

SITE KEY

Site Works Boundary

Ownership Boundary

PARKING NUMBERS

22 Total

16 Disabled Bays
6 Standard Bays

Design Approach

General Arrangement Plans with Schedule of Accommodations - Ground Floor

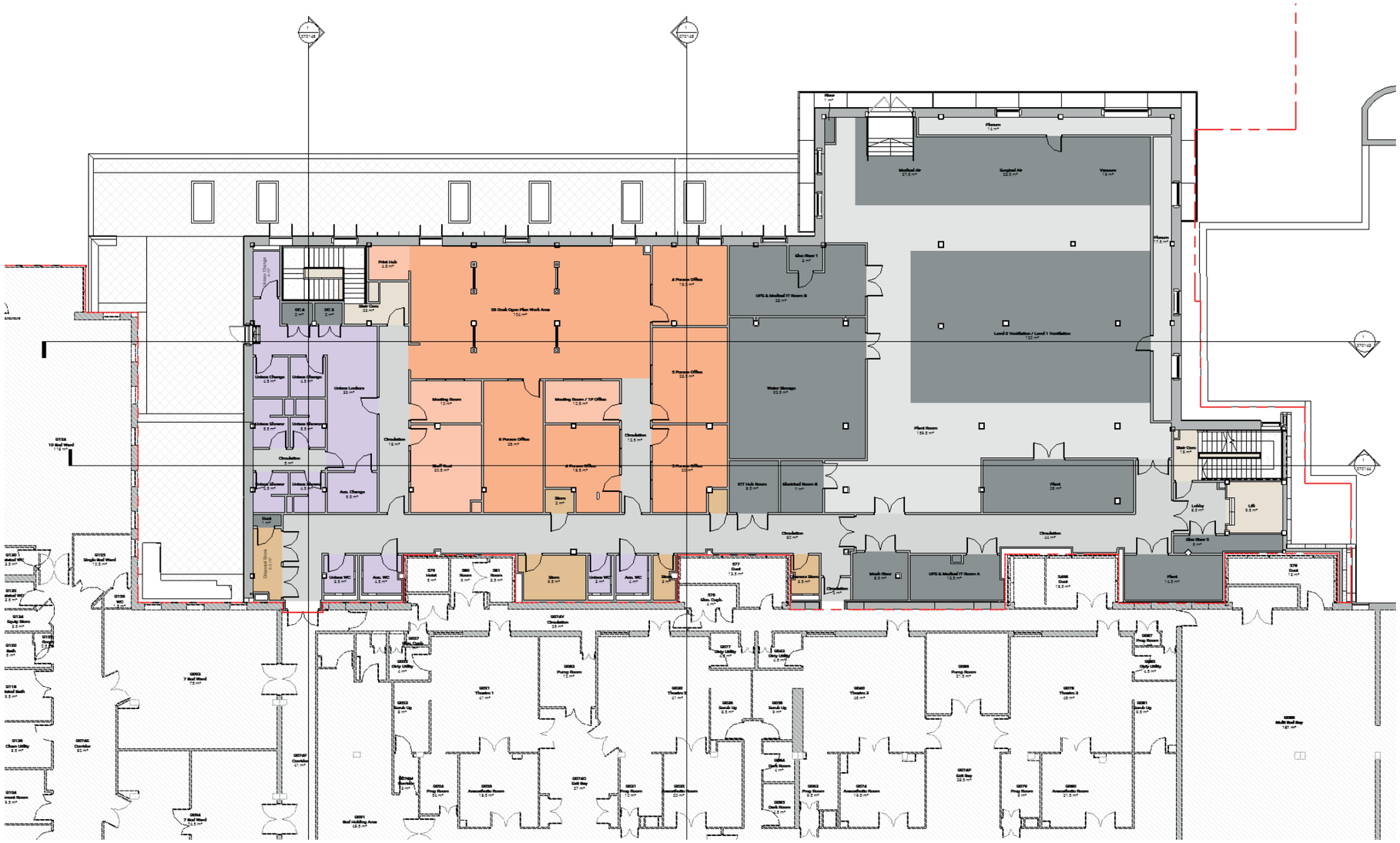


DEPARTMENT KEY

- Resus Department
- Minors Department
- Majors Department
- Triage Department
- Radiology Department
- Vertical Circulation
- Circulation
- Plant
- Ancillary Space

Design Approach

General Arrangement Plans - First Floor



DEPARTMENT KEY

- Admin Department
- Staff Change
- Ancillary Space
- Vertical Circulation
- Circulation
- Plant

Design Approach

General Arrangement Plans - Second Floor

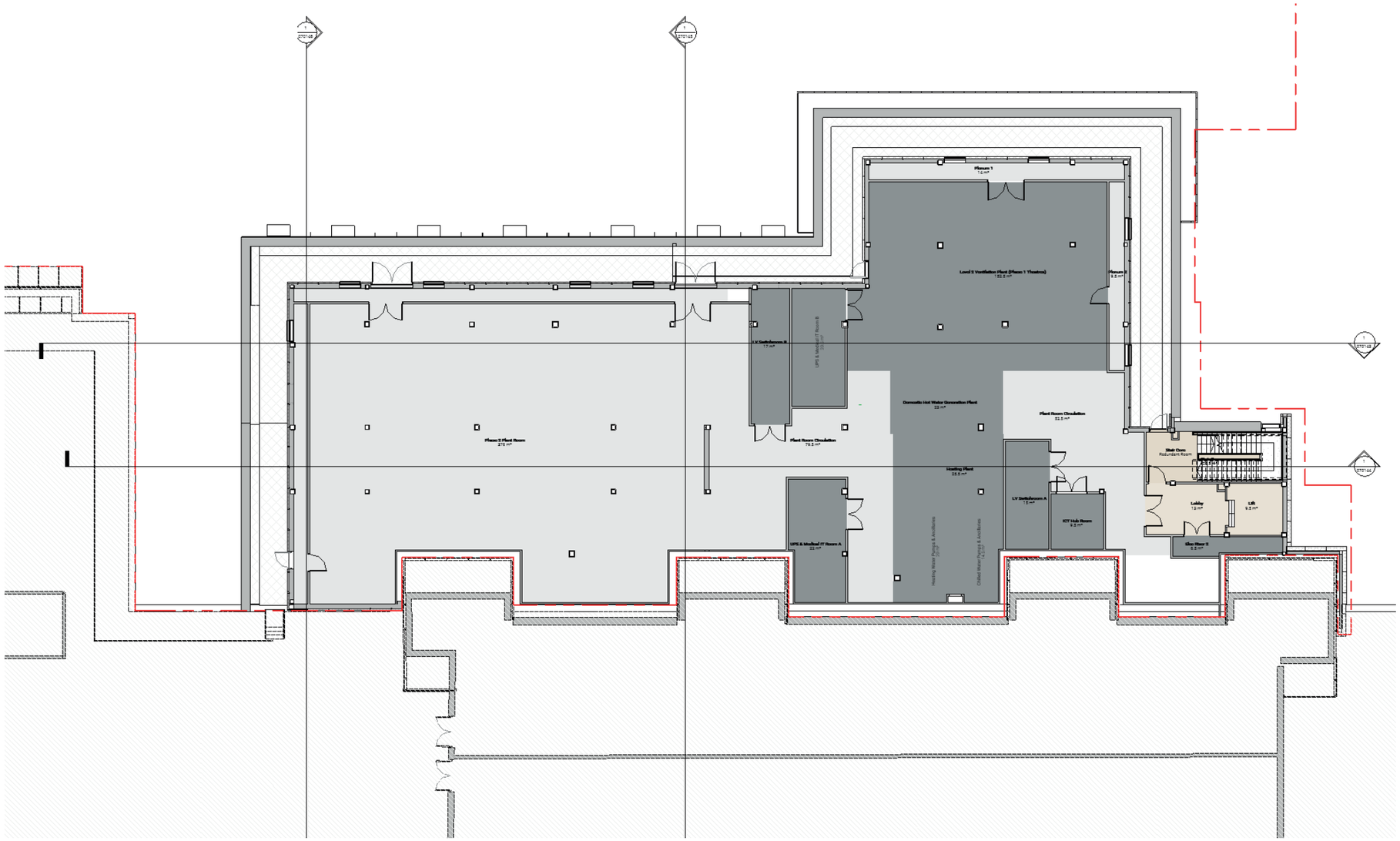


DEPARTMENT KEY

- Theatre Department
- Recovery Department
- Vertical Circulation
- Circulation
- Plant

Design Approach

General Arrangement Plans - Third Floor

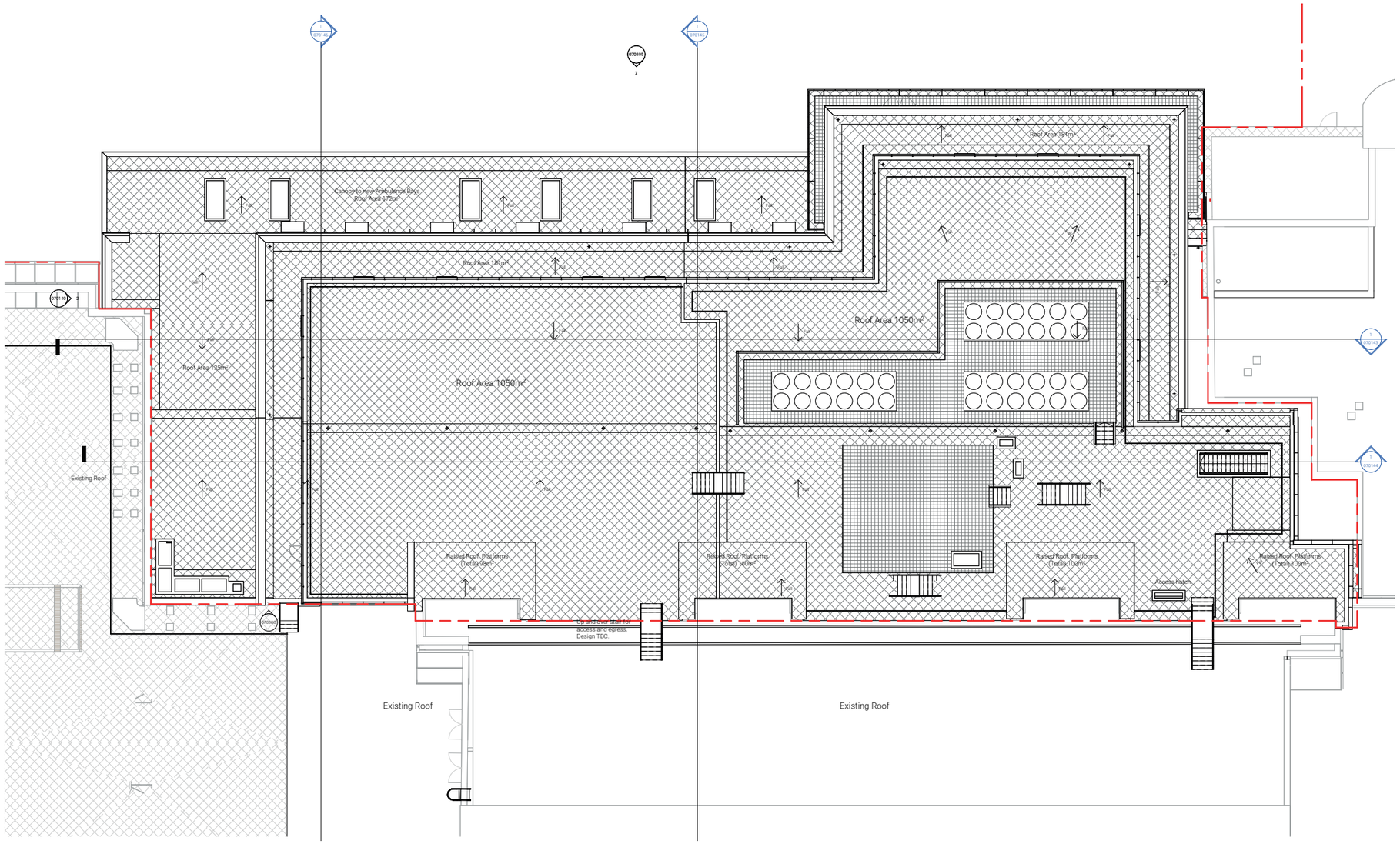


DEPARTMENT KEY

- Vertical Circulation
- Circulation
- Plant

Design Approach

General Arrangement Plan - Roof

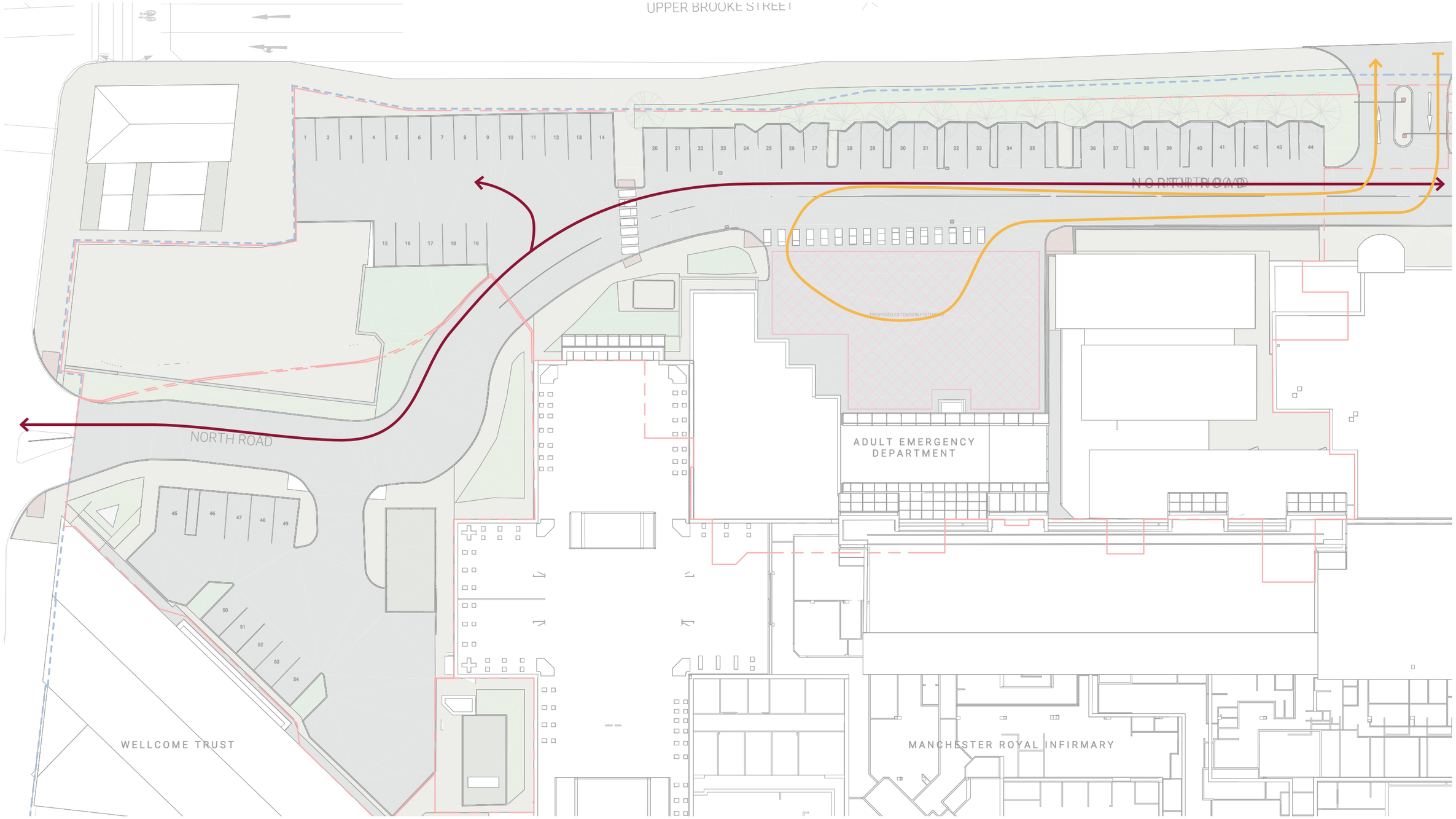


05

Access

Access

Existing Access Plan



05 Access

Phasing Overview

5.1 Phase 1

Once the Specialist Medicine Block, WIC and Minors are decanted / demolished, Site preparation can begin. Phase 1 will enable the following key provisions:

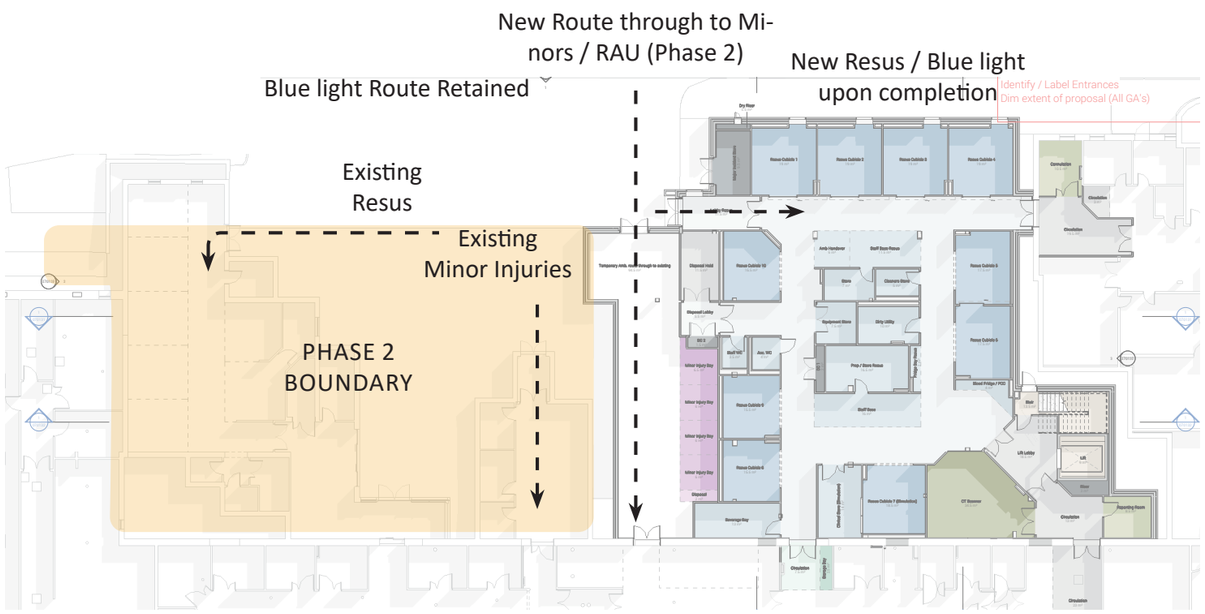
- Create a large proportion of the new build element,
- Complete the new Resus Department at Ground Floor, whilst the existing remains operational.
- Create a new, temporary RAU and Ambulance route upon completion of Phase 1.
- Provide a large proportion of the HTM compliant service infrastructure required for the Phase 2 build at the First / Third Floor.
- Provide two new Theatres to the Second Floor, alongside the 8 bay recovery suite.
- Ensure critical paths and escape routes are maintained throughout, with works to improve bed escape corridors and access arrangements via the dirty corridor.

On completion of Phase 1, the existing RAU and Resus can be demolished.

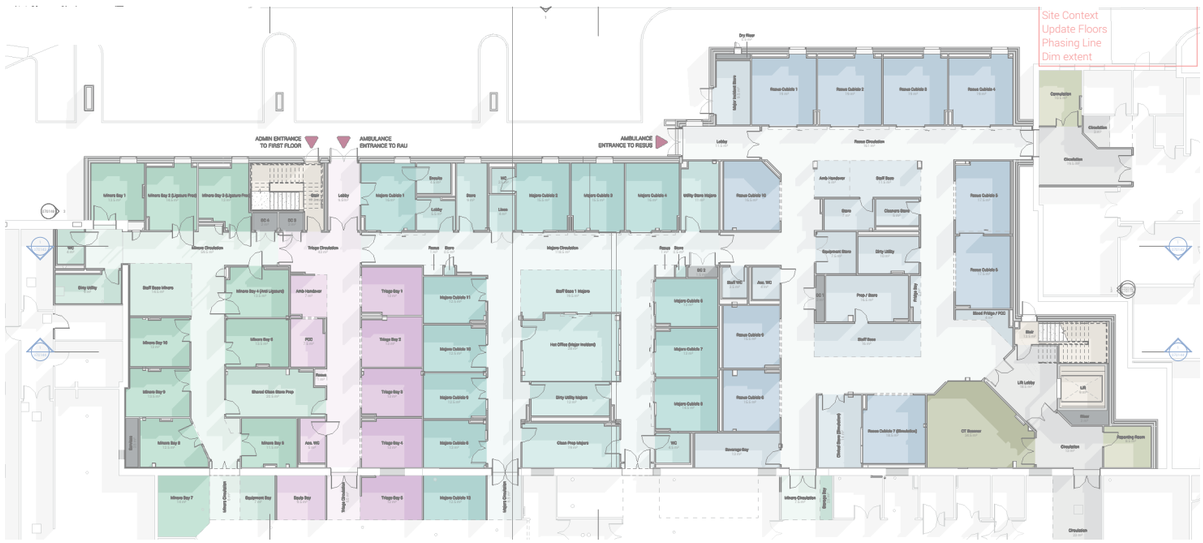
5.2 Phase 2

The intention for Phase 2 is to complete the works, comprising:

- Demolish existing Resus Department, and entrance canopies.
- Complete the Ground Floor ED, Including the new Minors, Majors and RAU departments.
- Complete the First Floor Footprint to provide additional Plant space, 50 desk administration suite, and staff welfare provision.
- Carry out the remaining Second Floor Theatre suites for 6no. total.
- Complete the services works to the Third Floor / rooftop plant areas.



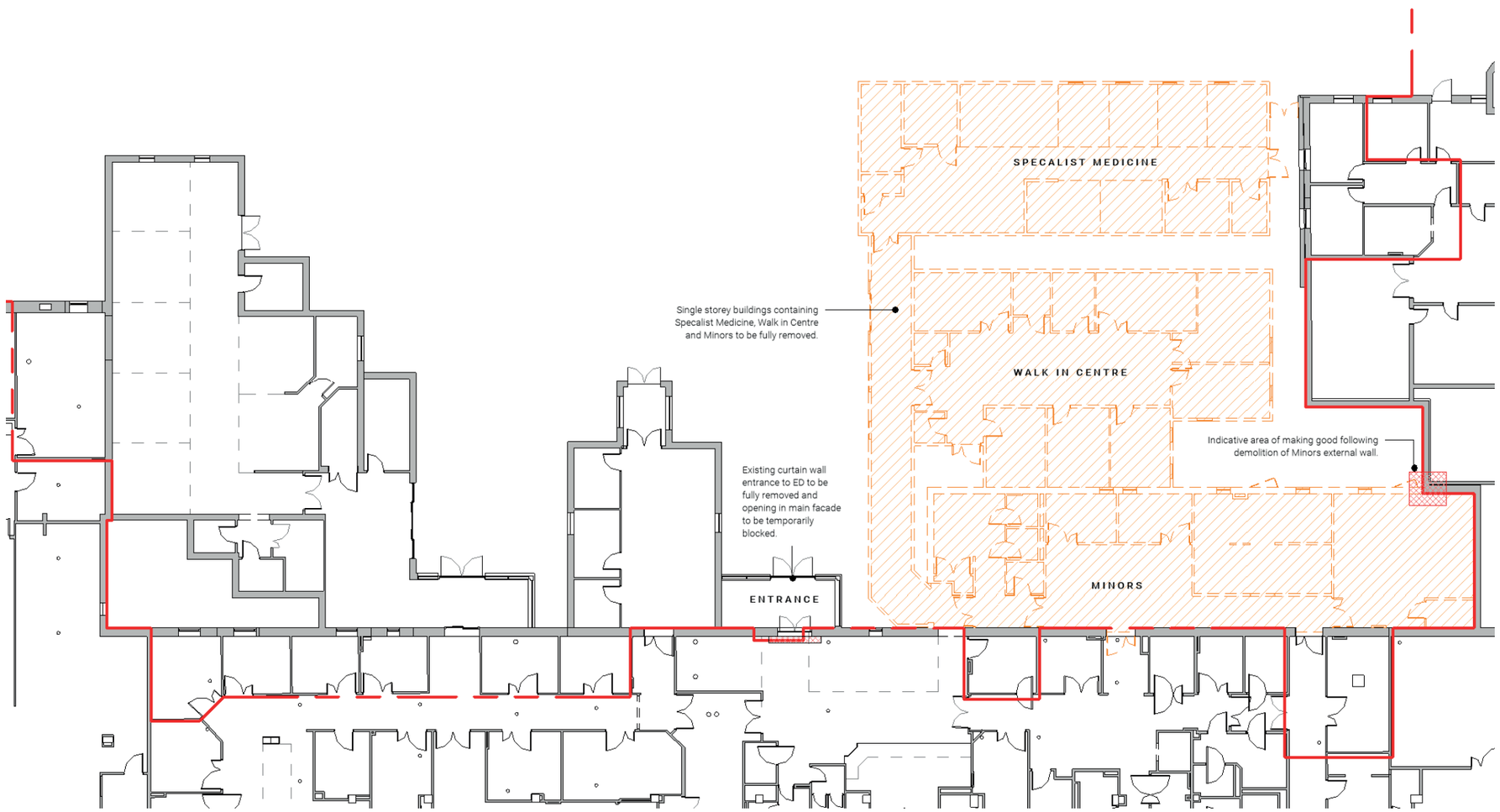
Proposed Phase 1 (Completion) Overview



Proposed Phase 2 (Completion) Overview

Access

Phase 1 - Demolition Plan



KEY:

Area or element to be demolished

Indicative area for making good following demolition

NOTE:

Any work to existing structural or servicing elements must be reviewed and agreed by the Structural Engineer and M&E Engineer respectively prior to work commencing.

Access

Phase 1 General Arrangement - Ground Floor Plan

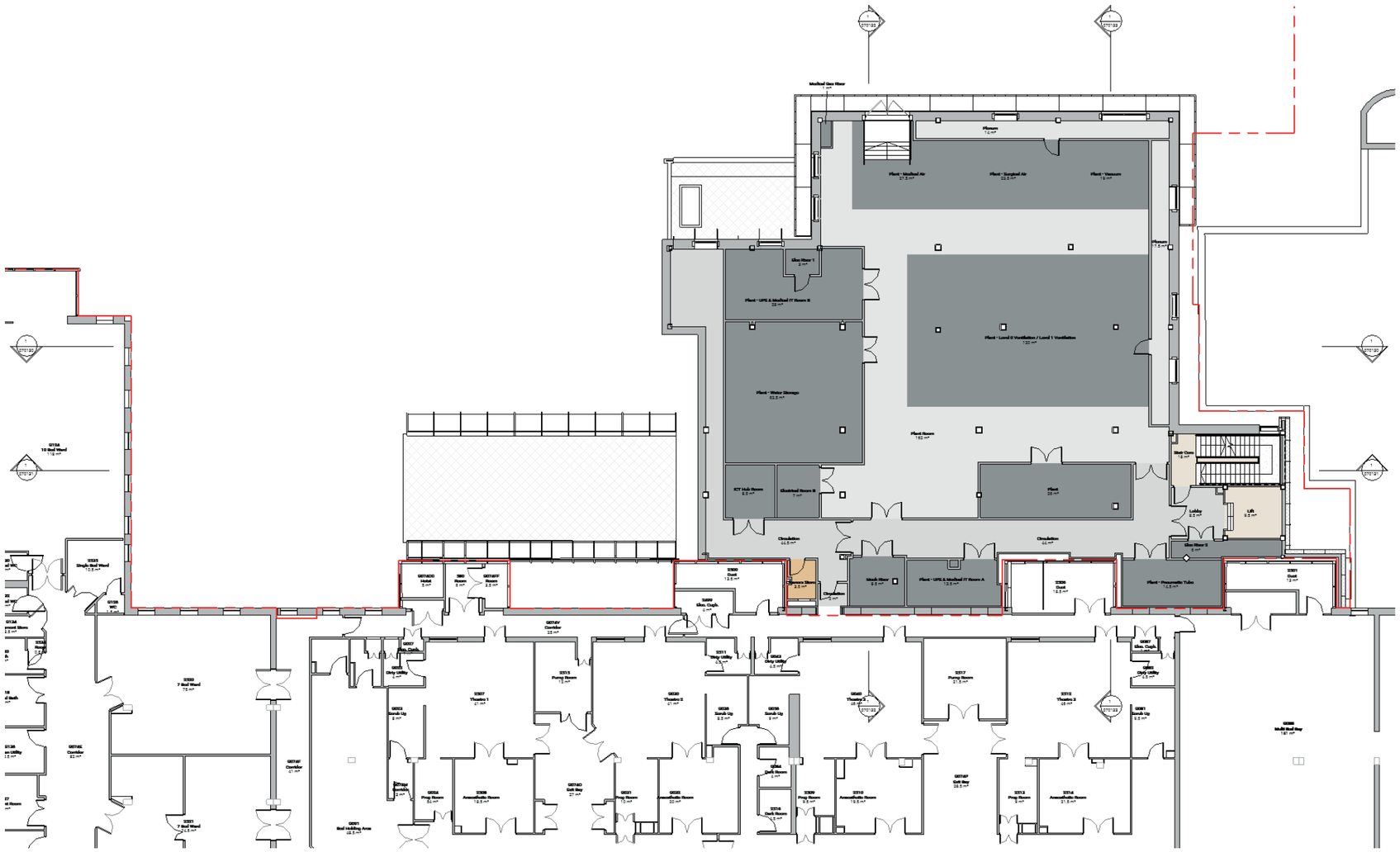


DEPARTMENT KEY

- Resus Department
- Minors Department
- Majors Department
- Triage Department
- Radiology Department
- Vertical Circulation
- Circulation
- Plant
- Ancillary Space

Access

Phase 1 General Arrangement - First Floor Plan

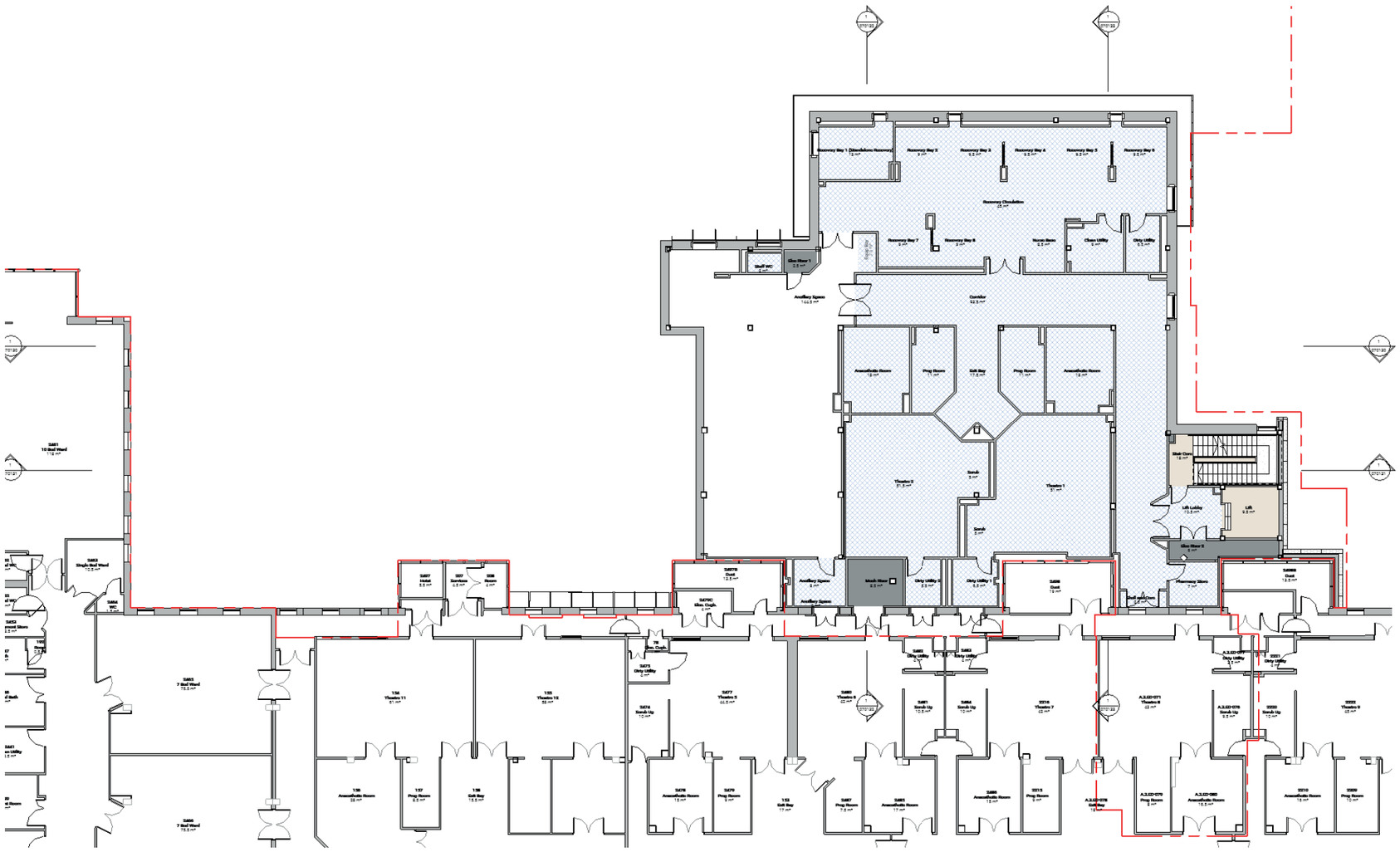


DEPARTMENT KEY

- Admin Department
- Staff Change
- Ancillary Space
- Vertical Circulation
- Circulation
- Plant

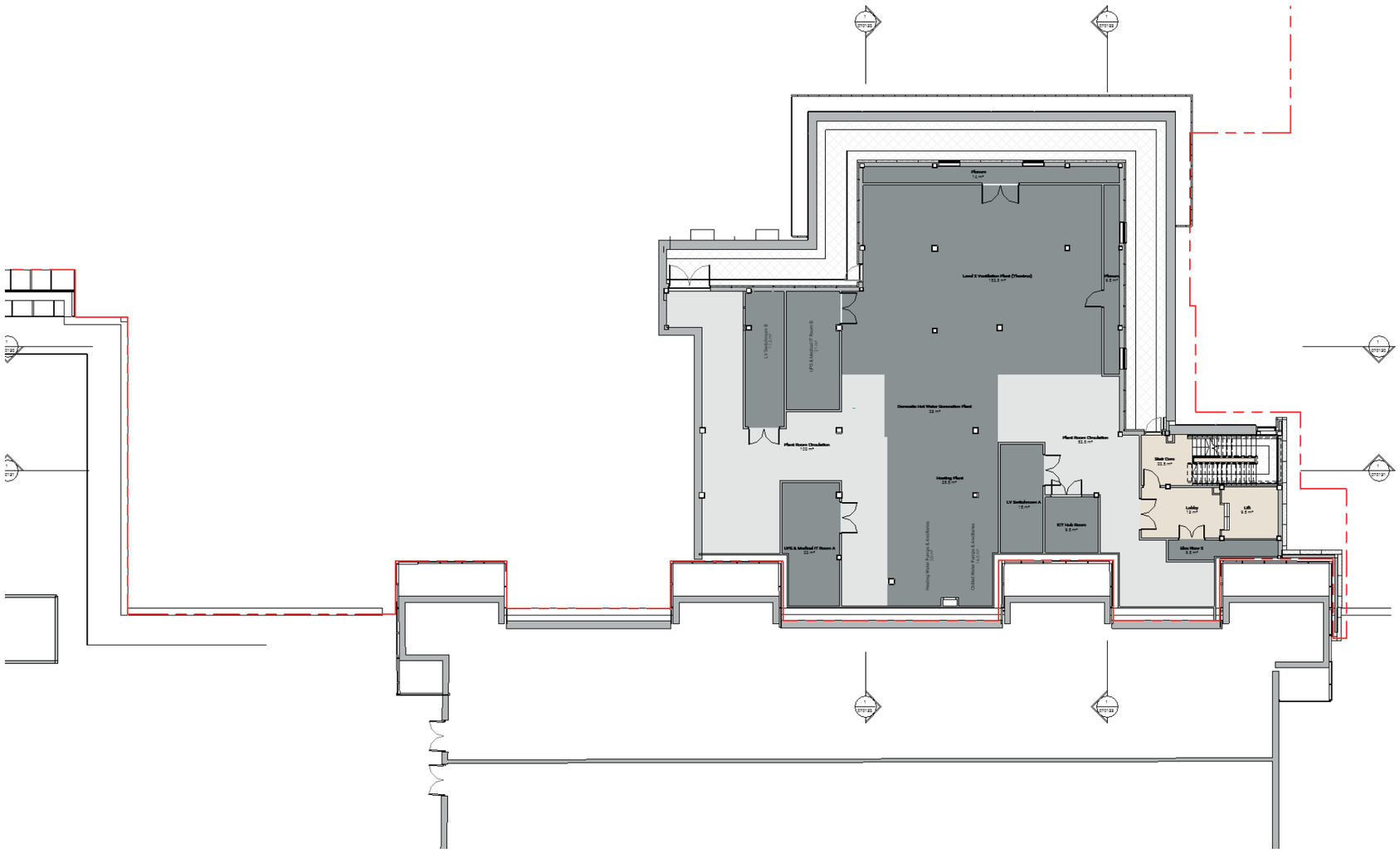
Access

Phase 1 General Arrangement - Second Floor Plan



Access

Phase 1 General Arrangement - Third Floor Plan

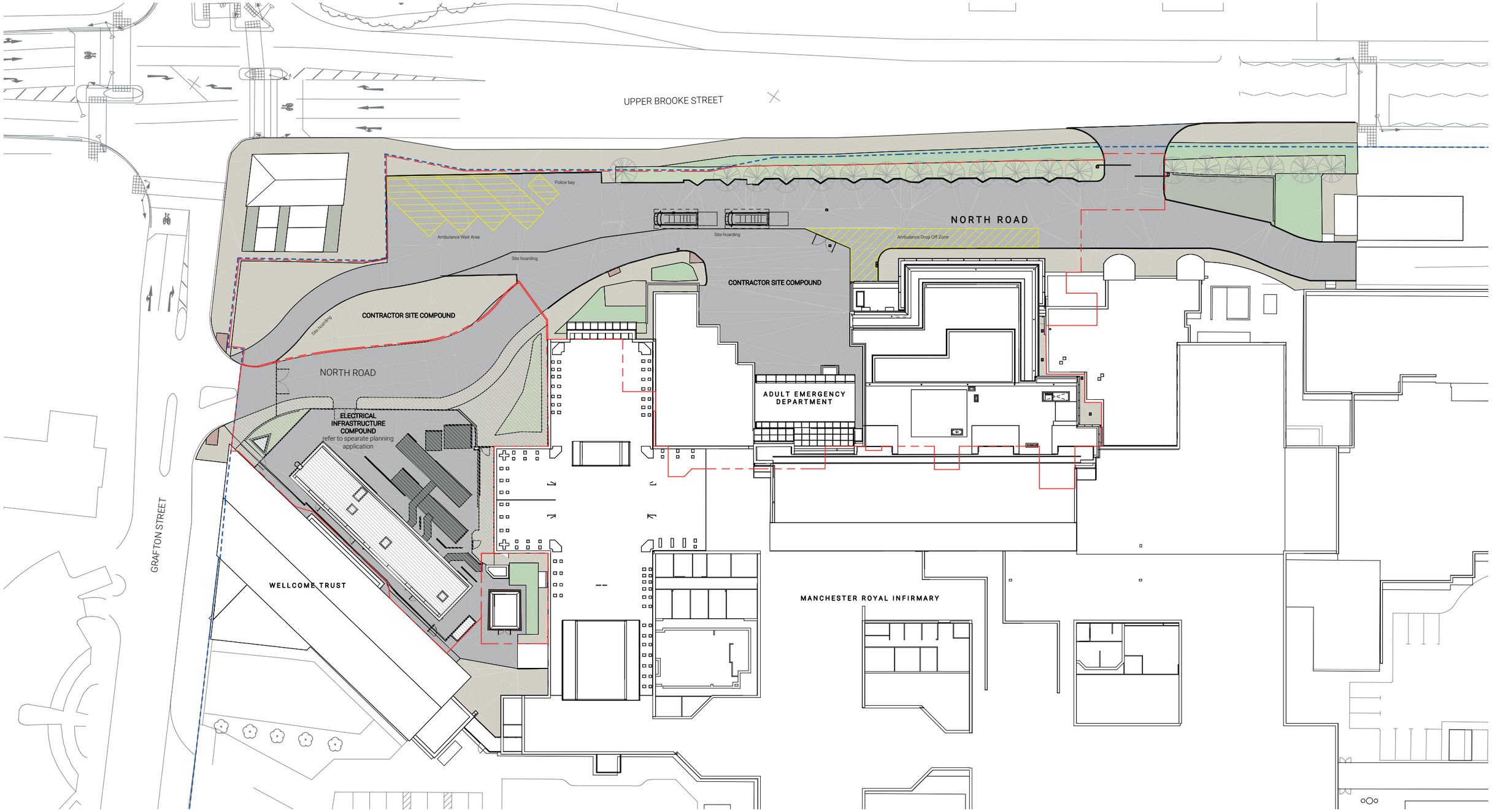


DEPARTMENT KEY

- Vertical Circulation
- Circulation
- Plant

Access

Phase 1 - Site Layout

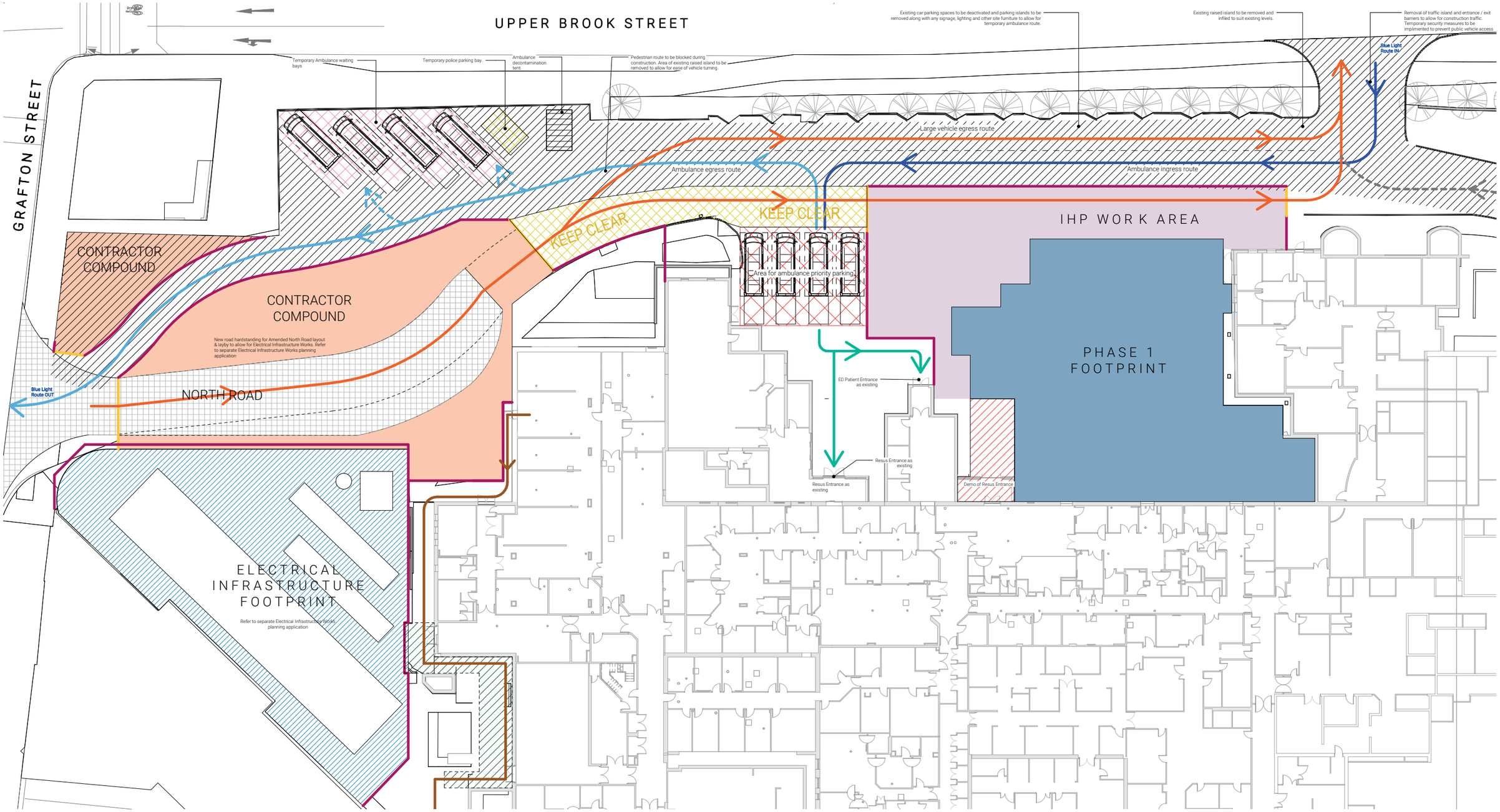


Scope of Works

MRI Site Boundary

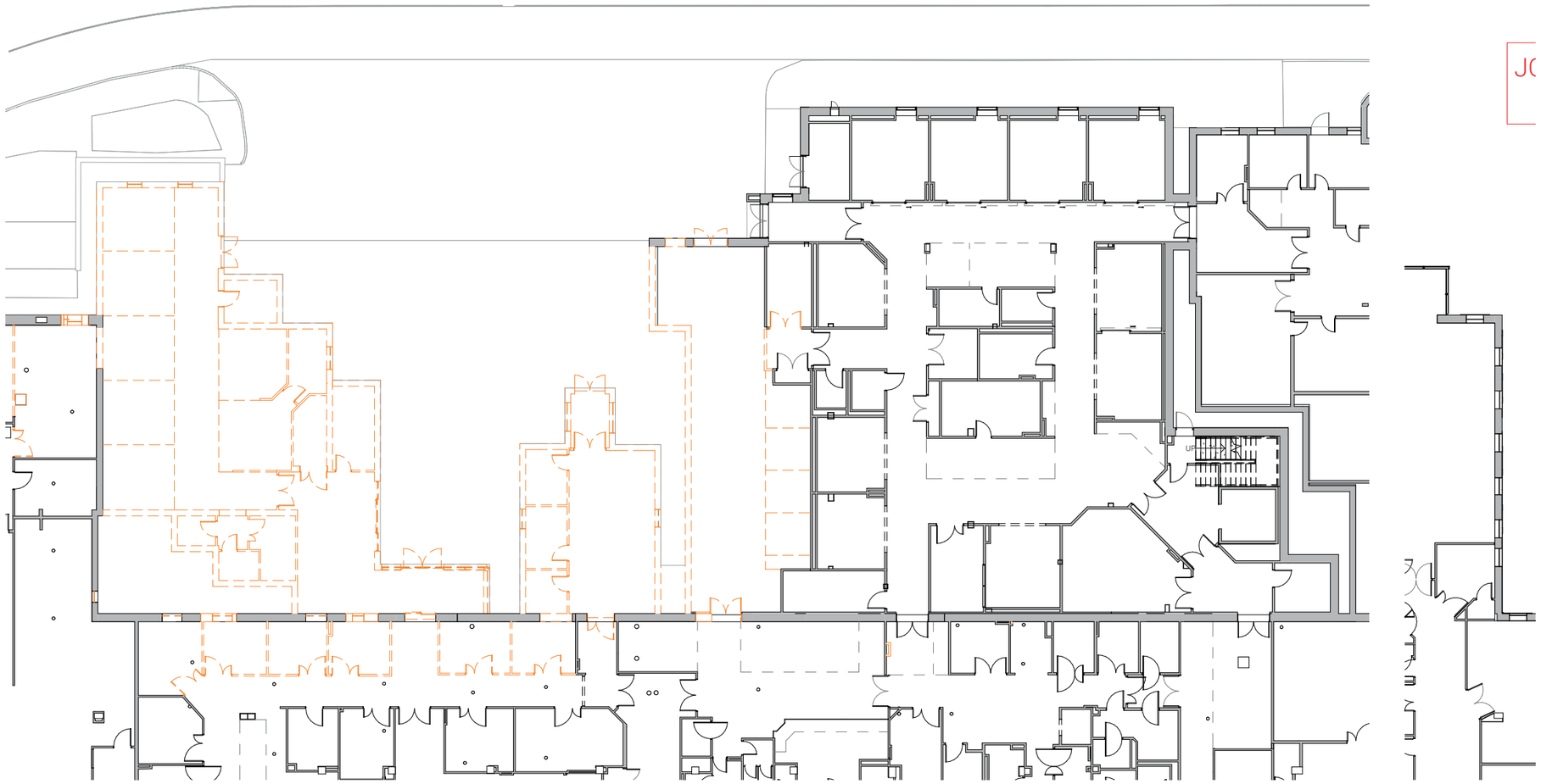
Access

Phase 1 - Site Logistics



Access

Phase 2 - Demolition Plan



KEY:

Area or element to be demolished

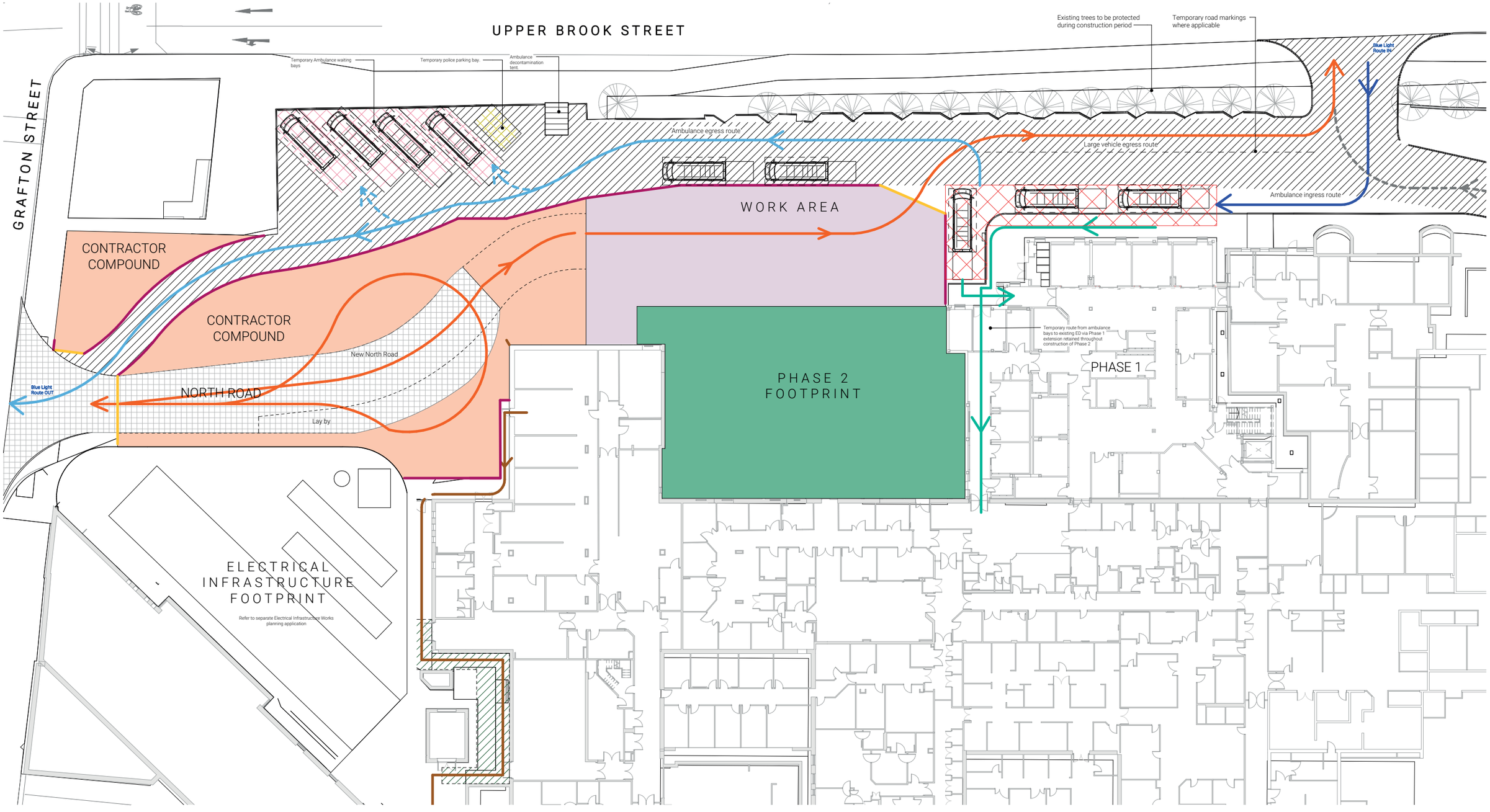
Indicative area for making good following demolition

NOTE:

Any work to existing structural or servicing elements must be reviewed and agreed by the Structural Engineer and M&E Engineer respectively prior to work commencing.

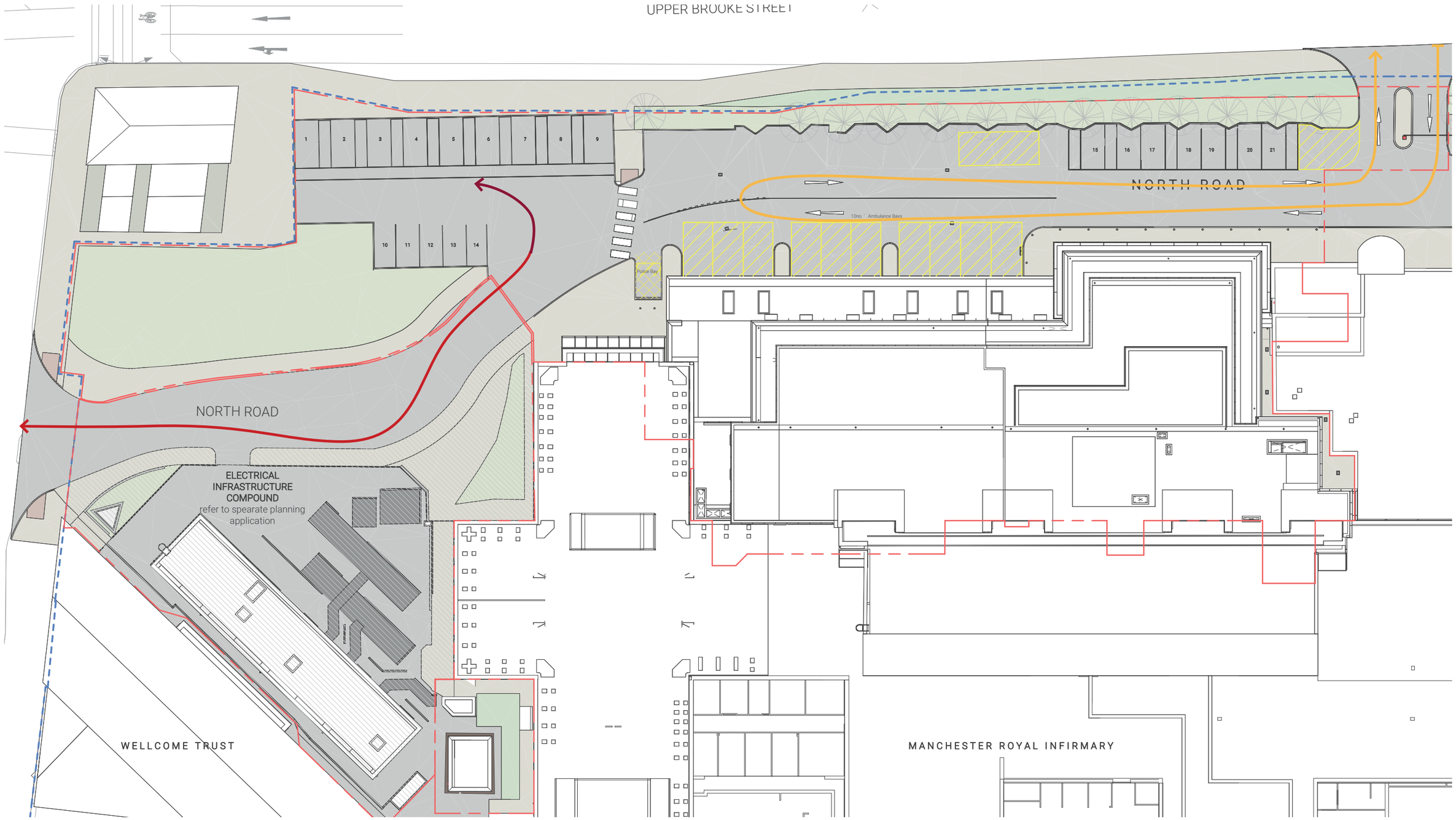
Access

Phase 2 - Site Logistics



Access

Proposed Access Plan

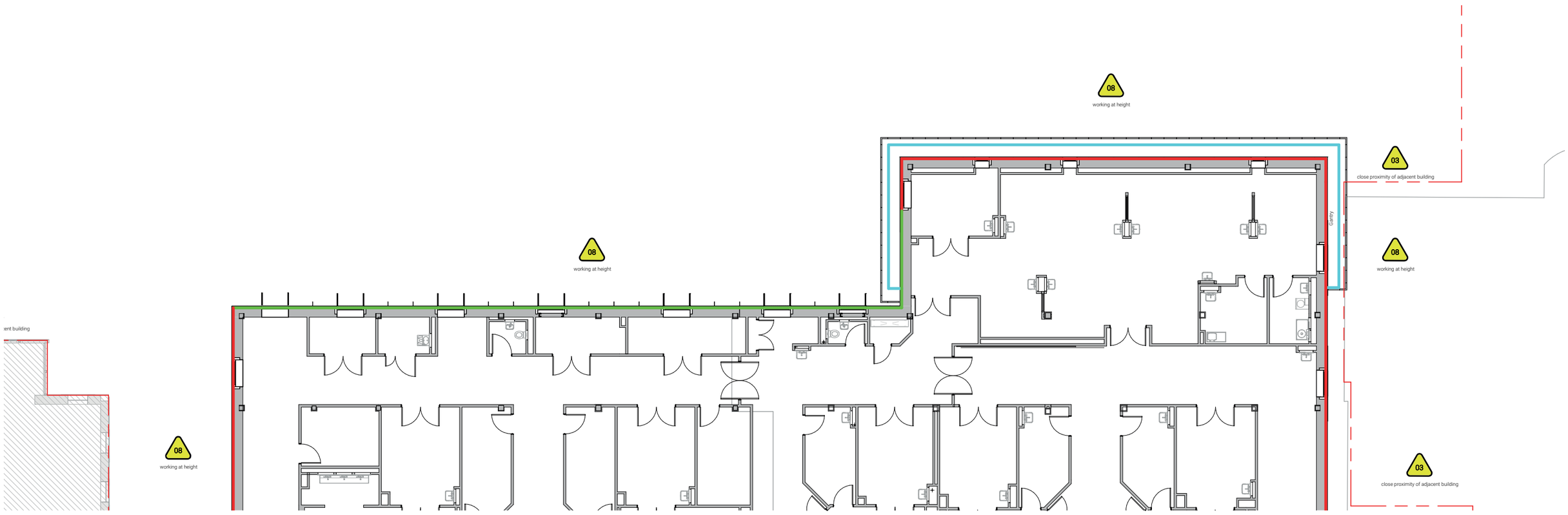




06 Schedule & Strategy

Schedule & Strategy

Cleaning & Maintenance



CLEANING:

External facade panels will be cleaned using a reach and pole cleaning system.

For cleaning and maintenance of the veil elements offset away from the primary facade a reach and pole cleaning system will be used. Where this is not possible, the internal side of the veil can be accessed via a gantry at Level 01.

Primary facade above the canopy of ambulance entrance a reach and pole system to be used, whilst using a latch mansafe system provided.

ACCESS:

Dismountable veil panels providing access onto gantry. Accessible via cherry picker or similar with height caution

ADDITIONAL NOTES:

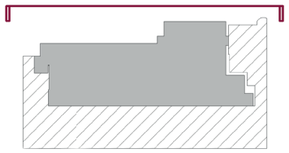
Water and power locations are to be confirmed. Water and power is to be made available within 50m of any point of work.
Access requiring hoisting is for operatives plus tool loads only.
Maximum manual handling loads for cleaning are assumed to be 20kg per operative (bucket of water, small power tools etc.). Extended reach equipment must be tethered at all times.
Mansafe systems to feature core pop ups required by specialist.

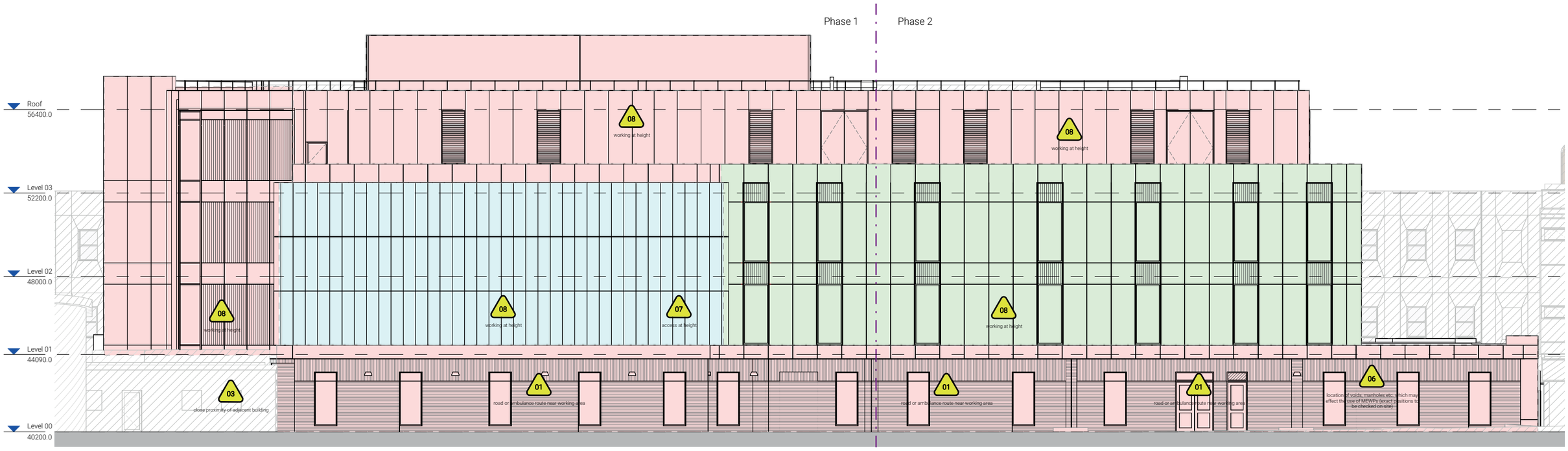
RESIDUAL RISKS:

00 Icon indicates residual risk. Location of marker does not limit risk to this area and risks highlighted should be considered throughout the site.

Schedule & Strategy

Cleaning & Maintenance





CLEANING:

External facade panels will be cleaned using a reach and pole cleaning system.

For cleaning and maintenance of the veil elements offset away from the primary facade a reach and pole cleaning system will be used. Where this is not possible, the internal side of the veil can be accessed via a gantry at Level 01.

Primary facade above the canopy of ambulance entrance a reach and pole system to be used, whilst using a latch mansafe system provided.

ACCESS:

Dismountable veil panels providing access onto gantry. Accessible via cherry picker or similar with height caution

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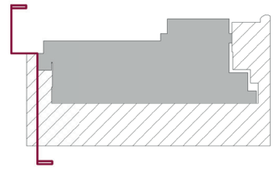
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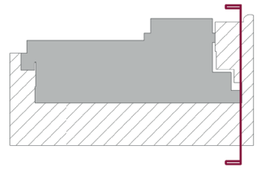
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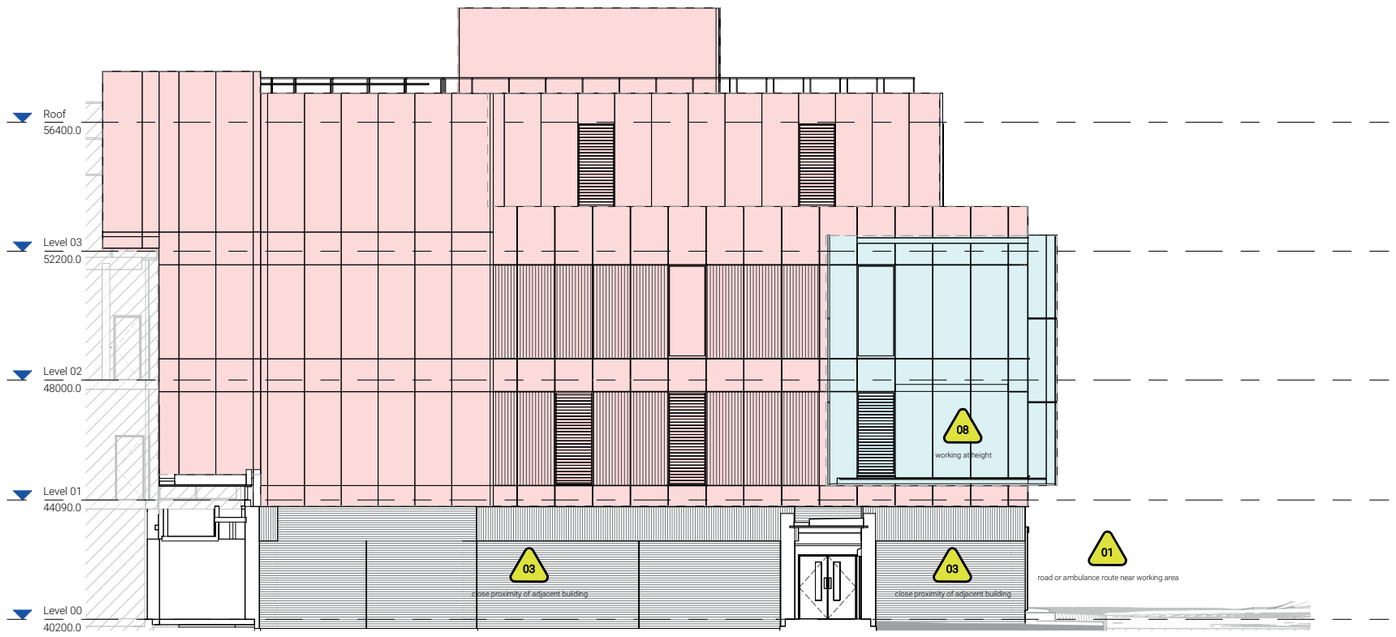
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Schedule & Strategy

Cleaning & Maintenance





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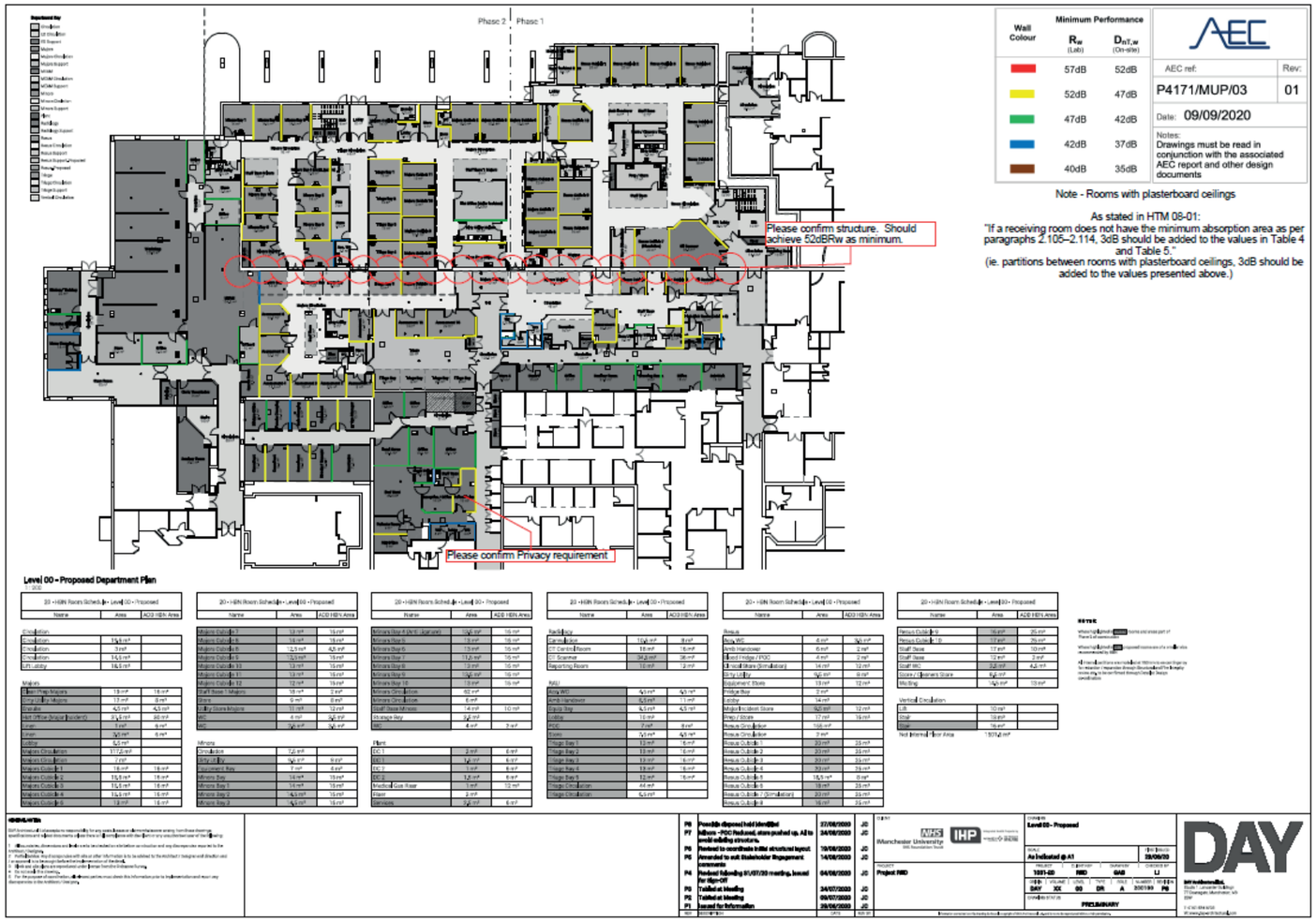
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6.0 Acoustic Report Summary

The acoustic specialist advising DAY during the design process of the proposal were AEC.

Main works advised by AEC included Partition dB Ratings, providing plans with marked up walls of certain dB Values which had to be achieved between spaces, most needing a minimum rating of 52dB.

Please refer to AECs Acoustic Report for further information.



6.1 Air Quality Report Summary

The report completed by Hoare Lea, indicates clearly the strategy of air quality incorporated in design of Project RED.

Project RED will be a fully mechanically ventilated building with filtered air being supplied from new air handling units located within the Level 1 and Level 3 Plantrooms. Each air handling unit will be HTM03-01 compliant and meet the requirements of Part L2A with respect to specific fan powers and the ErP Directive (Energy Related Projects) with respect to energy recovery.

The ventilation plant serving Project RED will be designed to operate 24 hours per day except for the Admin Department where it is anticipated this department will operate on normal office hours. Where Operating Theatres are not being used, the air handling units serving these Theatres will operate on a reduce speed i.e., set-back mode, and remain at this speed until they are required for full use via the surgeons control panel located within the Theatres.

The plantrooms have been designed to include designated air intake plenums and exhaust air plenums, thereby drawing in air from one façade and exhausting air through an alternate façade to ensure no cross contamination of air exhaust to air intake.

Please refer to Hoare Lea's Air Quality Report for further information.

HOARE LEA

Project RED.
Manchester Royal Infirmary.
IHP.

MEP ENGINEERING

VENTILATION, EXTRACTION AND ODOUR STATEMENT

REVISION P01 – 07 OCTOBER 2020

6.2 Sustainability Report Summary

This Climate Change and Sustainability Statement demonstrates how the design of the proposed Project RED development and wider actions being undertaken by the Manchester University NHS Trust comply with the relevant policies within the Manchester Local Plan Core Strategy (2012).

The scheme, together with the NHS Trust's Sustainable Development Management Plan, is committed to addressing various sustainability measures, including minimisation of energy use, reduction of embodied carbon, climate change adaptation, sustainable use of resources, minimisation of pollution and protection and enhancement of ecology.

Please refer to Scott Hughes Sustainability Report for further information.



scott hughes

Project RED – Manchester Royal Infirmary

Climate Change & Sustainability Statement

Sustainability

scott hughes design, the flint glass works, 64 jersey street, manchester, m4 6jw
tel: 0161 605 0831 www.scotthughesdesign.com

design engineers innovative solutions

07

Design Amendments

Design Amendments

Proposed Elevation Changes

7.0 Elevation Changes

The following provides a visual representation of the changes to the building massing and elevations.

- Changes in massing are the result of an increase in the parapet level at level 03 to allow access to the roof and provide a secondary means of escape via the roof at this level.
- Studies of the impact of the parapet level on the massing of the building informed the increase in height of the veil and brise soleil elements.
- Sub-contractor input has driven developments to cladding panel sizes, bringing them in line with manufacturer's requirements, including a change in the spilt of the Veil facade from two to three panels horizontally. The vertical brise soleil adjacent has been wrapped over the top of the strip windows to provide additional structural stability
- The roof level plant screen position and height has been amended to suit the developments in the roof plant as the project has developed, with raised plant decks added to carry equipment and allow maintenance space to the roof beneath,
- Towards the back of the extension the roof has been locally raised to suit the positions of the existing protruding glazed risers following new survey information becoming available.
- Developments to the steel frame meant that blanked off dummy windows originally at Level 02 behind the veil were no longer achievable and had to be omitted. Given that they were not contributing to internal daylighting levels and would be only partially visible through the perforated veil cladding panels, it was deemed to have minimal impact on the scheme.



Approved Proposed North Facade



Revised Proposed North Facade

07

Design Amendments

Proposed Elevation Changes



Approved Proposed East Facade

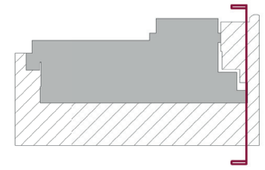


Revised Proposed East Facade

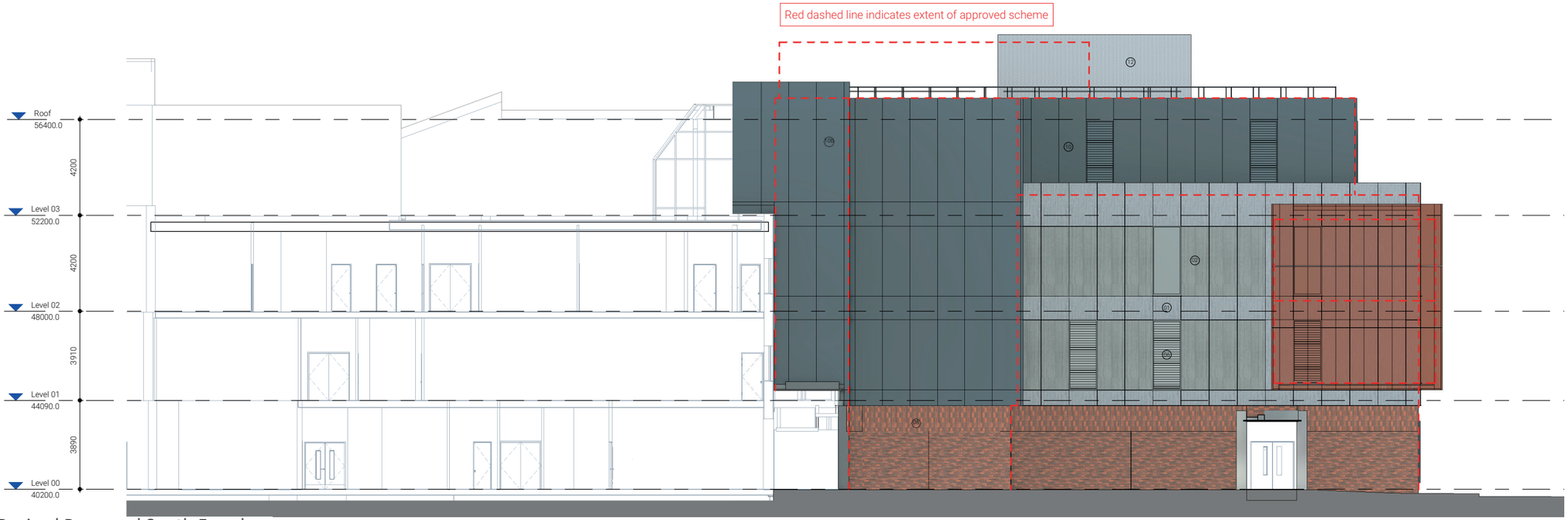
Design Amendments

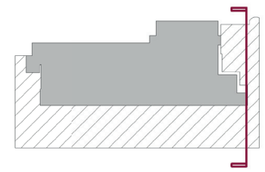
Proposed Elevation Changes





Approved Proposed South Facade





Revised Proposed South Facade

07 Design Amendments

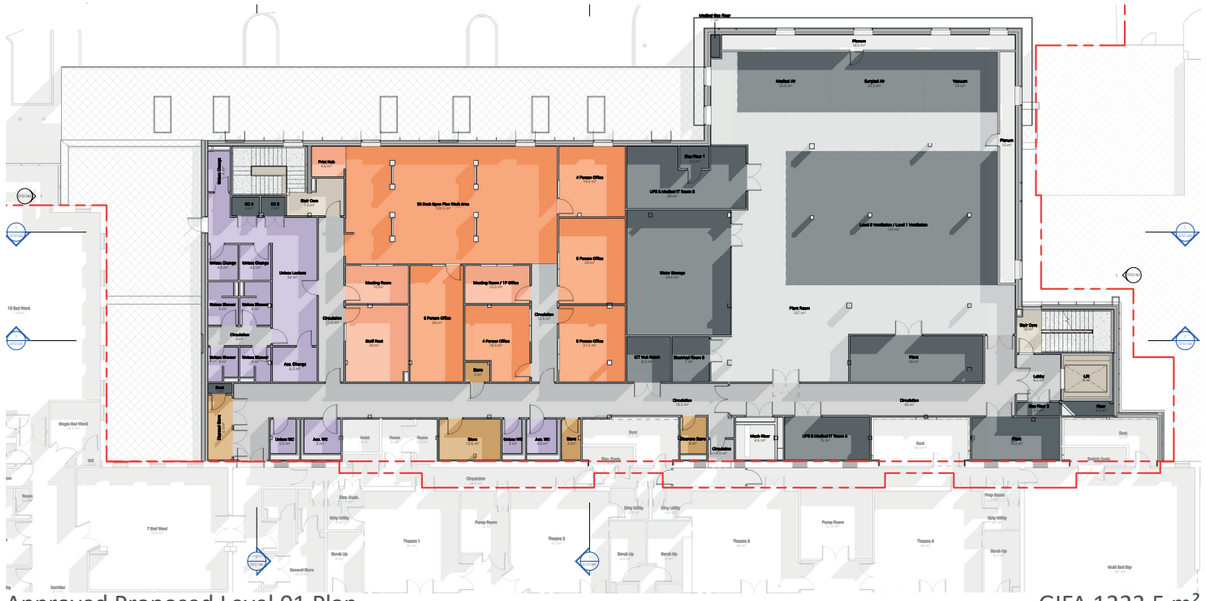
Proposed Plans Comparison



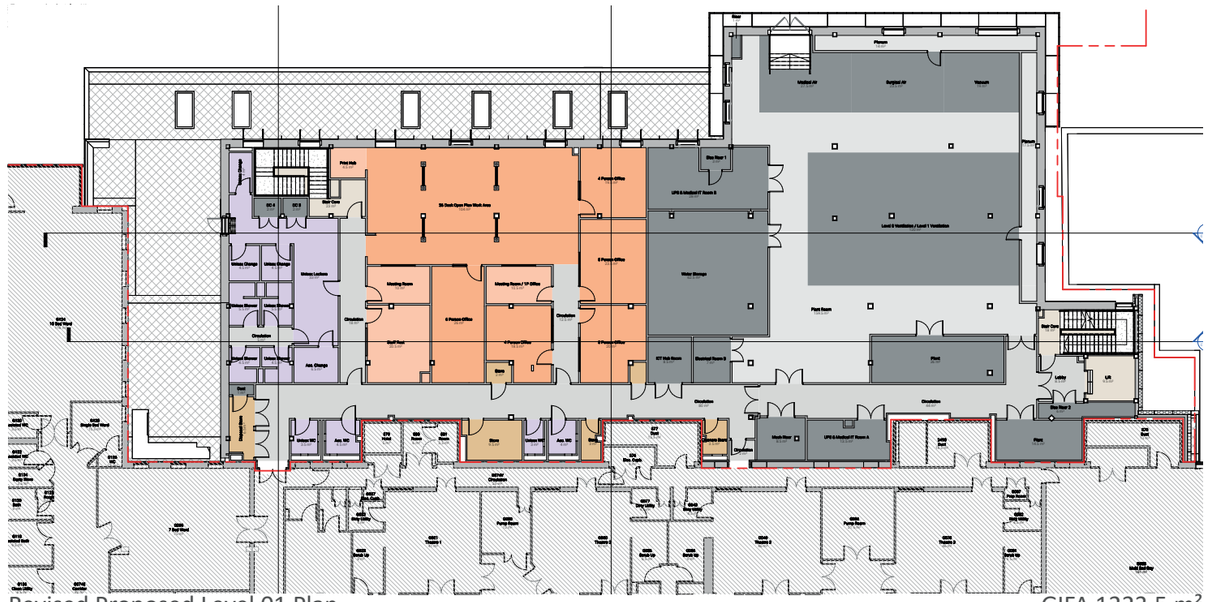
Approved Proposed Level 00 Plan GIFA 1631.5 m²



Revised Proposed Level 00 Plan GIFA 1662 m²



Approved Proposed Level 01 Plan GIFA 1223.5 m²



Revised Proposed Level 01 Plan GIFA 1223.5 m²

07 Design Amendments

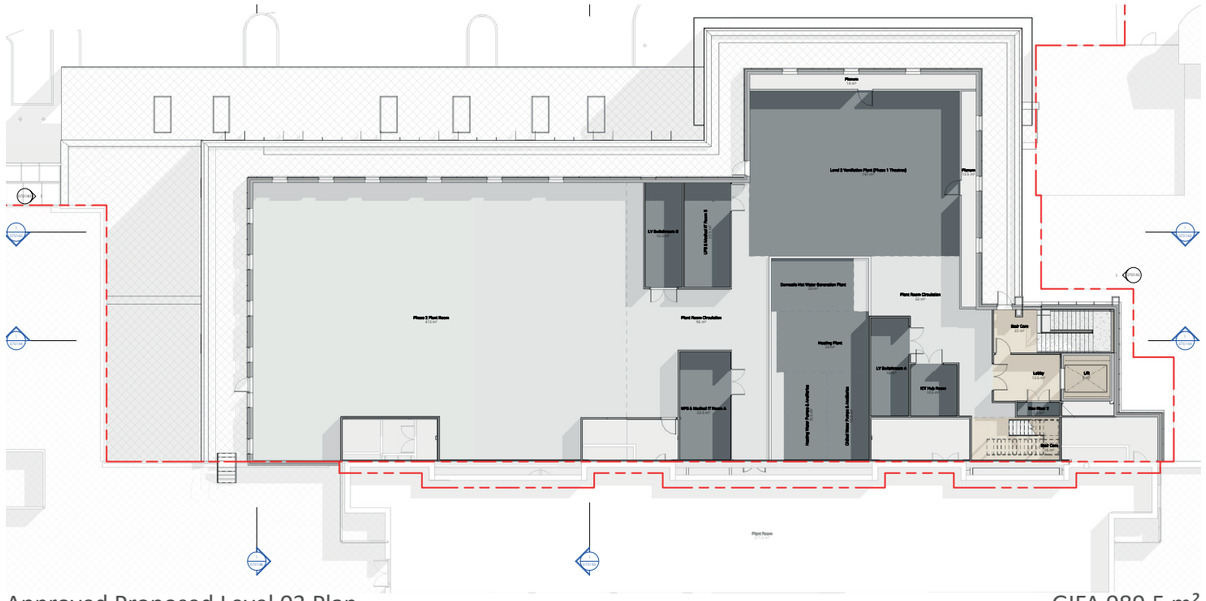
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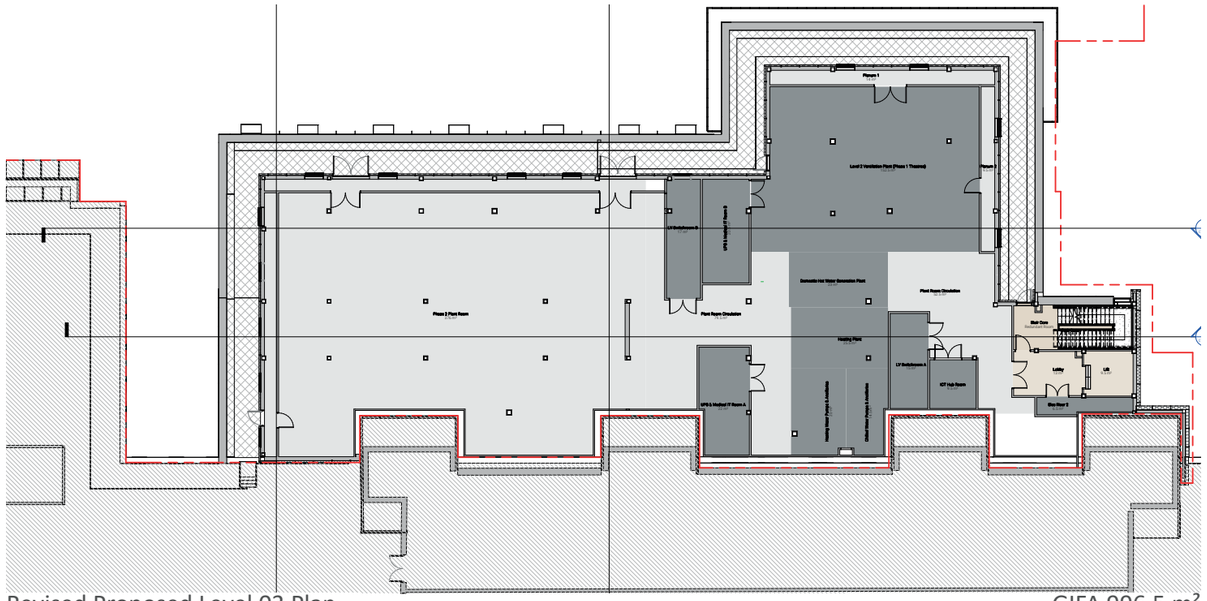
Approved Proposed Level 02 Plan — GIFA 1329.5 m²



Revised Proposed Level 02 Plan — GIFA 1326.5 m²



Approved Proposed Level 03 Plan — GIFA 989.5 m²

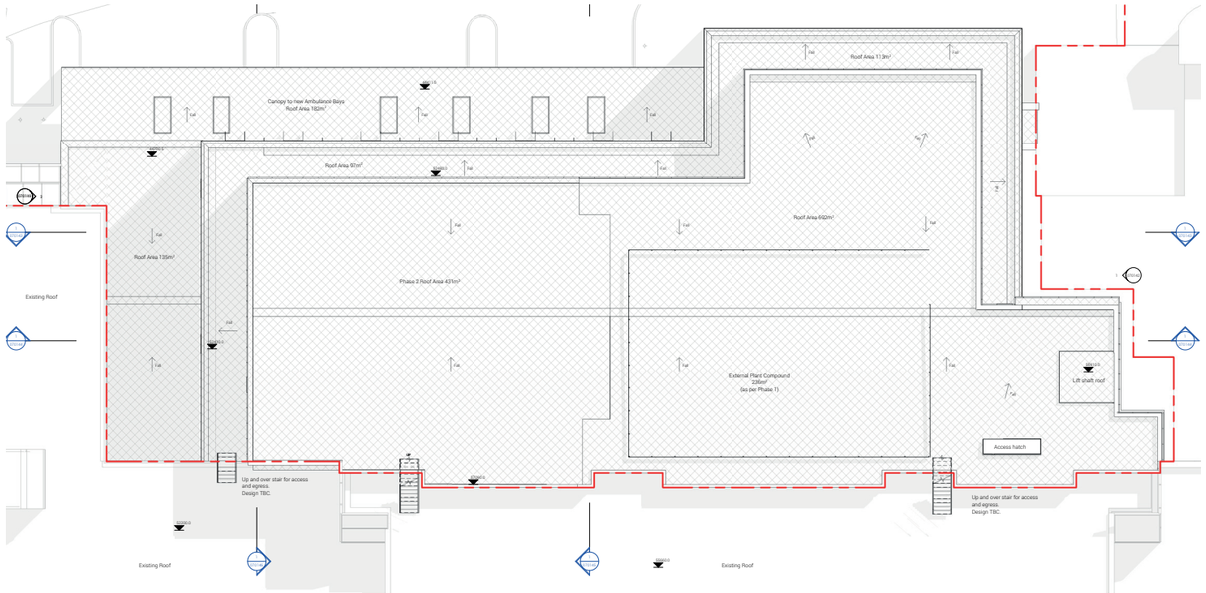


Revised Proposed Level 03 Plan — GIFA 996.5 m²

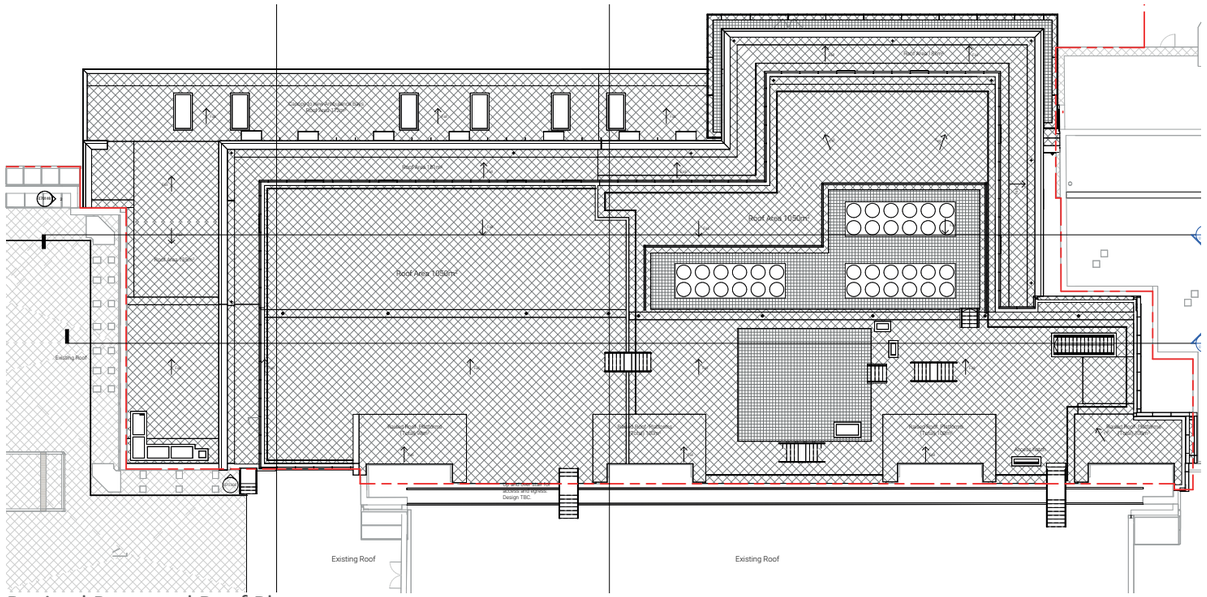
07

Design Amendments

Proposed Plans Comparison



Approved Proposed Roof Plan



Revised Proposed Roof Plan

DAY

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