

Welcome

Welcome to this public exhibition on plans to create the Centre for Research into Rare Disease in Children.

The exhibition is part of a public consultation programme to share our proposals with staff, patients, families, carers and the local community and obtain their views.

The centre is a partnership between Great Ormond Street Hospital for Children NHS Foundation Trust (GOSH), University College London (UCL) and Great Ormond Street Hospital Children's Charity.

Feedback from the public consultation will be recorded and considered carefully by the project team as we develop our proposals in advance of applying for planning permission later this year.

The consultation is being managed by the Redevelopment Directorate at GOSH.

If planning permission is granted, the new building would be occupied by clinicians from GOSH and scientists from UCL.

We want to hear your opinions and would be grateful if you could take a couple of minutes to complete a feedback form before you leave.

If you have any questions that were not answered today, please feel free to submit them by email to the following address and we will respond as quickly as possible: redvelopment.feedback@gosh.nhs.uk

If you don't have access to a computer, you can contact the hospital Redevelopment team on 020 7405 9200.

You can also respond to the consultation online at: www.gosh.nhs.uk/CRRDC-consultation



Why?

We want to create a building in which scientists and doctors can work side-by-side to care for children and young people with rare diseases, learn more about what is making them unwell and discover new ways to help them get better.

Great Ormond Street Hospital NHS Foundation Trust (GOSH) and UCL's Institute of Child Health (ICH) and Institute of Cardiovascular Science (ICS) undertake research and develop new diagnostics, treatments and devices that can improve the lives of patients treated at our hospital and children elsewhere in the UK and abroad.

Rare diseases are complex and not well understood in comparison to other illnesses. This means that sufferers often experience a delay in getting diagnosed and have limited options for treatment.

But recent advances in science and technology offer new hope. Genomics (the science of genetic mapping and DNA sequencing) is helping scientists to identify the genetic basis of rare diseases. And new treatments

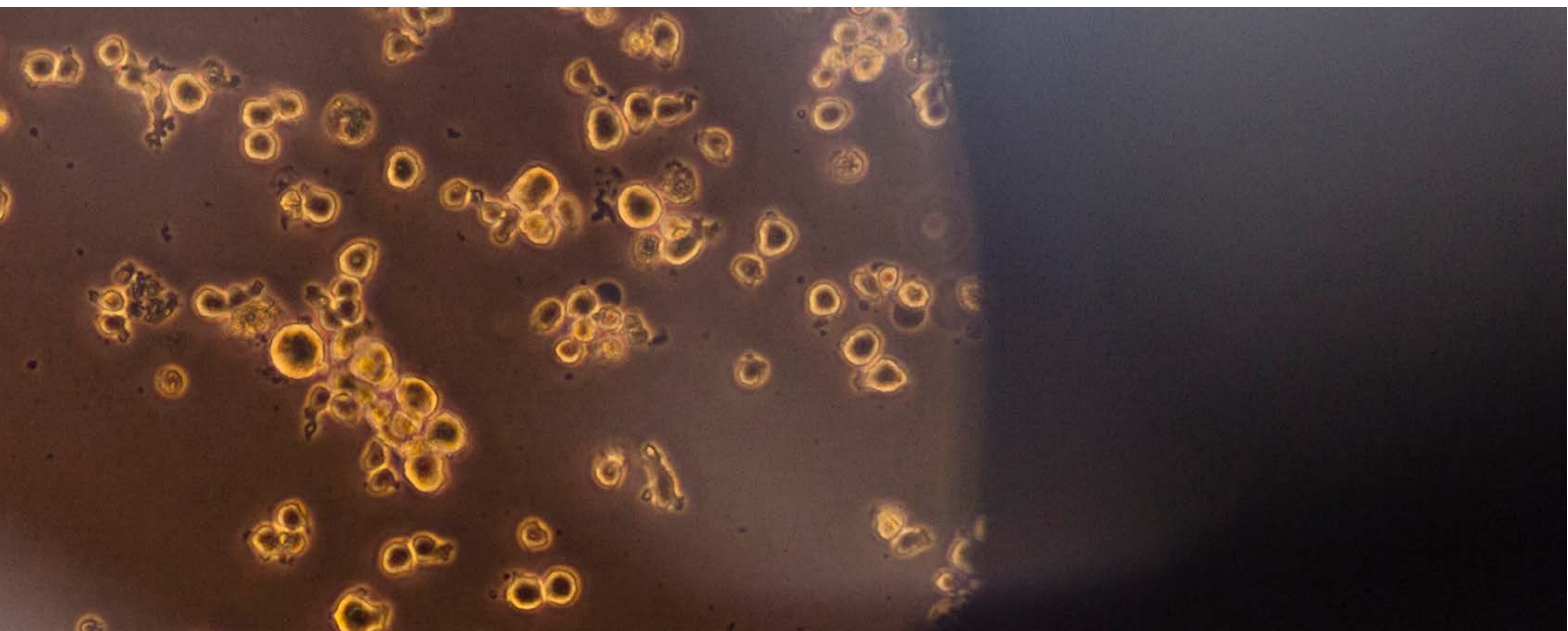
such as stem cell therapies allow us to offer patients the chance of a longer and fuller life.

Bringing knowledge, technology and patients together in one place would speed up the 'bench to bedside' process of developing new treatments.

The building would give our medical and scientific experts the facilities and access to patients they need to:

- understand and read genetic codes more quickly
- develop gene and cell therapies to treat genetic conditions
- use stem cells to regenerate organs or tissues
- manufacture new medical devices

Most importantly, it will bring breakthroughs and cures for rare diseases closer with every passing day.



About rare disease in children

Rare diseases represent a considerable health burden, a fact that is attracting increasing concern both nationally and internationally. This is because, taken together, they are in fact relatively common. Much more needs to be done to help those whose lives are affected by rare disease, including much greater emphasis on medical research.

Rare diseases in children include childhood cancers, cystic fibrosis and muscular dystrophy. There are over 6,000¹ conditions in total.

Individually, each disease affects less than one in 2,000 people. But as a group, they will affect one in 17 of us at some point in our lives².

Seventy-five per cent of rare diseases affect children, and nearly one-third will die before their fifth birthday.

Most rare diseases are caused by a genetic defect, which means that children are born with the condition and will not get better by themselves. The symptoms of rare diseases can often be very serious, making patients very sick or causing disabilities that impact on their how long they will live and their quality of life.

But scientific breakthroughs and new technologies open up possibilities for treatment that were unimaginable even just a few years ago. The new building will help us to harness this potential and help more children not just at Great Ormond Street Hospital but nationally and internationally.

Case study

Nina Warnell suffers from SCID (Severe Combined Immunodeficiency), a condition that means that she was born without an immune system due to a genetic defect. This condition is sometimes referred to as 'bubble baby' disease, because patients need to live in a sterile environment. As Nina's future looked uncertain, her family made the decision that she would take part in a ground-breaking gene therapy trial at Great Ormond Street Hospital. Gene therapy involves replacing faulty genes with working versions of the same gene. The aim is to integrate healthy genes into patients' DNA so that cells now have the correct information to function normally in the body.

One year on, Nina is a happy little girl with a functioning immune system. She has effectively been 'cured' from a disease that would otherwise have severely limited her ability to live a normal life.



Sources:
1. Orphanet
2. Official Journal of European Commission

How the new building would support our work

Working together, Great Ormond Street Hospital (GOSH) and University College London (UCL) operate the largest centre for paediatric research in Europe and one of the largest worldwide. This is one of the only centres in the world with the specialist expertise and diverse patient population needed to discover cures for rare diseases.

Discovering cures for rare diseases in children is challenging for many reasons, for example:

- Each condition affects comparatively small numbers of patients, so it's difficult for researchers to obtain enough patients to study each disease thoroughly.
- It can be difficult to gather enough patients to take part in experimental treatments or clinical trials.
- Many patients have serious and life threatening conditions, so the back up of a large, specialist children's hospital nearby is essential for their safety.

In recent years, GOSH and UCL have overcome these challenges and achieved some amazing breakthroughs. But we urgently need better facilities and more space to allow us to help more patients, develop new treatments and share our discoveries with others.

The building will support scientists, clinicians, engineers and other experts to pool their knowledge and improve our expertise in the diagnosis, understanding, management and care of rare diseases.



Viewpoints

Two of our leaders who carry out clinical work and research explain how the centre will support their work.

Professor Bobby Gaspar, Paediatric Consultant Immunologist at Great Ormond Street Hospital and Director-Designate for the Centre for Research into Rare Disease in Children

“The Centre will be the first of its kind to bring clinicians, patients and scientists together to translate pioneering research techniques into hope for children across the world who have rare diseases.

“I have led a number of successful trials that saw gene therapy transform the outcomes of children with SCID – a rare immune disorder. My hope is that this new centre will allow us to go even further and develop gene therapy as well as cell and stem cell therapies as a standard treatment for many more conditions where children are born with rare diseases.”

Professor Andrew Taylor, Divisional Director of the Cardio-respiratory Service at Great Ormond Street Hospital and Professor of Cardiovascular Imaging at the UCL Institute of Cardiovascular Sciences

“The really exciting thing about the new building is the possibility of bringing everyone into the same working environment. As a clinician, I need to explore my options for treating a patient with experts who can help me develop them. For example, specialist computer modelling can help test and refine new devices before we use them in patients.

“A variety of different professionals coming together under one roof allows us to turn innovative thinking into practical solutions. It also gives us a manufacturing capacity to develop those solutions at scale so we can help more and more patients.”

Professor Taylor has developed a multi-disciplinary approach to treating his patients' conditions. Clinical meetings might be attended by scientists, engineers or even mathematicians who will work with the cardiologists to pool their knowledge and develop devices that are unique to a patient's anatomy.



Redevelopment at GOSH – working with the community

Great Ormond Street Hospital (GOSH) has been constantly evolving since it opened in an 18th century townhouse in 1852. Our current redevelopment programme is replacing cramped, out-of-date buildings so we can provide the best care and treatment for more children in safe, spacious, comfortable surroundings. This would have not been possible without the support, patience and co-operation of our local community.

Providing modern clinical facilities – recent redevelopment milestones

1994

Funds raised by the transformational Wishing Well appeal allow us to open the Variety Club Building and the Camelia Botnar Laboratories.

2004

We open a patient and family hotel and new facilities in the main hospital site and neighbouring Royal London Hospital for Integrated Medicine (then the Royal London Homeopathic Hospital).

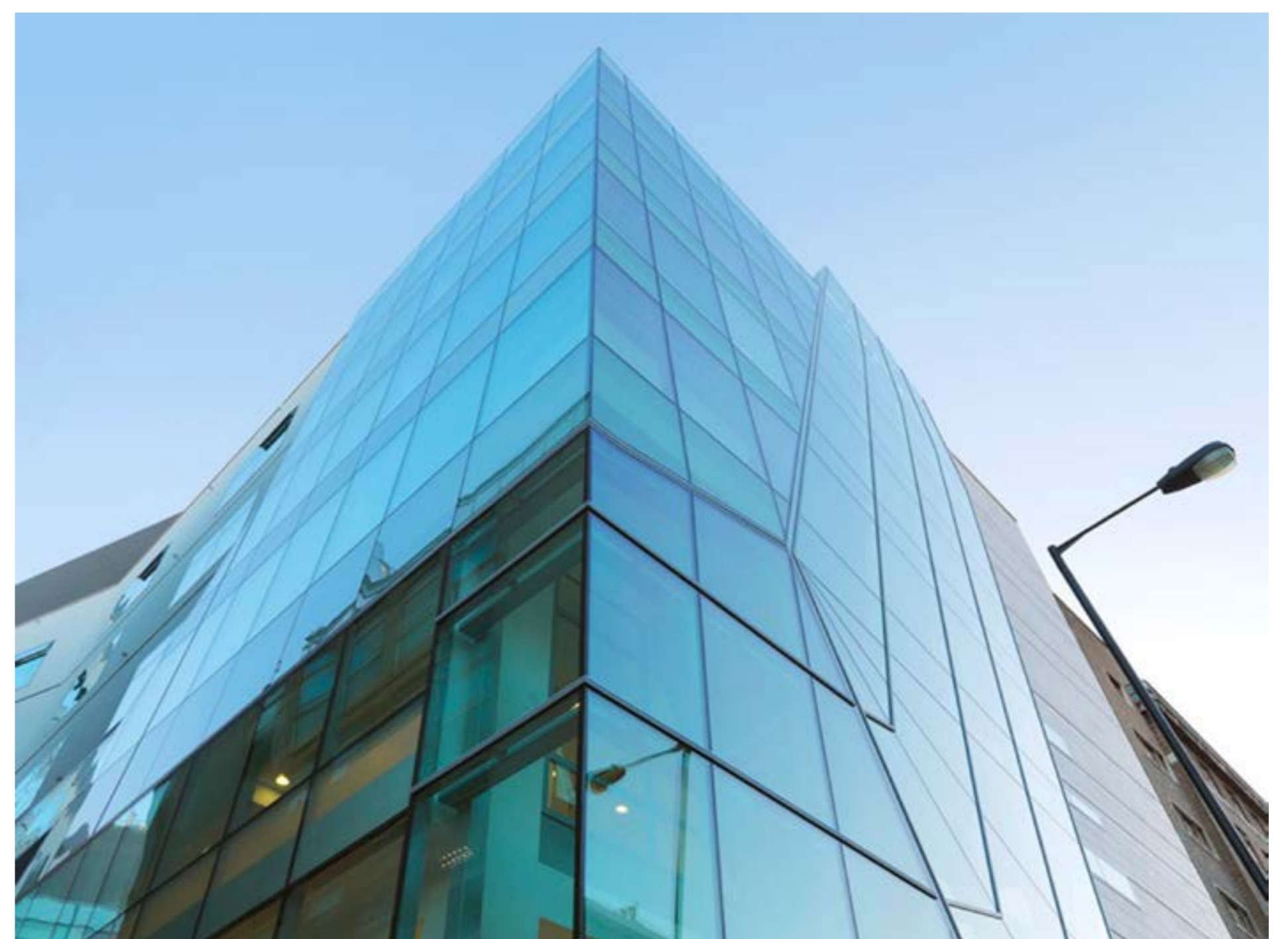
2012

Completion of the Morgan Stanley Clinical Building provides seven floors of state-of-the-art facilities and the first part of the Mittal Children's Medical Centre.

2014

Work continues to redevelop the old Cardiac Wing to create the Premier Inn Clinical Building, which will complete the Mittal Children's Medical Centre by 2017.

Investing in our buildings ensures we can stay in our current premises for the long term. And since we are here to stay, maintaining good relationships with our neighbours is a top priority.



We only employ construction companies with excellent Considerate Constructor and sustainability credentials. We work with them to ensure that disruption and out-of-hours work is kept to a minimum, that safety procedures are in place and that local residents and businesses receive advance warning of any work that could impact upon them.

The GOSH Redevelopment Residents' Liaison Group supports this activity, and is attended by local residents and their representatives. Anyone who lives or works locally is welcome to attend and can obtain further information from the hospital's Redevelopment team: redemption.feedback@gosh.nhs.uk

Timetable

Outline timetable for creating the Centre for Research into Rare Disease in Children.

CONSULTATION

June–July 2014

Public consultation to obtain feedback on proposals to date.

August 2014

Analyse and reflect on feedback and continue work on building design.

September 2014

Submission of the planning application to redevelop the site.

CONSTRUCTION

If planning permission is granted:

January–March 2015

Demolition of the existing building.

Autumn 2015

Commence construction of the new building.

Early 2018

Proposed completion date.



About the site

The site of the proposed new building is within the Bloomsbury Conservation Area. It is bordered by the historic Coram's Fields and a range of residences and businesses.

The existing building

The existing building at 20 Guilford Street is an office block built in the 1960s. Previously used as a computer centre by the University of London, it became surplus to requirements and has been disused for some time.

The site was purchased by Great Ormond Street Hospital Children's Charity in 2010 with the intention of establishing the Centre for Research into Rare Disease in Children.



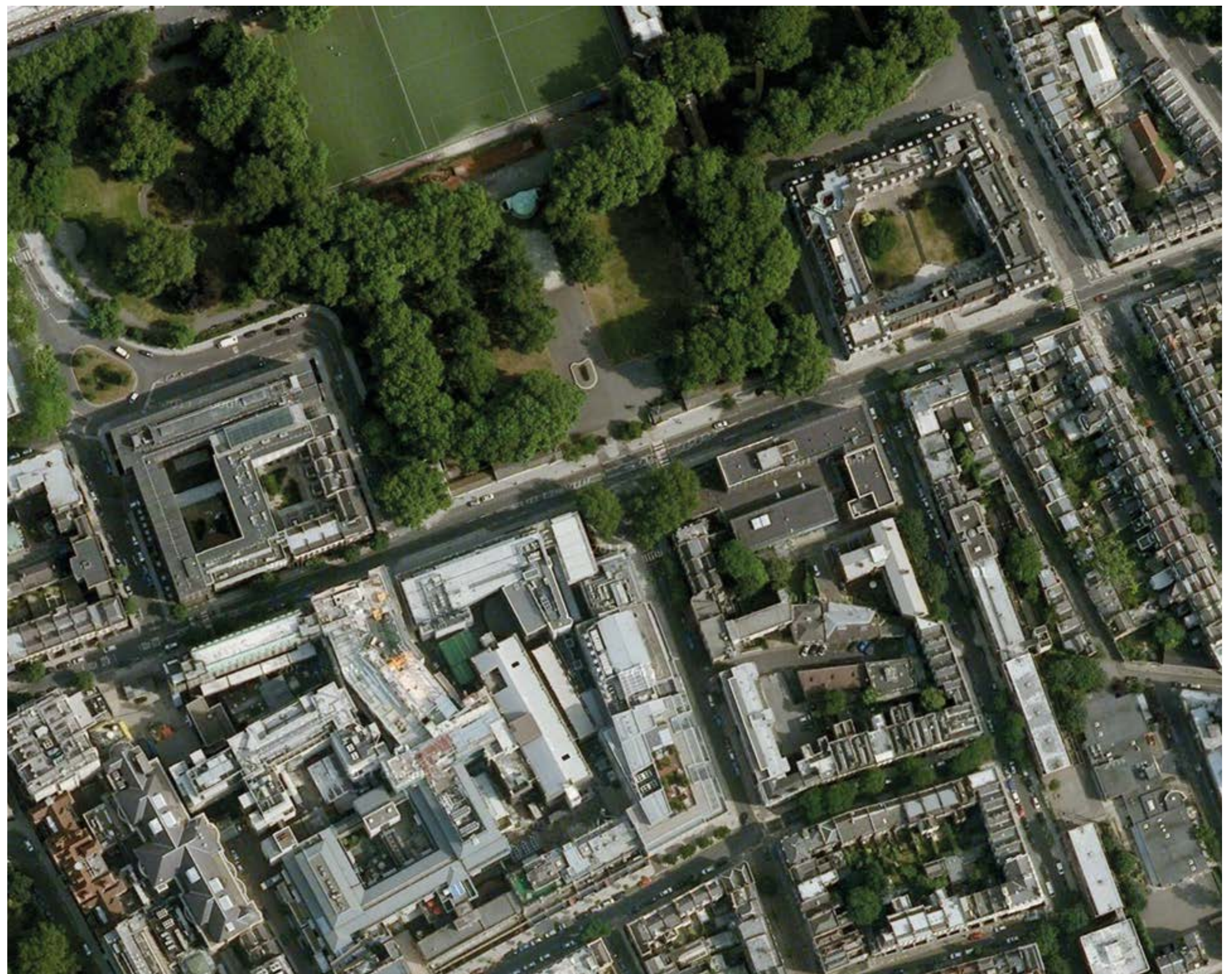
Site context

The site for the proposed new building is located on Guilford Street, directly opposite Coram's Fields, a Grade II listed public space.

The site sits within three sub-areas of the Bloomsbury Conservation Area and there are a number of listed buildings in the immediate vicinity.

The majority of the site sits within the Coram's Fields/Brunswick Centre sub-area, which comprises generally large buildings including:

- Goodenough College
- the UCL Institute of Child Health on Guilford Street
- the International Hall on Lansdowne Terrace
- the Brunswick Centre
- the University College, London School of Pharmacy
- residential blocks on Mecklenburgh Square



Aerial photograph of the site: 20 Guilford Street is opposite the south east corner of Coram's Fields



Coram's Fields pavilion



Guilford Place from Coram's Fields, looking south



Millman Street looking north

Coram's Fields and GOSH: a shared heritage of caring for children

Great Ormond Street Hospital (GOSH) has been caring for children for over 160 years and Coram's Fields are situated on the site of the former Foundling Hospital, established in 1739. The new building would continue a long history of the use of this site for activities to support children's welfare.

GOSH started life as an 18th century townhouse at no 49 Great Ormond Street, with just two 10-bed wards and two physicians. Originally called The Hospital for Sick Children, it opened in 1852 and was the first hospital in the UK dedicated solely to the treatment of children.

The hospital was founded by Dr Charles West, who was driven by the shockingly high level of infant mortality in the capital at this time.

The Foundling Hospital provided a home and education for orphaned children and was relocated outside of London in the 1920s. Campaigning and fundraising by local residents and a donation from the Harmsworth family of newspaper proprietors led to the creation of the current park, which opened in 1936.

Today, Coram's Fields provides much-needed space and facilities for our city's children and young people.



Great Ormond Street Hospital in 1870



Archive photograph of Guilford Place in 1912



The Foundling Hospital, established in 1739 by Captain Thomas Coram

Designing the building

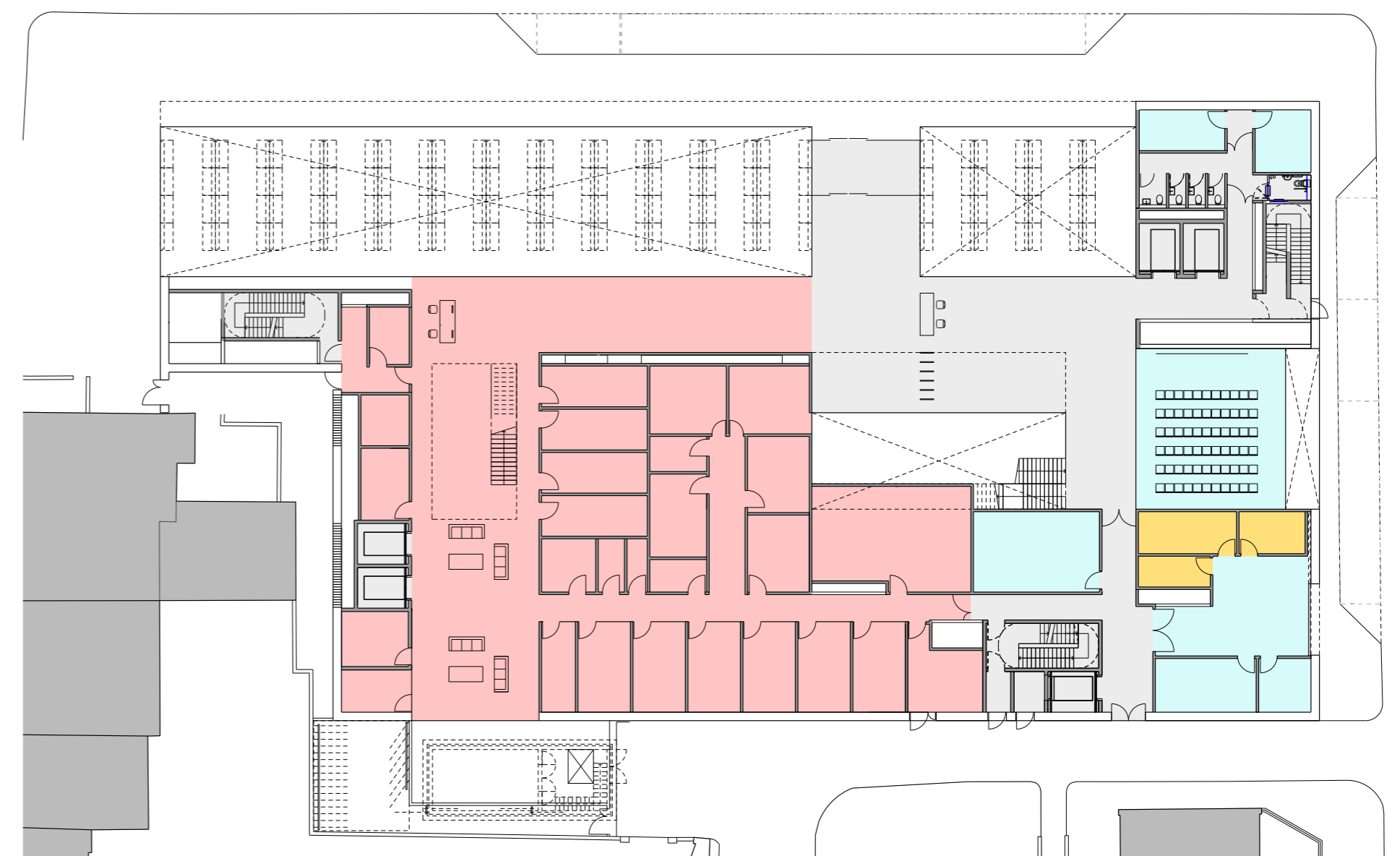
Designing a building that is the first of its kind in the world is very challenging.

Our award-winning architects, Stanton Williams, have been working closely with our staff and experts in construction, medicine and research. They aim to create a high-quality building with outstanding research and clinical facilities to promote interaction between the various disciplines, support exceptional patient care and deliver ground-breaking research. The building is to contain:

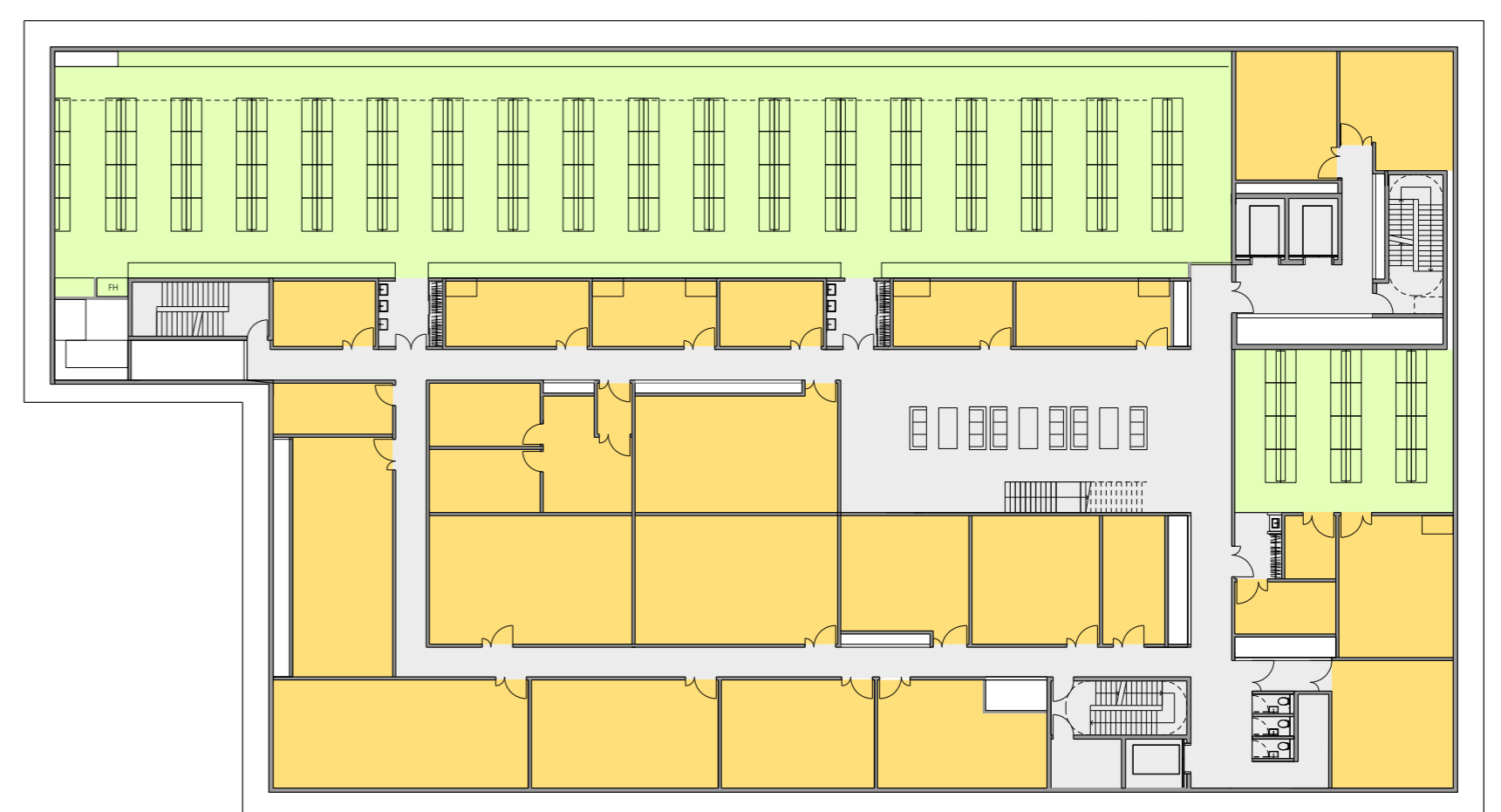
- Various kinds of research laboratories required by our scientists to study rare diseases and develop treatments.
- A much-needed new outpatients clinic with facilities suitable for medical staff, patients and their families.
- Research write-up areas and meeting rooms to allow our scientists and medical teams to progress their work.

We also want the building to:

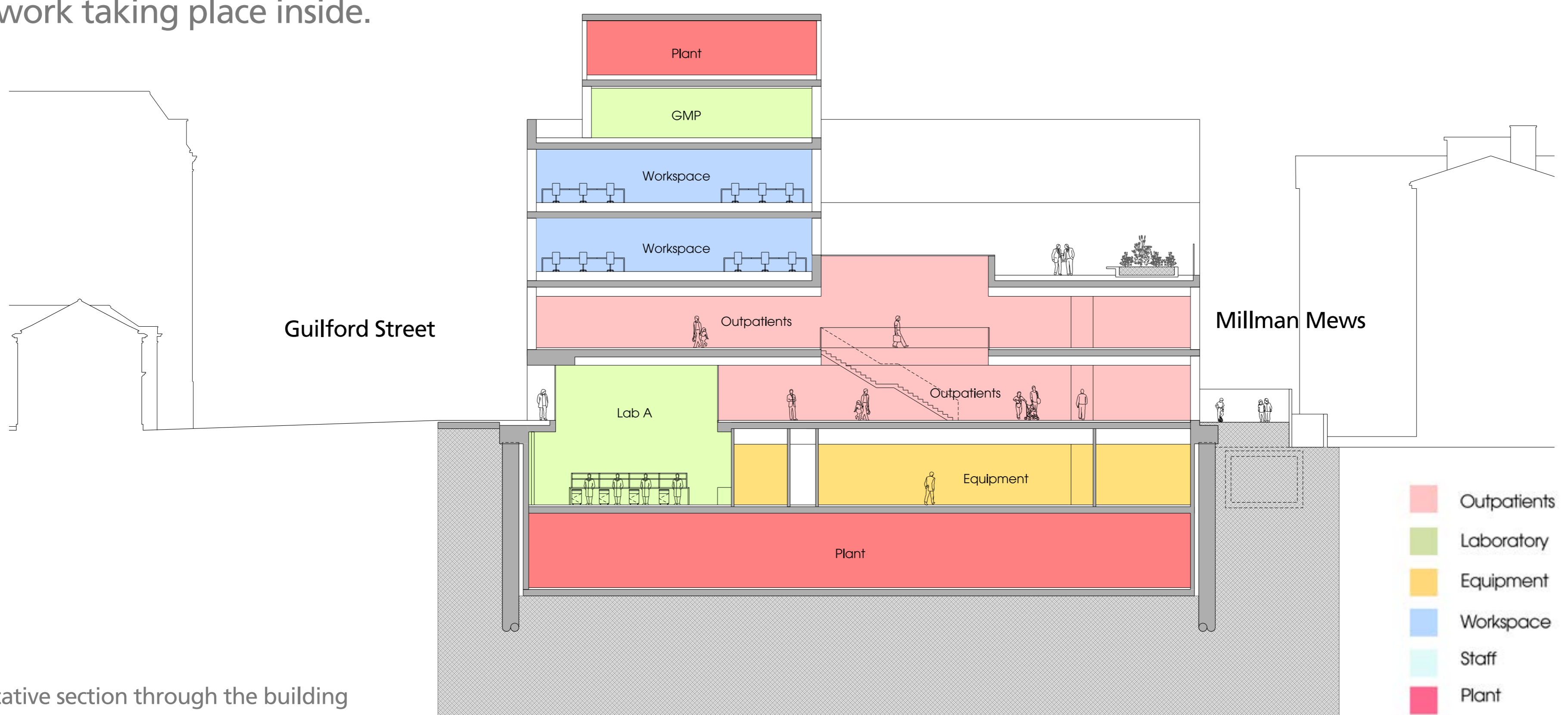
- Relate sensitively to the site and its context within a conservation area.
- Have a human, friendly scale with appropriate use of high-quality materials.
- Symbolise excellence and provide a world-class patient experience.
- Engage patients and the public in the important work taking place inside.



Indicative plan of the ground floor



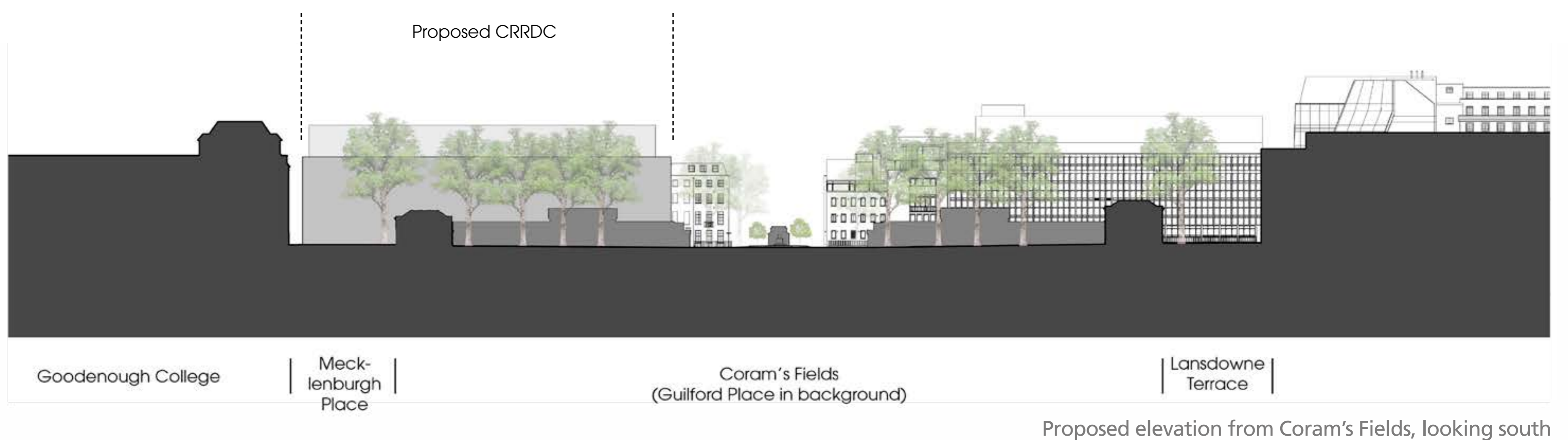
Indicative plan of the lower ground floor



Indicative section through the building

Building exterior: massing and site context

The proposed building responds to the formal layout that once characterised Coram's Fields by reinstating the former symmetrical entrance to Guilford Place.

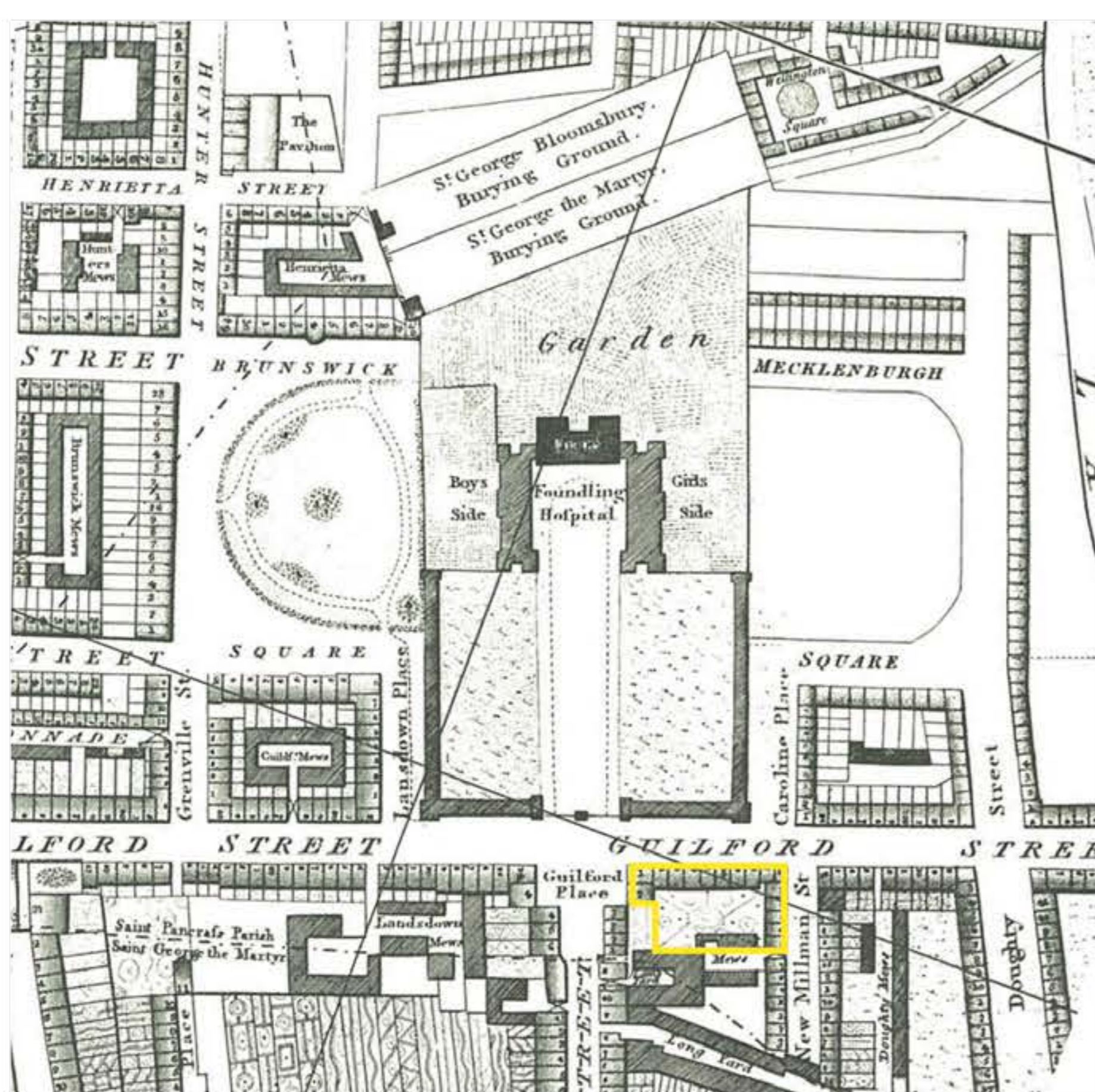


Coram's Fields is framed by 5–6 storey high buildings, mostly institutional and civic in function including:

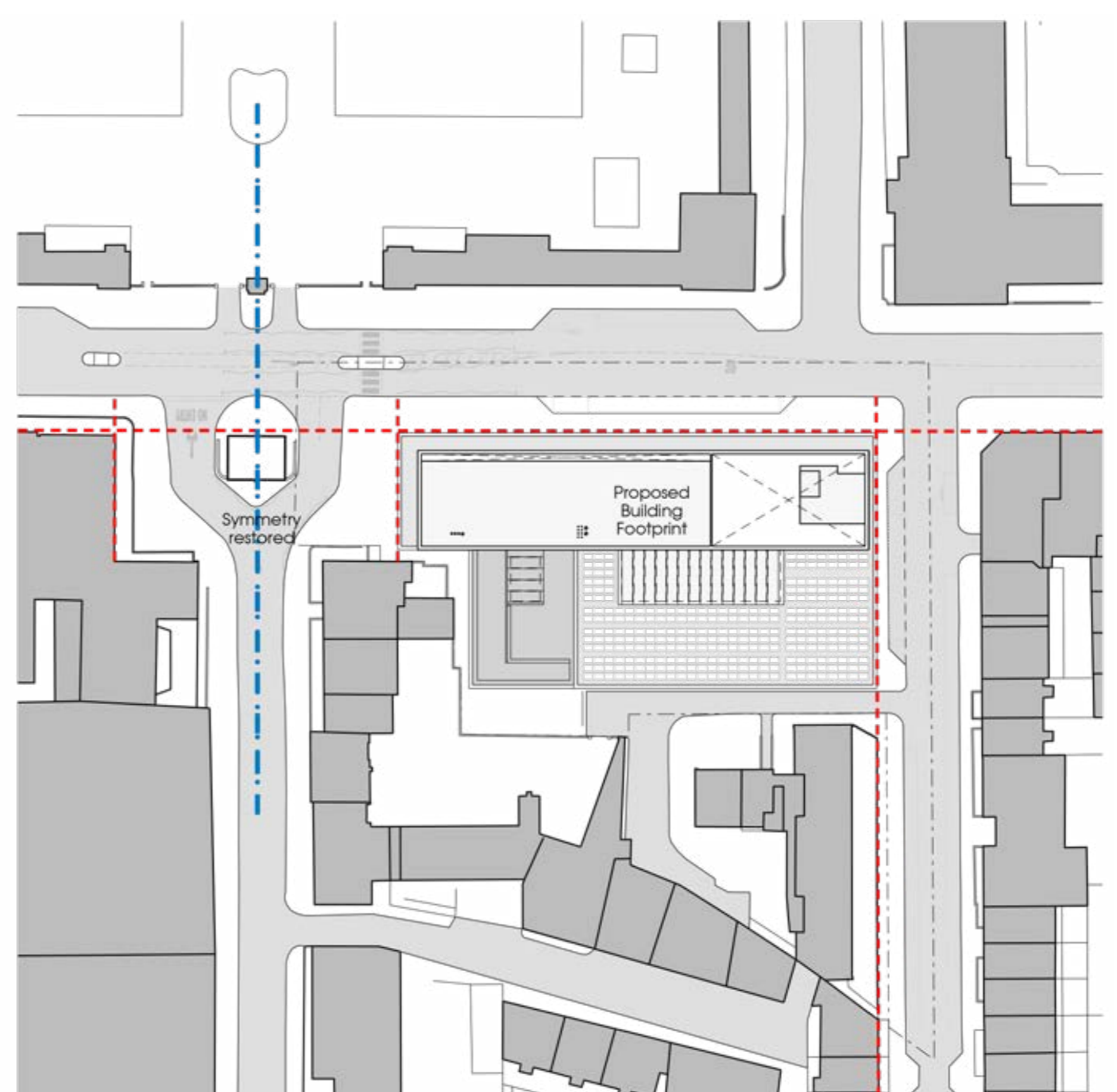
- The UCL Institute of Child Health to the south.
- The International Hall on Lansdowne Terrace (UCL student hall), the Brunswick Centre and the UCL School of Pharmacy to the west.
- Goodenough College and the residential blocks on Mecklenburgh Square to the east.

The proposed height and massing (shape) of the new building will form part of this urban setting along Guilford Street. The building will be six storeys high along Guilford Street, with two set-back levels to reduce its visual impact.

At the rear, the building reduces to four storeys along Millman Street and two storeys at the south-west corner of Millman Mews to minimise the impact on the residential buildings to the south of the site.



1813 plan showing site symmetry



Site plan showing proposed building alignments to generate building footprint

Building exterior: Design features

The building is being designed to ensure that it is sensitive to the site and local context and will be clad in high-quality materials, which are in keeping with the surrounding conservation area.

From Guilford Street, the identity of the building will be given a 'civic' public expression. Views into the building and the principal laboratory spaces will be created from the pavement.

The appearance of the building along Millman Street and Millman Mews will be more residential in nature than the front of the building, by using brickwork and smaller windows. The sketches below are indicative, illustrating massing and early design concepts.



View of the proposed building on Guilford Street, looking east



View on Guilford Street, looking west



View on Millman Street, looking north

Inside the building: key features



View along Guilford Street

Main entrance

Views from Guilford Street into the double height laboratory below are enhanced by large areas of glazing and a set-back ground floor façade, revealing the activities within the building.

The building entrance is conceived as a 'bridge' over the laboratory space, connecting Guilford Street with the foyer areas.



View of the main reception space

Interior

The bridge takes visitors into a light-filled atrium, which is the central 'heart' of the building. The interior is designed to maximise daylight access and views to the exterior.



View of the outpatients waiting area on the first floor

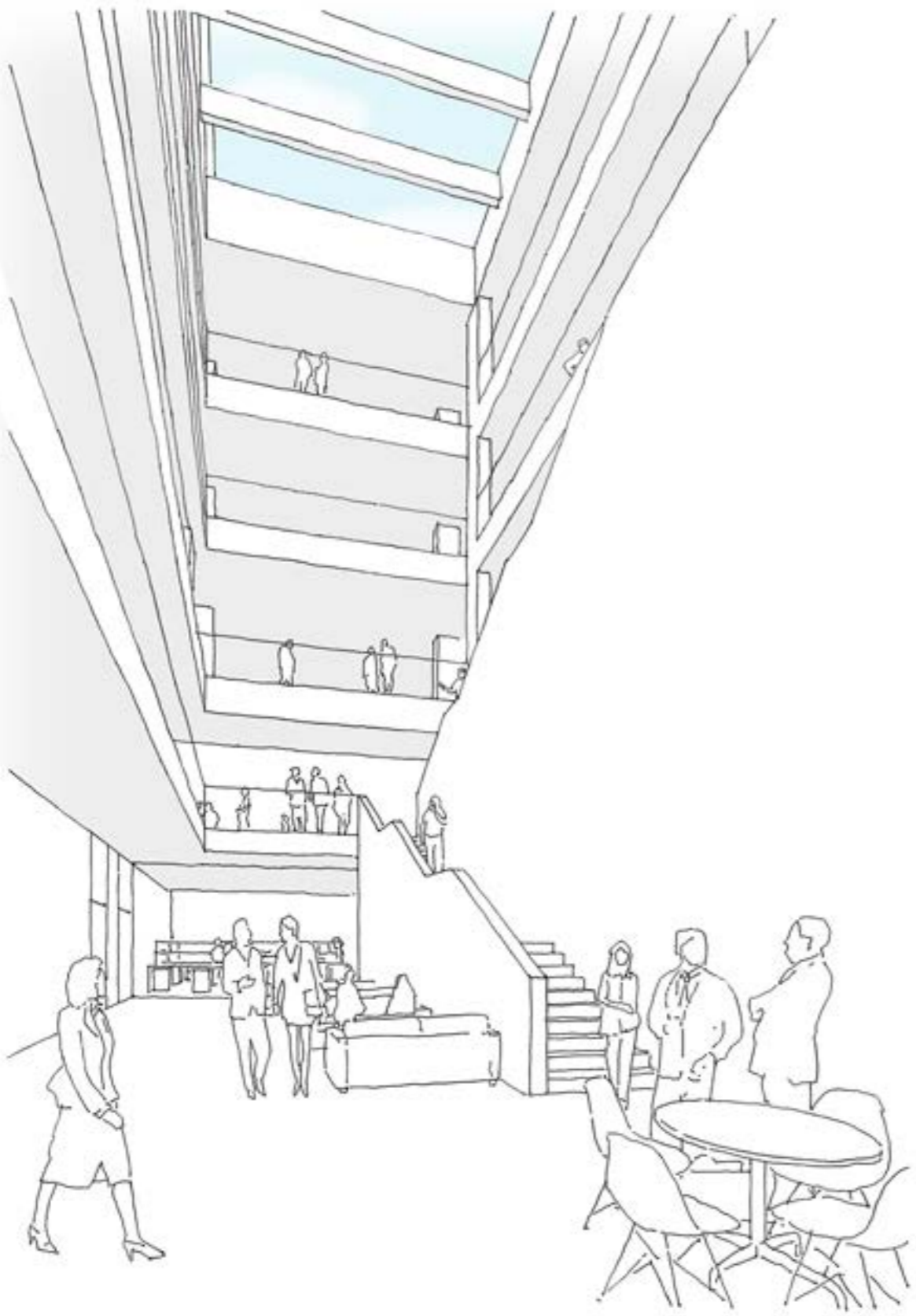
Outpatients

The outpatient space provides 24 consultation rooms, eight clinical investigation rooms and other facilities set over two floors.

The ground floor waiting room is set back from Guilford Street and this quiet, private space includes a small café and external terrace.

A two storey atrium will flood both outpatient floors with natural light and the generously proportioned upstairs waiting area offers views across Coram's Fields.

Laboratories and manufacturing facilities



View of the atrium space

The building will house two large laboratories on the lower ground floor, one of which will be visible from Guilford Street.

A Good Manufacturing Practice (GMP) facility on the fourth floor will include laboratories to manufacture specialist products for novel therapies (clinical trials and patient treatments).



View of the GMP Facility

Other high tech facilities and workspace will include tissue culture laboratories, a cardiology suite, a Flow Cytometry Suite facility (for counting, storing and analysis of cells with laser technology), freezers and liquid nitrogen stores.



The impact of the GMP Facility

The GMP will provide specially-equipped, licenced and inspected facilities so we can safely manufacture cell and gene therapies. So we could:

- Offer a replacement for children with absent or damaged tissues (such as windpipes, ears or noses) without heavily suppressing their immune system.
- Provide gene therapies that result in a permanent correction for children with genetic diseases who have limited or no other options for treatment.
- Develop these treatments at GOSH without relying on outside organisations or commercial companies.

Sustainability and the environment

The building has been designed to be as sustainable and efficient as possible.

Climate change is a significant threat to child health and Great Ormond Street Hospital is serious about creating sustainable buildings.

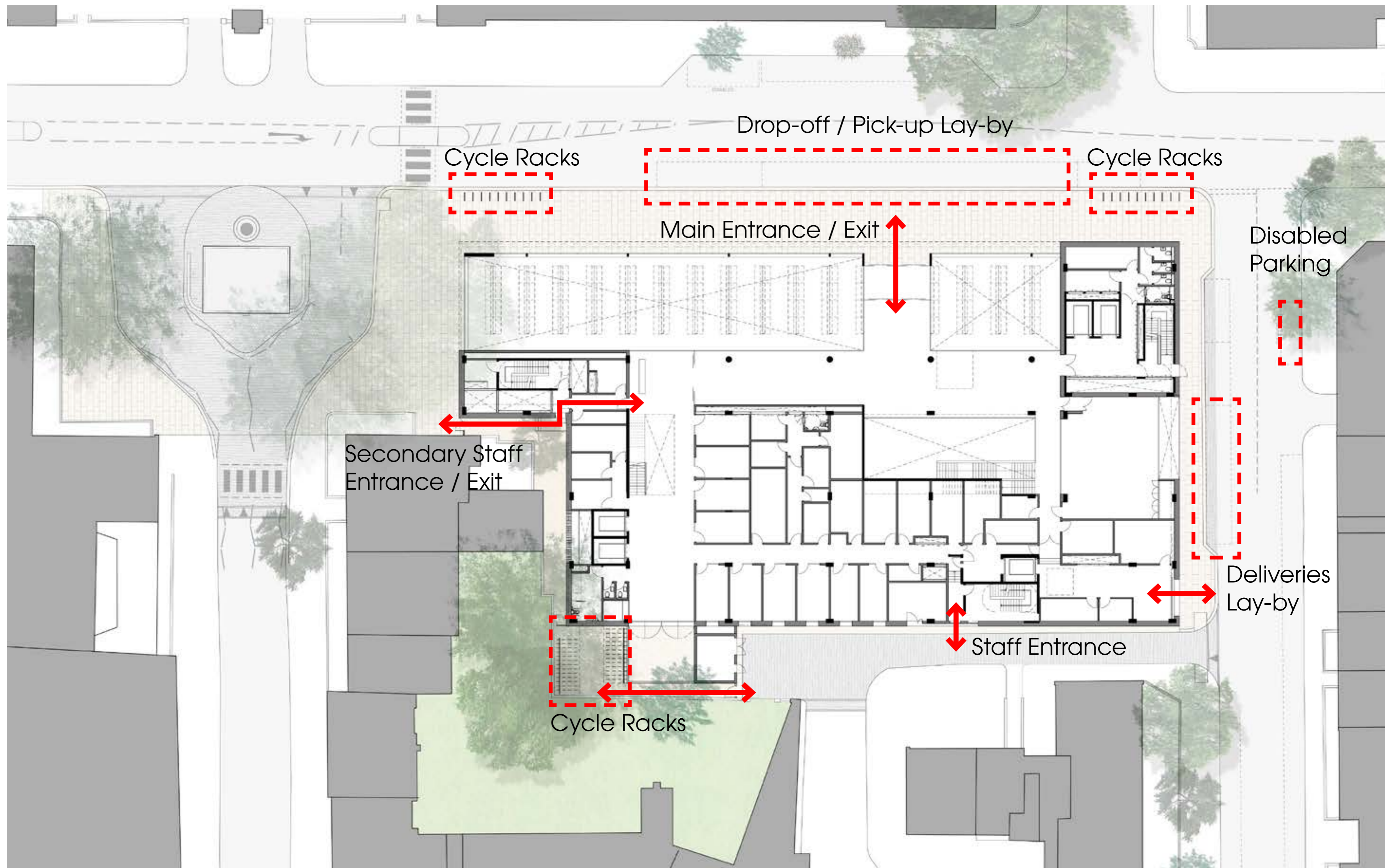
The building will achieve a BREEAM 'excellent' rating – placing it within the top 10 per cent of new-build non-domestic properties in the UK.

We propose the following sustainability and biodiversity measures:

- A high performance building 'envelope', which preserves heat and excludes damp.
- Low energy and motion-responsive lighting.
- Water conservation systems and rain water recycling.
- Responsibly sourced, sustainable and recycled construction materials.
- Combined heat and power (CHP), generating electricity while also using the waste heat from hot water and space heating purposes.
- Solar panels at roof level below the proposed parapet to supplement electrical energy requirements.
- The Design team will be working with an ecologist to ensure that the building enhances the ecological value of the site, including local plant, insect and animal life.
- A green roof is also proposed to enhance ecological value and biodiversity.



Servicing the building



Proposed building entrances and vehicle servicing

Discussions with the local authority on servicing are ongoing and the key features of the current strategy are outlined below.

Main entrance

The main entrance to the building would be on Guilford Street. We anticipate the majority of visitors would access the building on foot, but have made provision for a drop-off and pick-up lay-by on Guilford Street for those who need access to a car or ambulance.

Managing deliveries

We have looked carefully at the available access points and analysed traffic and pedestrian movements to identify our preferred solution for deliveries and service vehicles. Paving over the lightwells on the north, east and west of the existing

building will increase the amount of space around the new building at ground level that is available for public use. This offers us an opportunity to create a delivery lay-by which is slightly set back from the carriageway.

We are looking at how to use existing service yards to consolidate deliveries and minimise any changes to the pattern of traffic use around the site. We anticipate an average of 15 vehicles would use the Millman Street delivery lay-by each day.

Facilities for cyclists

A bicycle storage area will be provided at the west end of Millman Mews, providing 52 spaces arranged in a two-tier rack. Cycle racks may also be installed

outside the front of the building on Guilford Street for general public use.

Disabled parking spaces

We are proposing that six parking bays should be designated for disabled users – one on Millman Street, one on Guilford Street and four within the drop-off area on Guilford Street, which accommodates five to six vehicles in total.

Car parking spaces

When our servicing strategy is finalised we will prepare recommendations for the local authority on any changes to restrictions on parking in adjacent roads. We do not expect to be recommending any changes to the number of resident's parking spaces.

Public spaces around the building

Redeveloping the site will improve and revitalise the immediate area by replacing a vacant 1960s office block with a high-quality building appropriately designed for its context by award-winning architects.

The redevelopment will involve paving over of the lightwells on the north, east and west of the existing building and re-paving these footpaths in a suitable high-quality material. This will increase the amount of space around the new building at ground level that is available for public use and improve the appearance of the streetscape.

We intend to improve the junction layout between Millman Street and Millman Mews and also enhance the road surface of Millman Mews at the rear of the new building.

Maintenance of trees adjacent to the building

We want to factor the maintenance of nearby healthy and viable trees into our development plans and have taken advice from a leading arboriculturalist in developing a pruning and management plan, which includes:

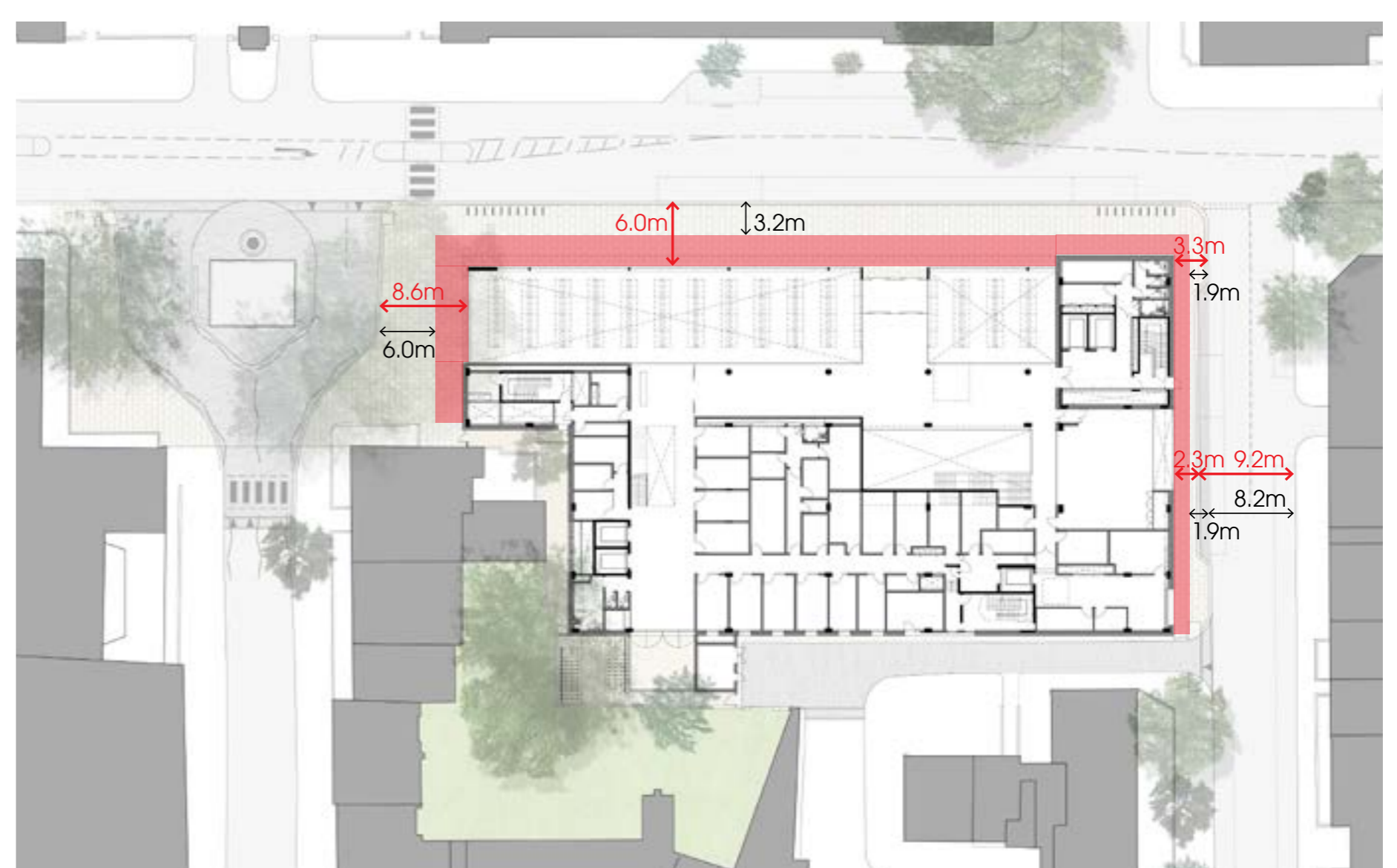
- pruning two London Plane Trees on Guilford Place and maintaining them on an ongoing basis to encourage even regrowth
- pruning a Tree of Heaven within the boundary line of a neighbouring property at the rear if the site to achieve a 2m clearance from the building
- pruning a Cotoneaster off-site at the back of the building
- removing a smaller Tree of Heaven which is growing out of tarmac on-site



Context plan



Planned improvements to pavements surrounding the site



Dimensions indicating the current (black) and proposed (red) pavement widths

Now have your say

We want to hear what you think about our ideas so far, and would be grateful if you could take a couple of minutes to fill out a feedback form before you leave.

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