

INDUSTRY DAY

London Institute of Medical Sciences (LMS)

Susan Simon

MRC Director Capital and Estates

Medical Research Council

19.04.2018



Welcome and Introductions

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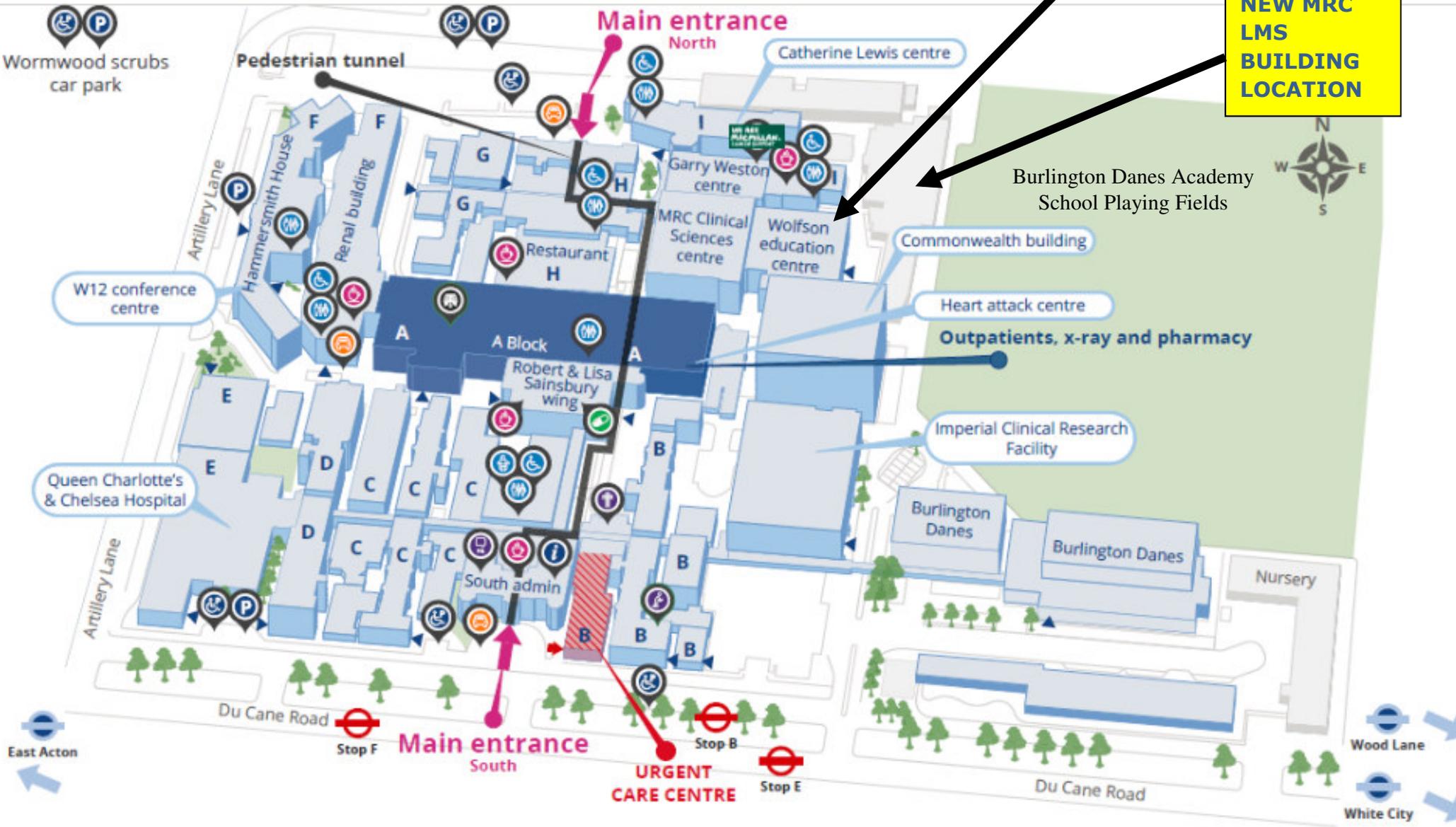
Agenda

Item	Description	Speaker	From	To
1.	Welcome and Introductions - Generic Organisational Aspects, Project Need – Mission Statement	Susan Simon (MRC)	2:00pm	2:15pm
2.	The Project Team, The Site, Requirements	Bryan Little (MRC)	2:15pm	2:30pm
3.	Requirements for Procurement	Nick Hannett (Turner & Townsend Cost Management)	2:30pm	2:45pm
4.	Current Progress	David Mellon (Turner & Townsend Project Management)	2:45pm	3:00pm
5.	Architectural Design	Carol Lees & Ben Porter (Hawkins Brown Architects)	3:00pm	3:15pm
6	Engineering Services Design	Richard Walder (Buro Happold)	3:15pm	3:30pm
7.	Question and Answer Session		3:30pm	4:00pm
8.	Close		4.00pm	

Hammersmith Hospital Campus

YOU ARE HERE IN THE WOLFSON EDUCATION CENTRE

NEW MRC LMS BUILDING LOCATION



Generic Organisational Aspects

- There are no planned fire alarm tests today, so any alarm sounding will require you to leave the building. Please follow the emergency exit signs to ground level and wait at the allocated space outside.
- You have been issued with an MRC guest pass at reception. Please wear this at all times during your visit and ensure it is clearly visible.
- Please do not access any areas unaccompanied.
- Please ensure that you have registered as an attendee in the attendance list (by the door).

Rules of Engagement

- Aims to present and explain the new MRC LMS Building Project, including scope and other relevant aspects.
- Questions to the presenters, please only at the Q&A session.
- Please state your name and your organisation before asking the question.

PROJECT NEED

Susan Simon

MRC Director Capital & Estates

Medical Research Council

19.04.2018

MRC Mission Statement



-
- Encourage and support high-quality research with the aim of improving human health
 - Produce skilled researchers; advance and disseminate knowledge and technology to improve the quality of life and economic competitiveness in the UK
 - Promote dialogue with the public about medical research

London Institute of Medical Sciences (LMS)

Mission Statement

The LMS aims to be at the forefront of innovative biomedical research and in partnership with Imperial College London and others, to promote the translation of its research for maximal benefit.

The institute trains and mentors the next generation of clinical and non-clinical scientists and strives to enhance the public's interest, understanding and trust in science.



Director:
**Dame Prof. Amanda
Fisher**

MRC LMS and Imperial College London

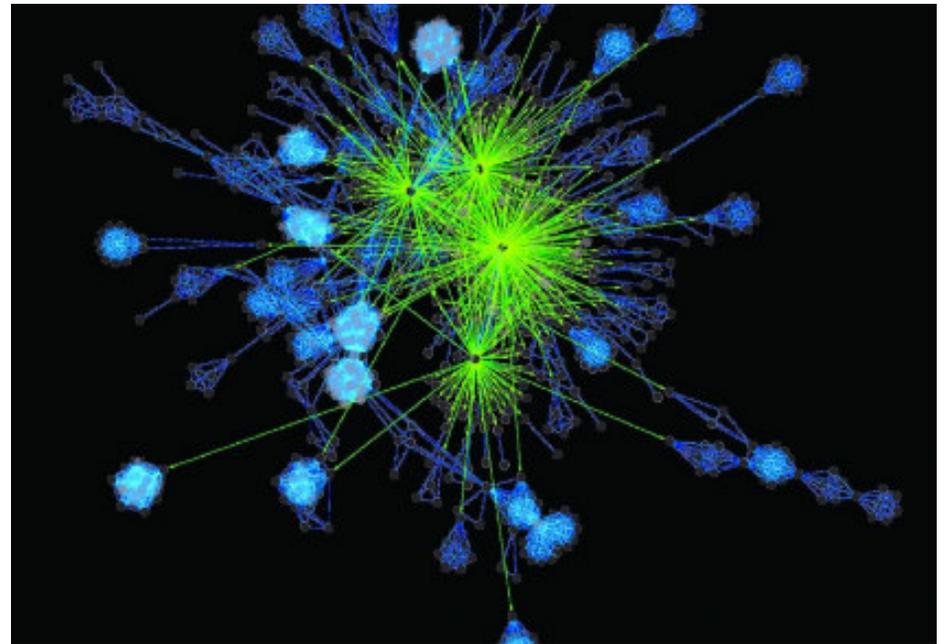
- ❑ The MRC LMS is a MRC Institute and forms part of the Institute of Clinical Science at the Imperial College London Faculty of Medicine
- ❑ Close collaborations between researchers in both MRC LMS and ICL important part of the link provided by the Institute between fundamental research and clinical application
- ❑ Co-location of researchers in current and future facility
- ❑ Co-funding of the project between MRC and ICL



MRC LMS Research

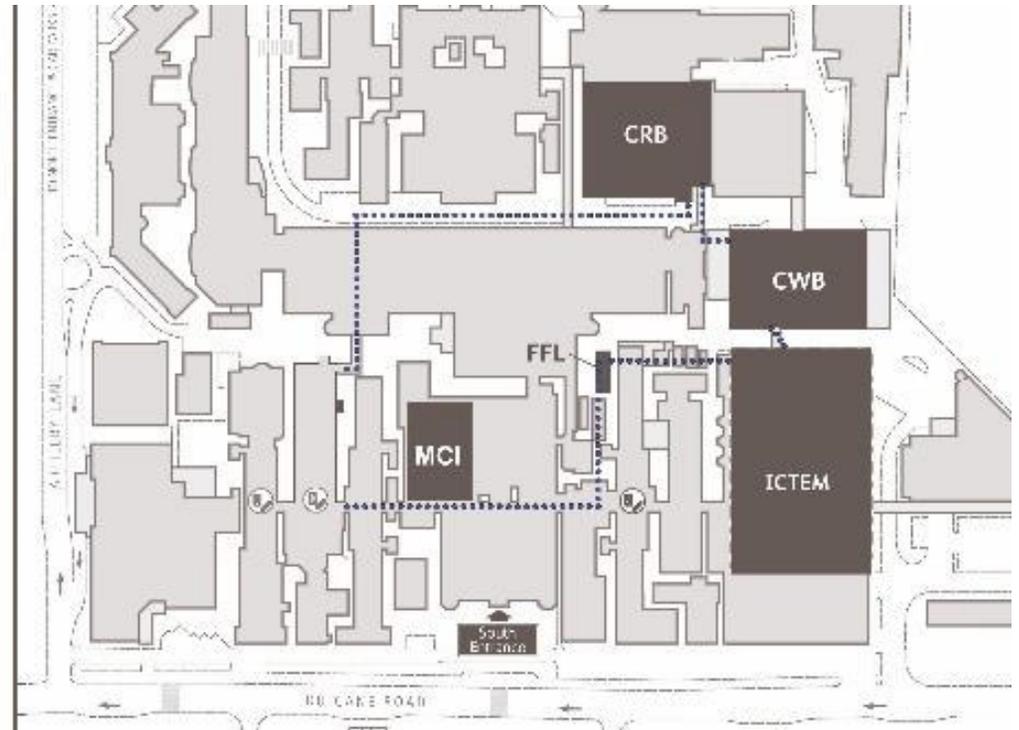
Three key areas:

- ❑ EPIGENETICS
- ❑ GENES & METABOLISM
- ❑ INTEGRATIVE BIOLOGY



Current Facilities at Hammersmith

- ❑ Institute currently located in four different locations across the Hammersmith Hospital Campus
- ❑ Existing facilities are aged and do not provide an appropriate environment for housing high-tech equipment, such as Cryo-EM, super resolution microscopes, etc.
- ❑ CBS facilities have not got sufficient capacity for in-vivo work (research through whole life –cycle



Importance

- ❑ MRC LMS is one of three MRC Institutes and the only one, which provides a tangible link between fundamental and translational/ clinical research (“bench to bed”)
- ❑ Most of the research undertaken by the Institute addresses important areas in public health, such as obesity, cancers, cardiovascular issues
- ❑ There is a surge in new, exciting technology becoming available, which revolutionises research, but the Institute needs facilities, which will be able to house such technology
- ❑ **RECRUITMENT** – the new facility is critical to ensure the best scientists are recruited to the Institute. There are currently problems with that due to the quality of the current research facilities

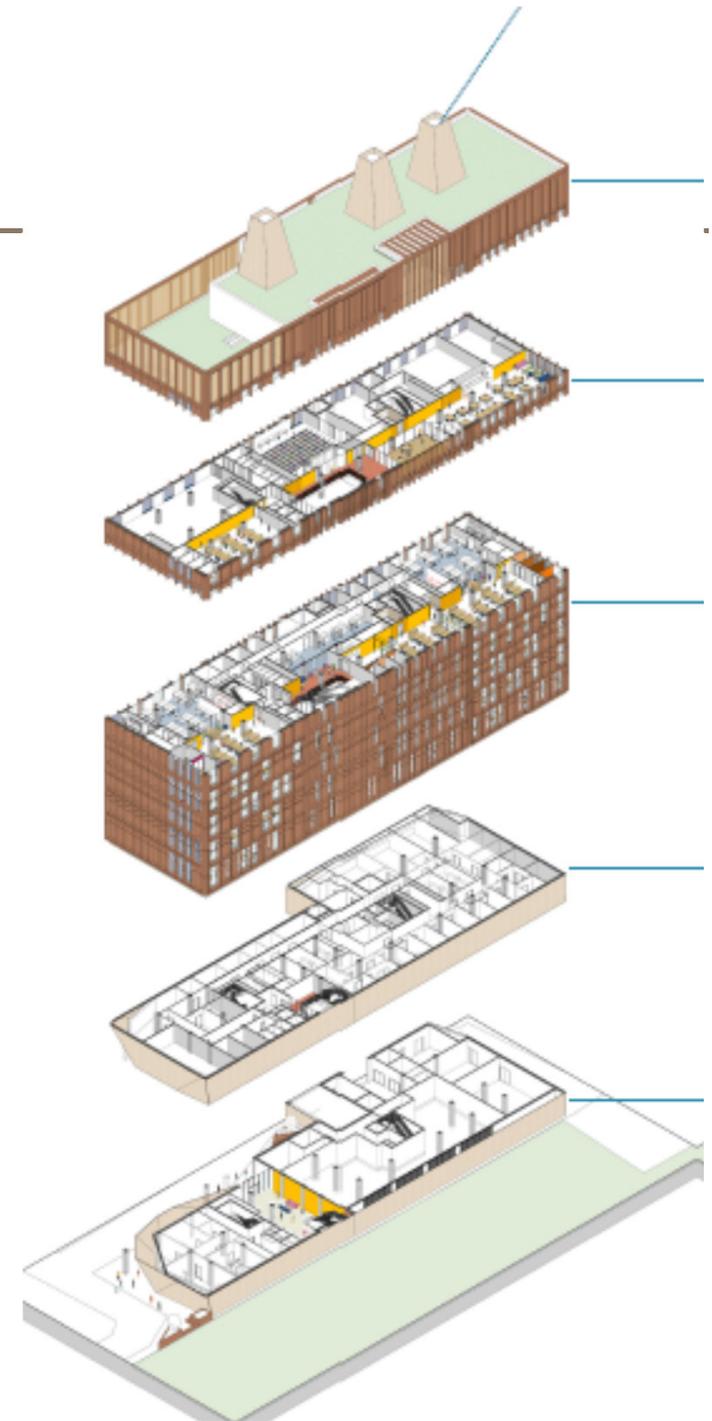
LMS Building Project - Opportunity

- ❑ Empty site at the Hammersmith Hospital Campus
- ❑ Funding from the government (£50m) and Imperial College London (£25m) for the entire project (incl. fees, contingency, enabling, etc.)



Key Requirements

- ❑ Space for minimum 30 research groups providing primary, secondary laboratory space and write up areas
- ❑ CBS area for in-vivo imaging and other whole life cycle procedures
- ❑ Imaging suite providing flexible facilities for high-tech imaging equipment, such as Cryo-EM, super resolution Imaging Microscopes, etc.
- ❑ Seminar room and social area (café / breakout space)
- ❑ Associated support areas



PROJECT TEAM, PROJECT SITE & REQUIREMENTS

Bryan Little

MRC Project Manager

Medical Research Council

19.04.2018

The Project Team

The Client:



The Users:



London Institute of Medical Science



Faculty of Medicine

Procurement:



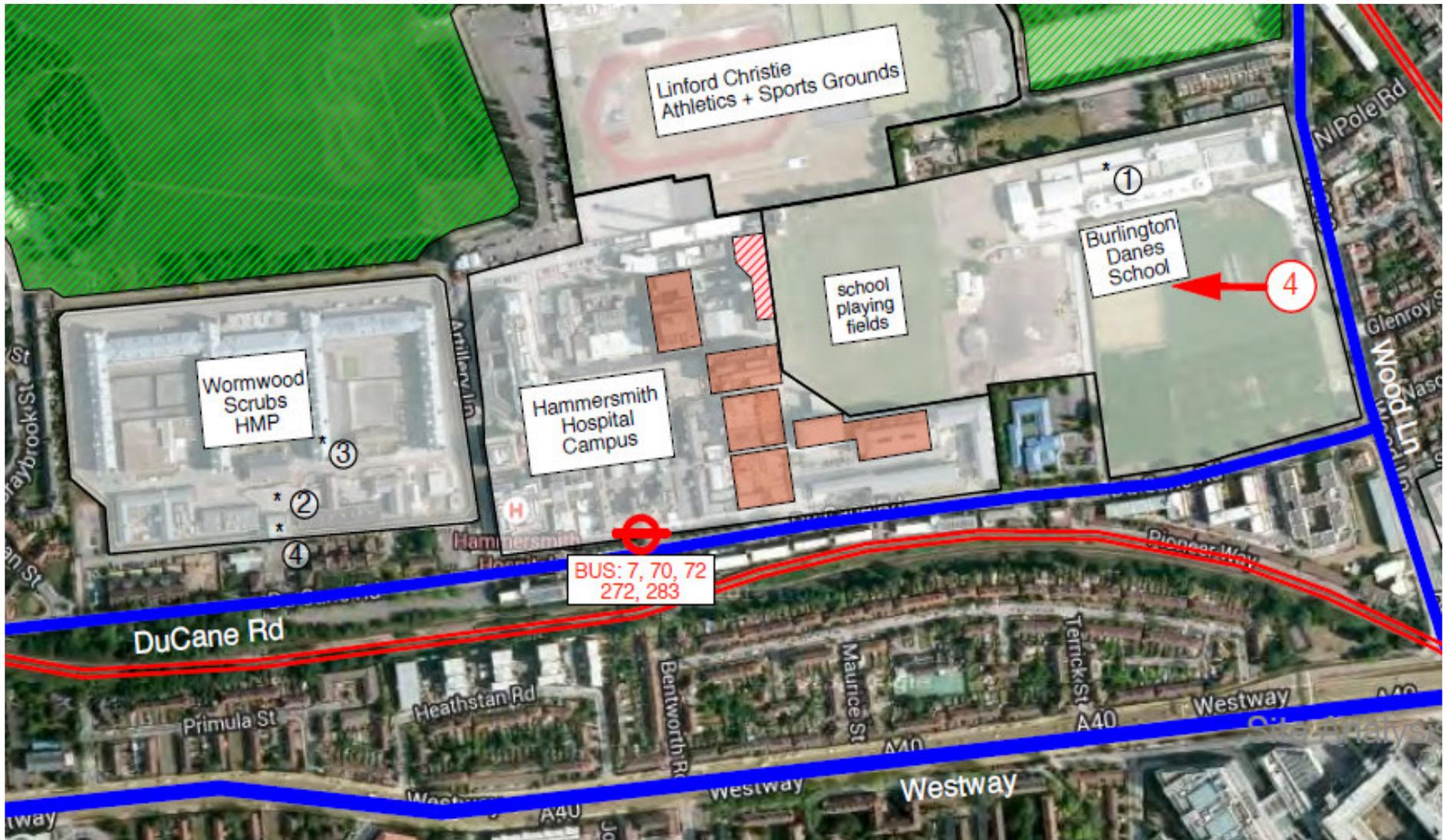
Project Manager & Cost Manager:



Project Team:



The Site



The Site



The Site

- ❑ Previously occupied by the Cyclotron Building
- ❑ Was built between 1952 and 1955 to house a Cyclotron for medical research purposes
- ❑ Until 2012, fully occupied and continuously working with radionuclides for diagnosis and treatment of a range of diseases
- ❑ Demolished in 2014 in preparation for this project



Short Description of Requirements

What the building will contain:

- ❑ Animal holding facility with large amount of procedure rooms and including in-vivo imaging
- ❑ High-tech imaging facility (including Cryo EM and Super-resolution imaging microscopes [in vitro])
- ❑ Support facilities (for example: substation for incoming power, freezer storage, glass wash stores, etc.)
- ❑ Generic research laboratories (wet lab, dry lab, tech hubs and write up areas)
- ❑ Social areas (120 person seminar room, meeting and break out areas, café and terrace)

Short Description of Requirements

Breakdown of areas (from RIBA Stage 2 summary report)

Primary Laboratories	1044	2443m ²
Shared Secondary Laboratories	954	
Direct Secondary Laboratories	445	
Cellular Office	205	1903m ²
Shared Office	1698	
Meeting Space	335	880m ²
Collaboration Space	224	
Social Space	321	
Other - Specialist	916	916m ²
Circulation	2129	6043m ²
Balance	423	
Plant (Inclu. roof plant)	2815	
Engineering	676	

Total Area (GIA) = 12,185 sqm
(including external plant & existing substation)

Short Description of Requirements

Technical Aspects

The building will contain two areas, which are highly serviced (M&E) and require complex technical solutions to work as required:

- Animal Holding and procedure rooms
- Imaging Facilities

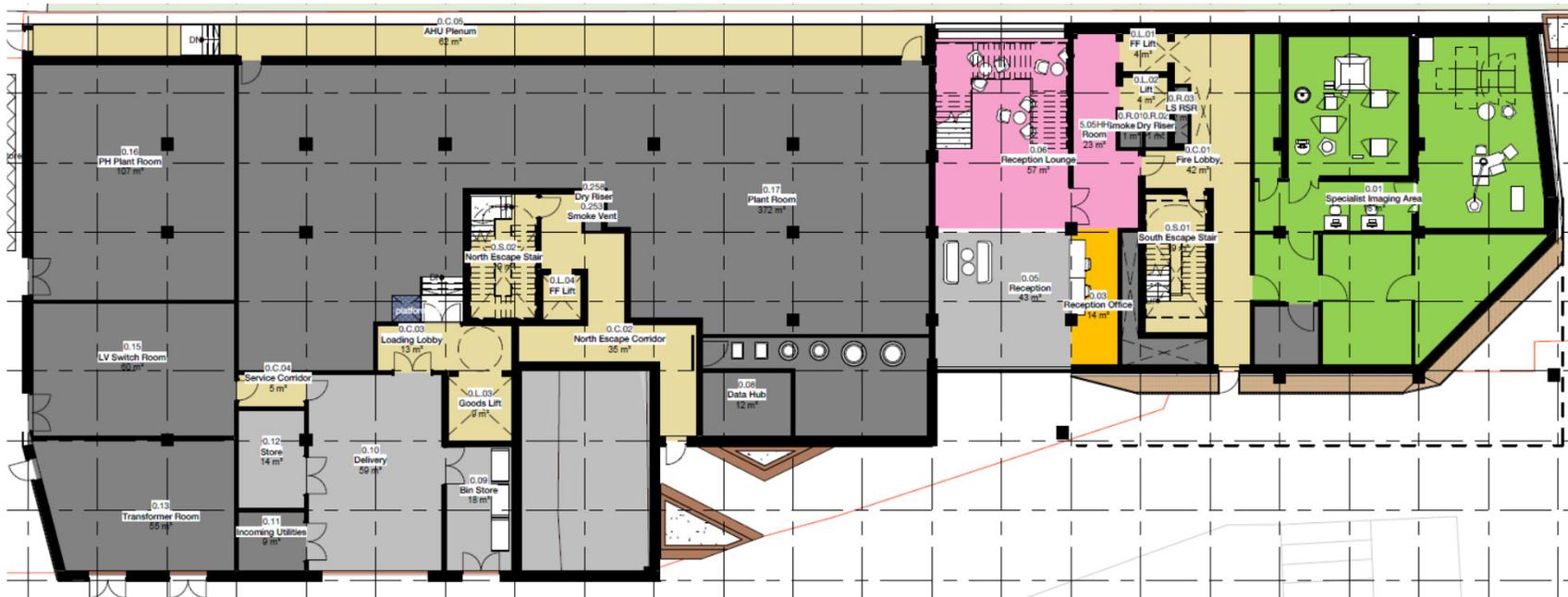


Short Description of Requirements

Technical Aspects

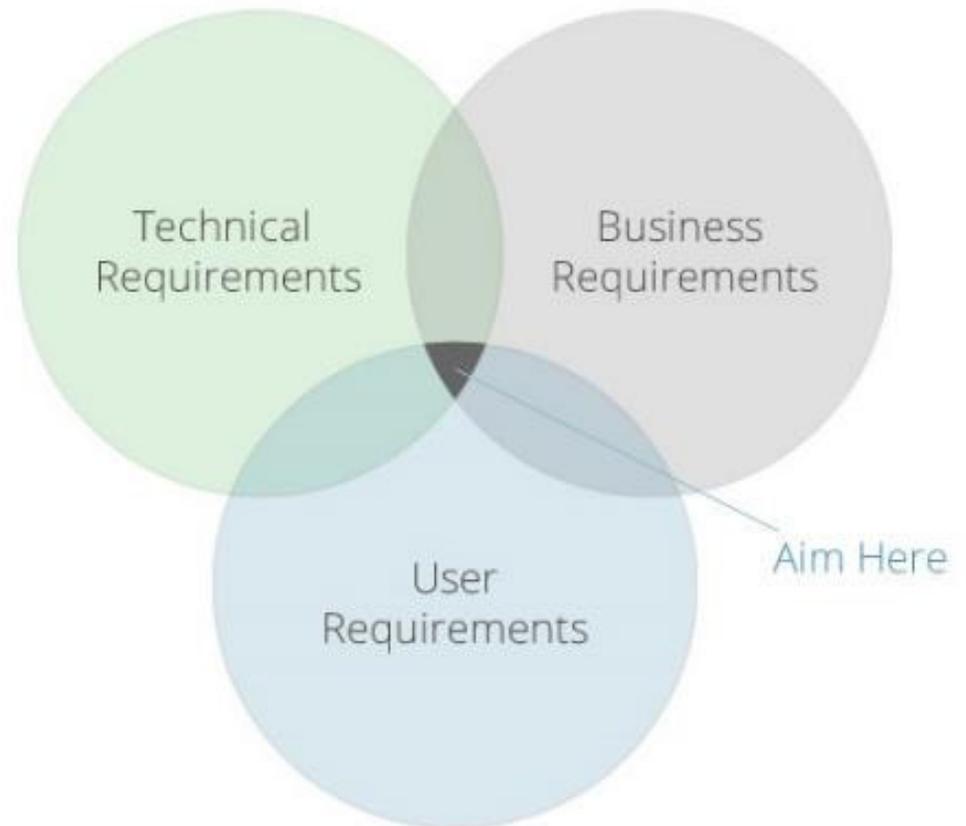
□ Imaging Facilities

The remainder of the building is largely typical for laboratory and research facilities.



Requirements

- ❑ Key design criteria
- ❑ Technical requirements
- ❑ Spatial efficiency
- ❑ Adaptability and flexibility
- ❑ Designing to Cost
- ❑ VFM decisions



REQUIREMENTS FOR PROCUREMENT

Nick Hannett

Associate Director

Turner & Townsend Cost Management Ltd

19.04.2018

Procurement Timetable



- ❑ 2-stage Design & Build, based on a RIBA Stage 3 Developed Design
- ❑ Construction cost of contract (excluding VAT): **£50m**

Outline Dates:

- ❑ PIN Notice: **06 April 2018**
- ❑ Industry Day: **19 April 2018**
- ❑ RFI (Request for Information) issue date **18 May 2018**
- ❑ RFI submission date: **22 June 2018**
- ❑ Notification of RFQ shortlist : **13 July 2018**
- ❑ RFQ (Request for Quotation) issue date : **06 August 2018**
- ❑ RFQ submission date : **7 September 2018**
- ❑ Post tender interviews (TBC) : **1-12 October 2018**
- ❑ Award of contract (PCSA): **01 November 2018**
- ❑ Main contract execution : **1 April 2019 (4 month PCSA assuming 1 month sign off)**
- ❑ Construction starts: **30 April 2019**

2-Stage Tender Approach



UKSBS to manage and administer tender process.

RFI (Request for Information)

- Assessment on the basis of Selection Questionnaire
- Clarity on evaluation criteria

Stage 1 Tender (RFQ)

- Competitive tender (minimum 5)
- Evaluation on technical and commercial criteria
- Commercial criteria to include preliminaries (staff & logistics), contractor design, OH&P and Risk
- Potential requirement to name and price the same for proposed M&E subcontractor
- At end of Stage 1 tender, one contractor appointed under a PCSA agreement to develop fixed price for agreement with Client at the end of stage 2

2-Stage Tender Approach

Scope of Contractor during Stage 2 (under PCSA Agreement):

- ❑ Upon appointment, validation of the RIBA Stage 3 Developed Design.
- ❑ Collaborative contribution to the RIBA Stage 4 Technical Design, specifically on aspects of buildability, Whole Life Cost, Risk Management, Site Logistics, Mechanical & Electrical Engineering, Curtain Walling and package procurement.
- ❑ Pricing of the RIBA Stage 4 Technical Design to provide 100% cost certainty

Other points to note

- ❑ The Design Team will not be novated. They will remain under direct control of the Client throughout the project.
- ❑ PCSA deliverables will be clear. If the Contractor is not adhering to these, not working collaboratively, or provides an unacceptable price at the end of Stage 2, the MRC will be under no obligation to proceed with that Contractor
- ❑ Open book pricing during the Second Stage
- ❑ NEC3 Form of Contract to be used.

Procurement Objectives



- ❑ Emphasis on quality, value for money, budgetary control and risk reduction.
- ❑ Achievement of 100% cost certainty prior to contract
- ❑ Pro-active Contractor involvement to gain benefits of buildability & detailing, value engineering, robust and progressive pricing and management of commercial and construction risks.
- ❑ Contractor to own, manage and undertake the commissioning of the building so that all aspects of the building are fully operational at handover.
- ❑ A single point of responsibility for design completion, construction, commissioning and hand-over.
- ❑ Clarity on requirements with which Tenderers must comply and the basis on which the Tenders will be evaluated.
- ❑ To maintain a fair and open competition throughout.

CURRENT PROGRESS

David Mellon

Associate Director

Turner & Townsend Project Management Ltd

19.04.2018

Current Progress

- ❑ **RIBA Stage 2** (Concept Design) completed in February 2018 and approved by the Project Board.
- ❑ **RIBA Stage 3** (Developed Design) in progress and is expected to be completed in July 2018.
- ❑ **Planning Advisor:** Land Use Consultant (LUC)
- ❑ **Building Regulations Approved Inspector:** Mr Andy Lowe of Bureau Veritas
- ❑ **Transport Consultant:** TTP Consulting: Transport Statement, Framework Delivery & Servicing Plan, Construction Management Plan and Construction Logistics Plan.
- ❑ **Planning Approval:** Pre-app made to London Borough of Hammersmith & Fulham (LBH&F) in December 2017. The project has been well received and discussions are ongoing. Greater London Authority and TfL have also been consulted, with both being very positive about this project. Design Review Panel meeting being scheduled with LBH&F, prior to making the Full Planning Application.
- ❑ **Existing Sub-station:** ICHT will remove their existing sub-station from the plot in Q1 2019.
- ❑ **New Power Supply:**
 - ❖ UKPN quote for new 2MVA electrical supply received and order to be placed by MRC.
 - ❖ Connection will be taken from new UKPN sub-station situated under the A40 flyover.
 - ❖ Power On date for that new sub-station is Q3 2020.

Programme Milestones



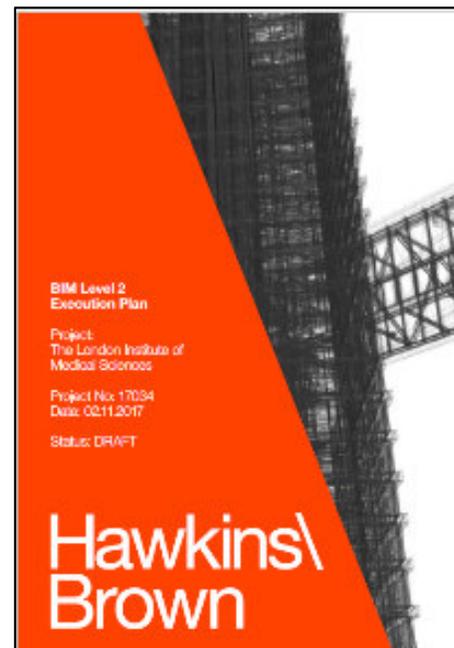
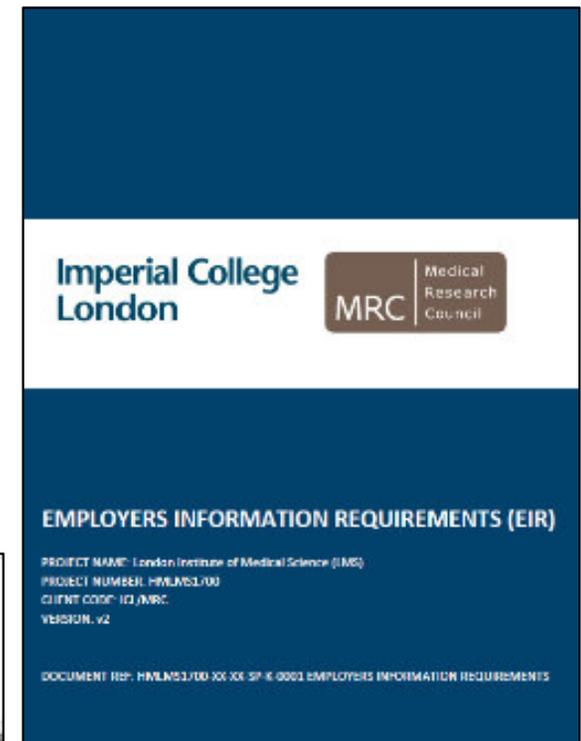
Turner & Townsend

Task / Milestone	Start	End
Construction	April 2019	April 2021
Black Building Test, IST and Validation	April 2021	June 2021
Soft Landing Period	June 2021	July 2021
Proving Period and Transition into new LMS Facility	July 2021	September 2021
LMS Live in New Facility	September 2021	September 2021

BIM Level 2



- ❑ BIM Level 2 in accordance with the UK Government's 2016 requirements
- ❑ Employers Information Requirements (EIR) prepared by MRC and ICL
- ❑ Hawkins Brown BIM Execution Plan (BEP)
- ❑ Specific workflows and activities at every work stage



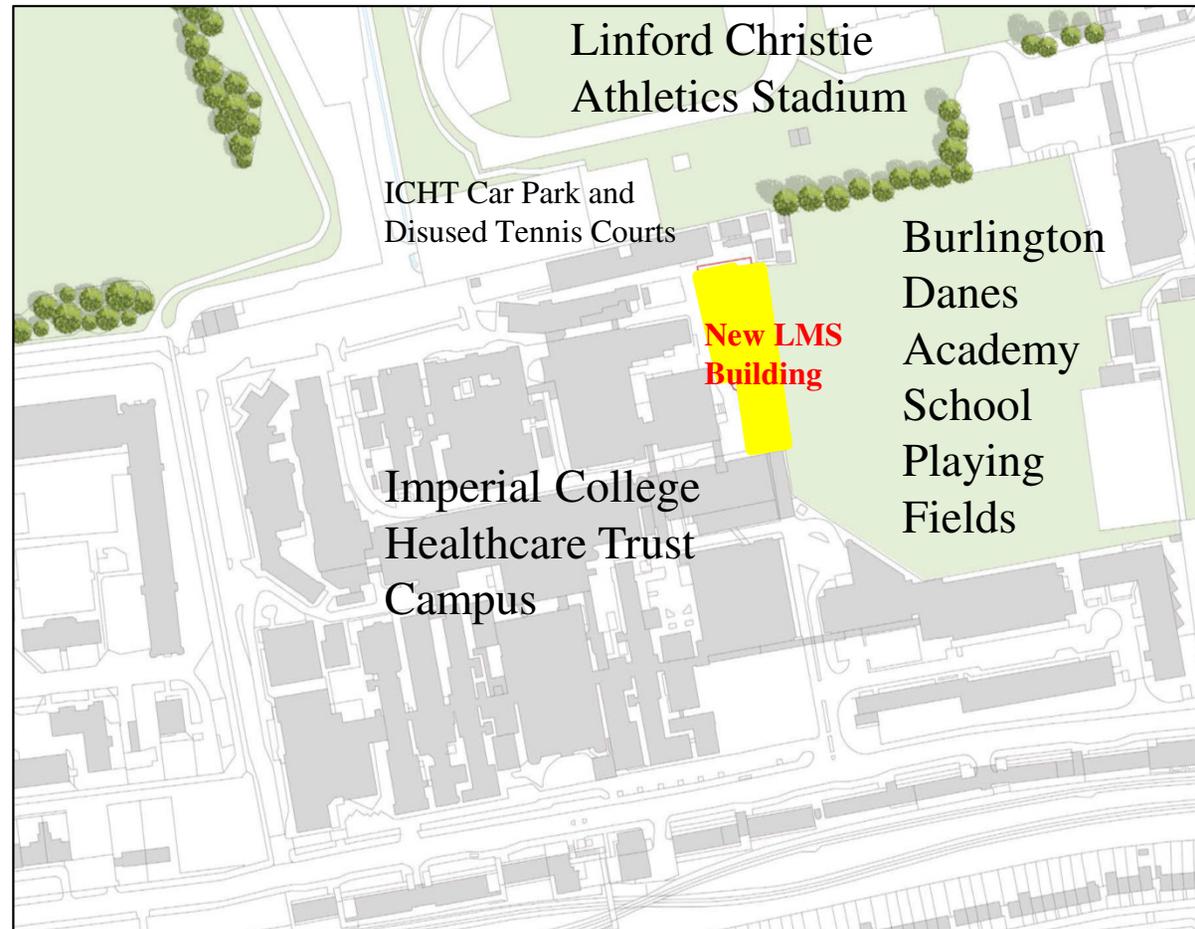
Design Completeness and Co-ordination

- ❑ Effective interaction and communication from all parties
- ❑ Project controls at each RIBA stage of delivery
- ❑ Design risk management and mitigation
- ❑ Information management



Site Logistics

- ❑ No direct access to the site from public roads
- ❑ Surrounded by the ICHT hospital campus, adjacent Burlington Danes Academy school playing fields and the Linford Christie Athletics Stadium
- ❑ Positive meetings have been taking place with ICHT, Burlington Danes Academy School, Linford Christie Athletics Stadium and the Local Planning Authority (LBH&F).
- ❑ TTP Consulting are to develop the Transport Statement, Framework Delivery & Servicing Plan, Construction Management Plan and Construction Logistics Plan – for submission to LBH&F as part of the Planning Application.



ARCHITECTURAL DESIGN

Carol Lees and Ben Porter

Hawkins Brown Architects

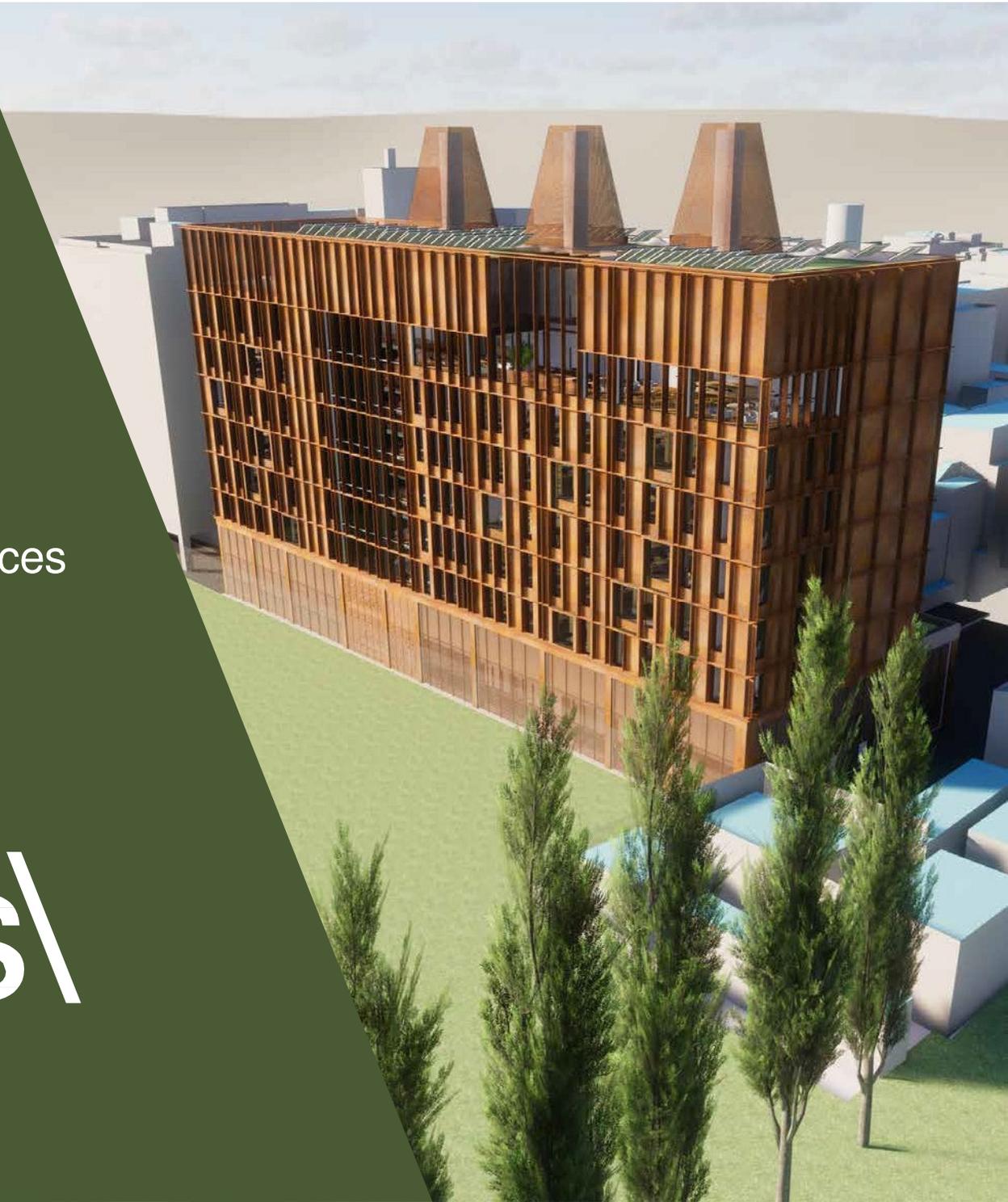
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**Industry Day Architectural
Design**

London Institute of Medical Sciences
Medical Research Council

19.04.2018

Hawkins
Brown



The Site



The Site



View of the Site from CRB Cafe



Site from North End



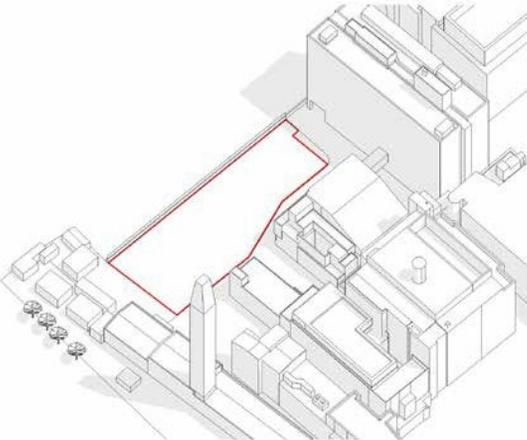
Relationship Between Wolfson & Site



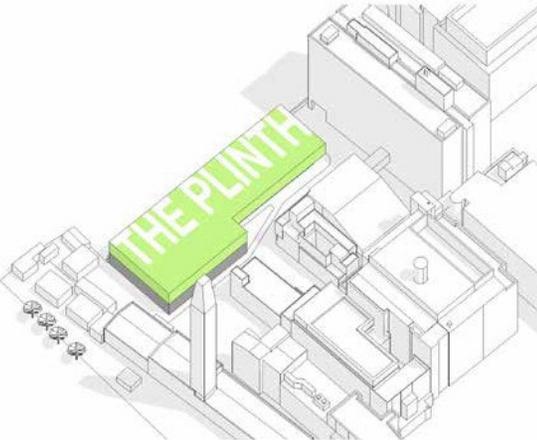
Southern Corner of the Site from CWB Underpass

Building Proposal

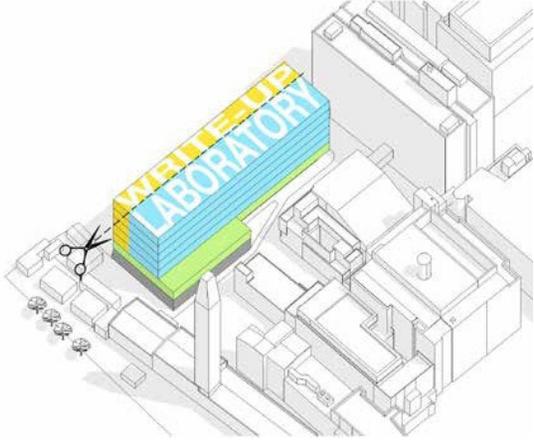
The Building Diagram



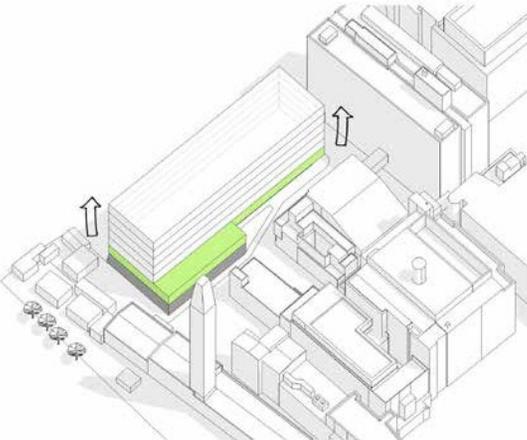
Site Boundary



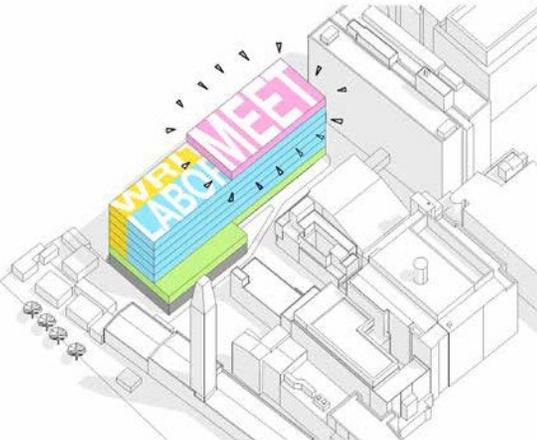
Functional Plinth



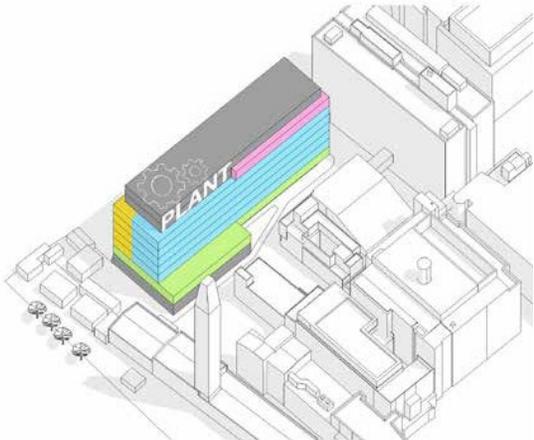
Programme Divide



5x Typical Research Floors



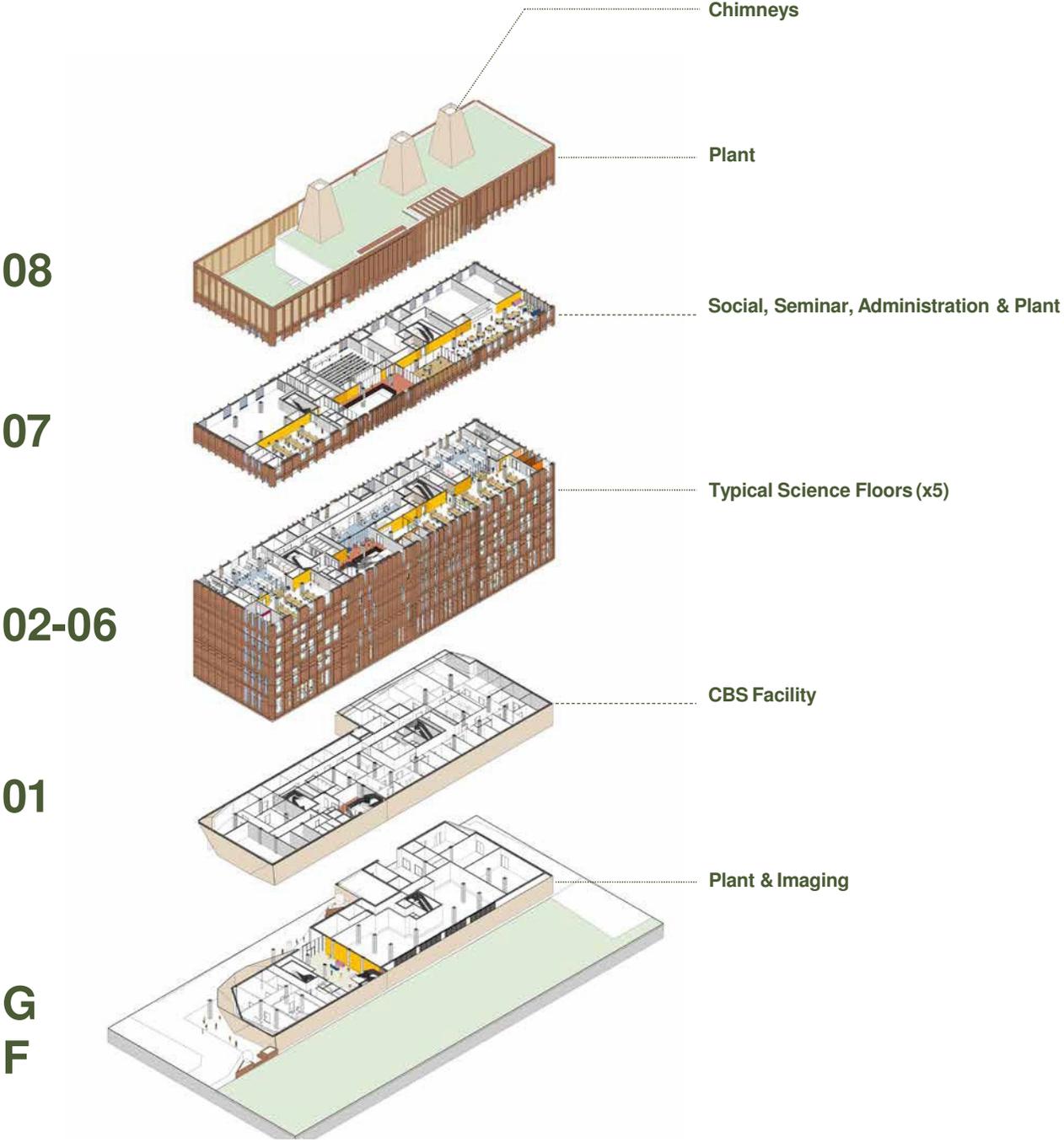
Top Floor Social



Roof Plant

Building Proposal

Building Arrangement



Building Proposal

The External Envelope



Building Identity

External Envelope



Building Identity

External Envelope



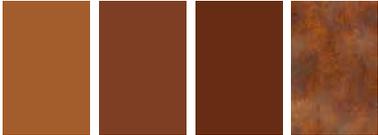
Building Identity

External Envelope



Building Identity

External Materiality



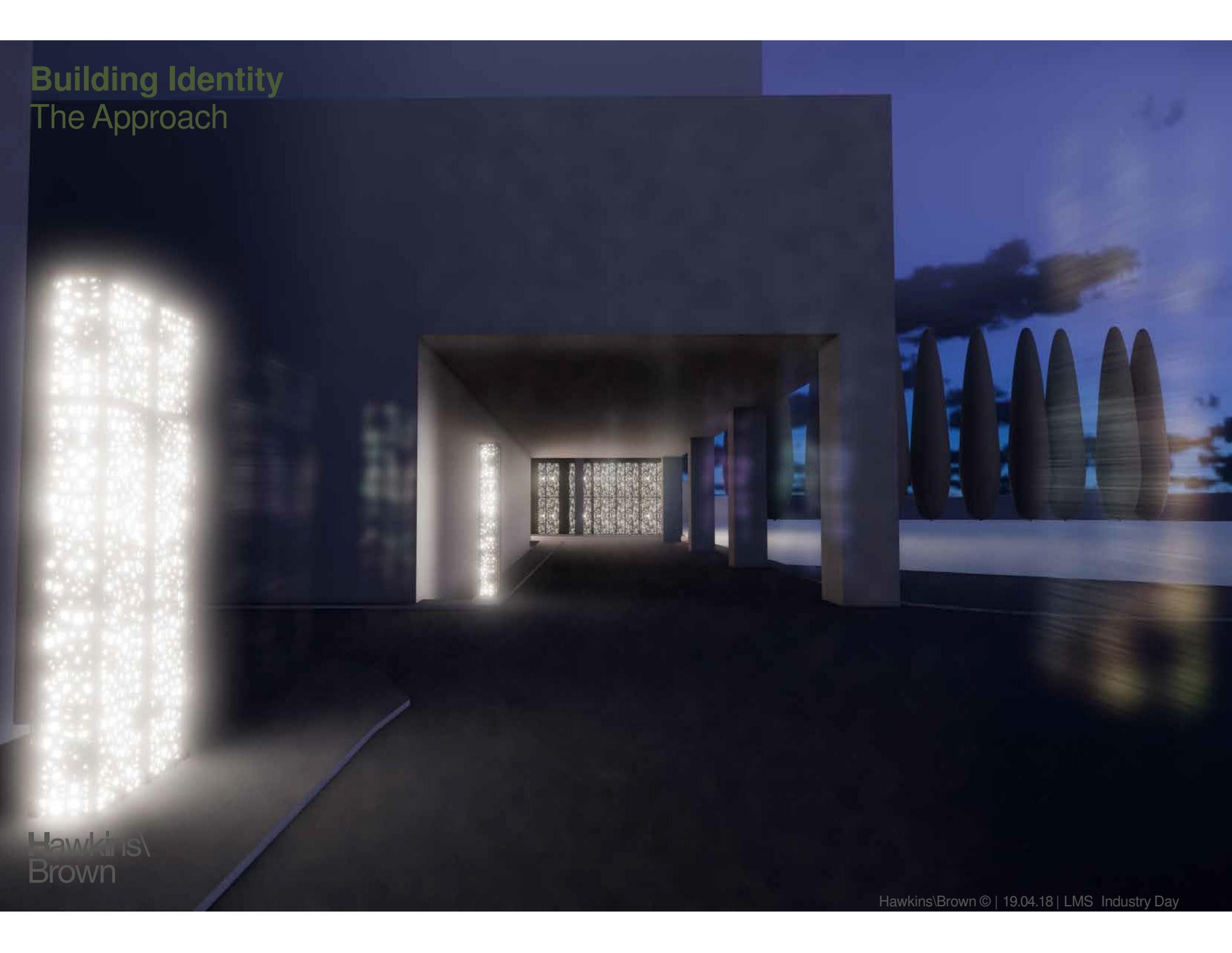
Building Identity

The Approach



Building Identity

The Approach



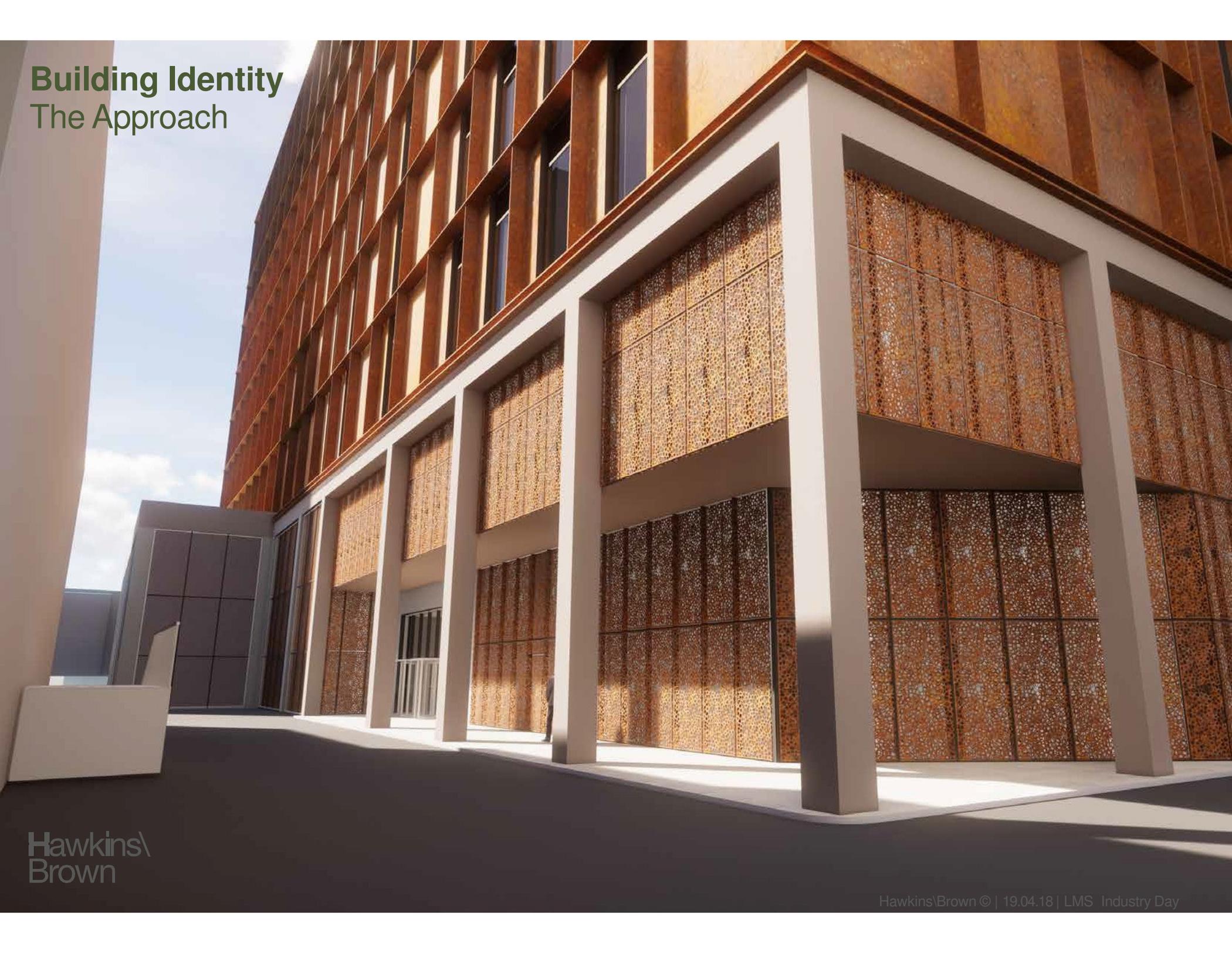
Building Identity

The Approach



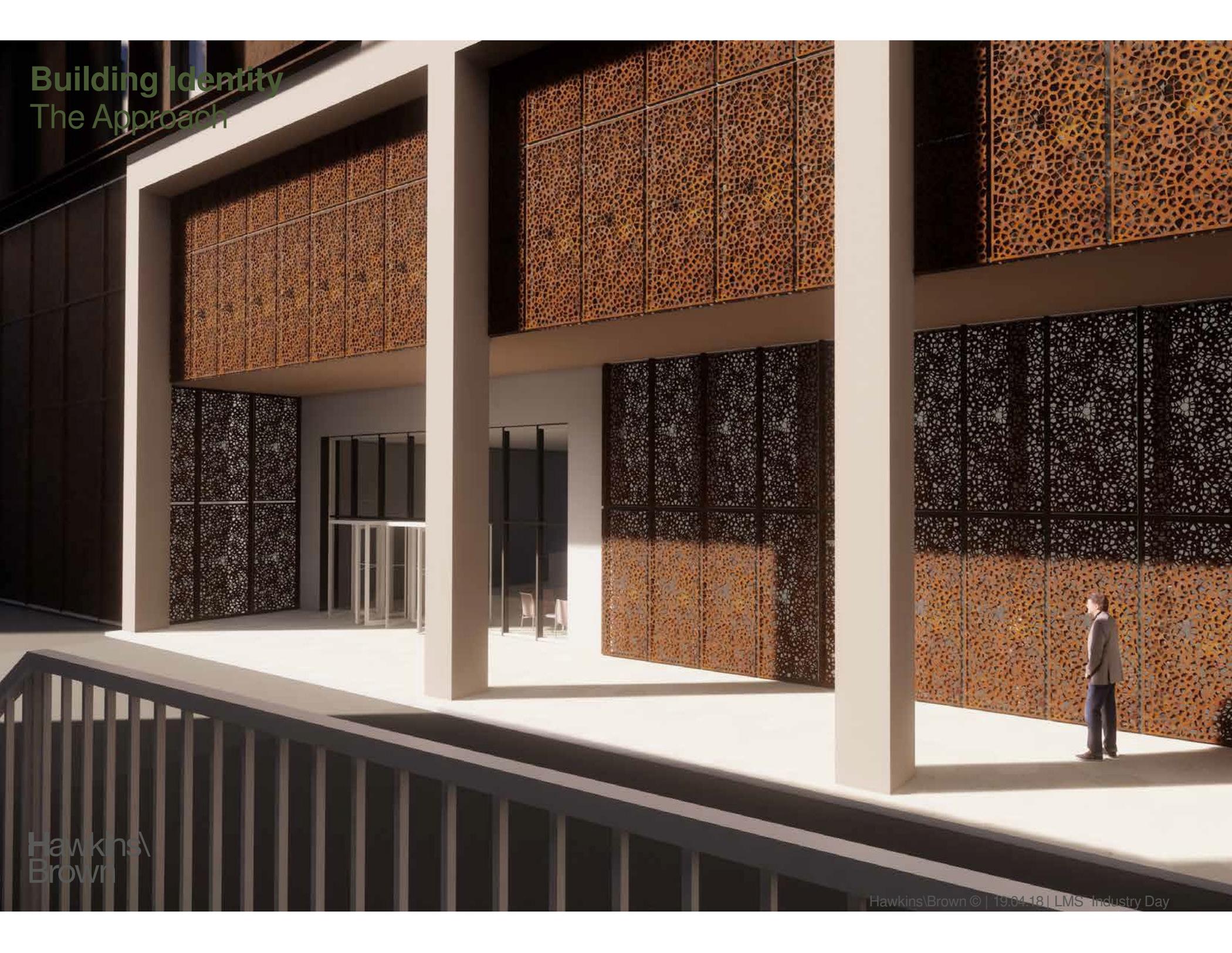
Building Identity

The Approach



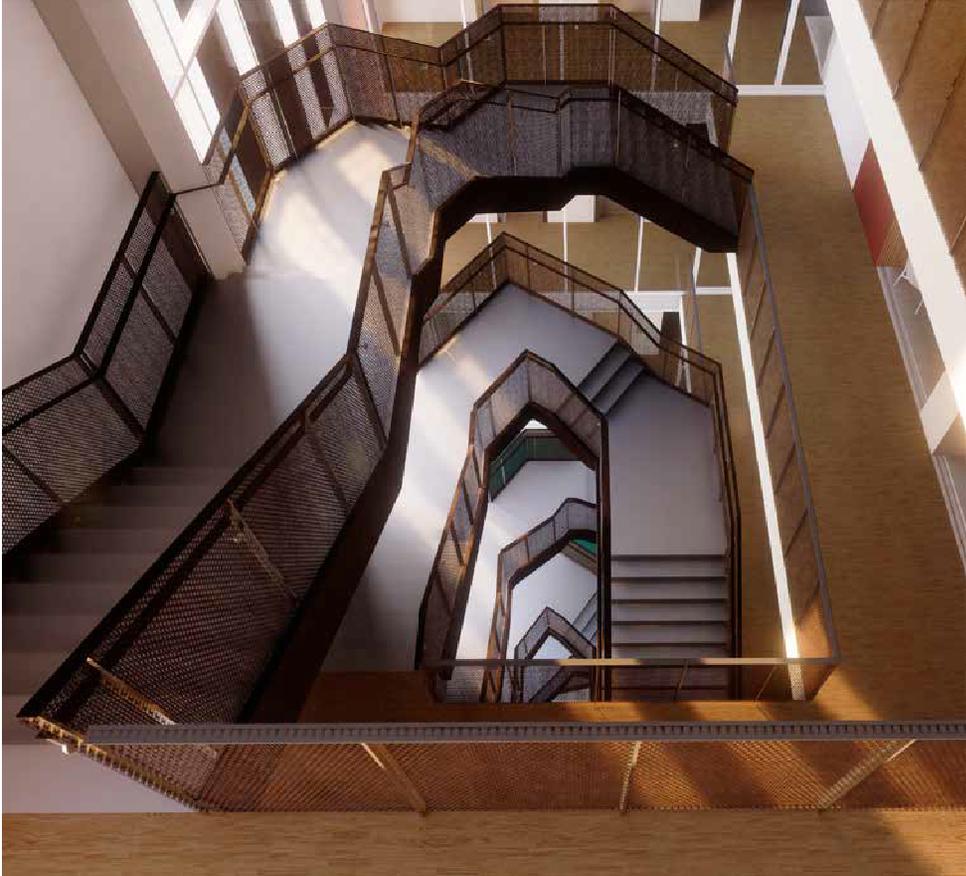
Building Identity

The Approach



Building Identity

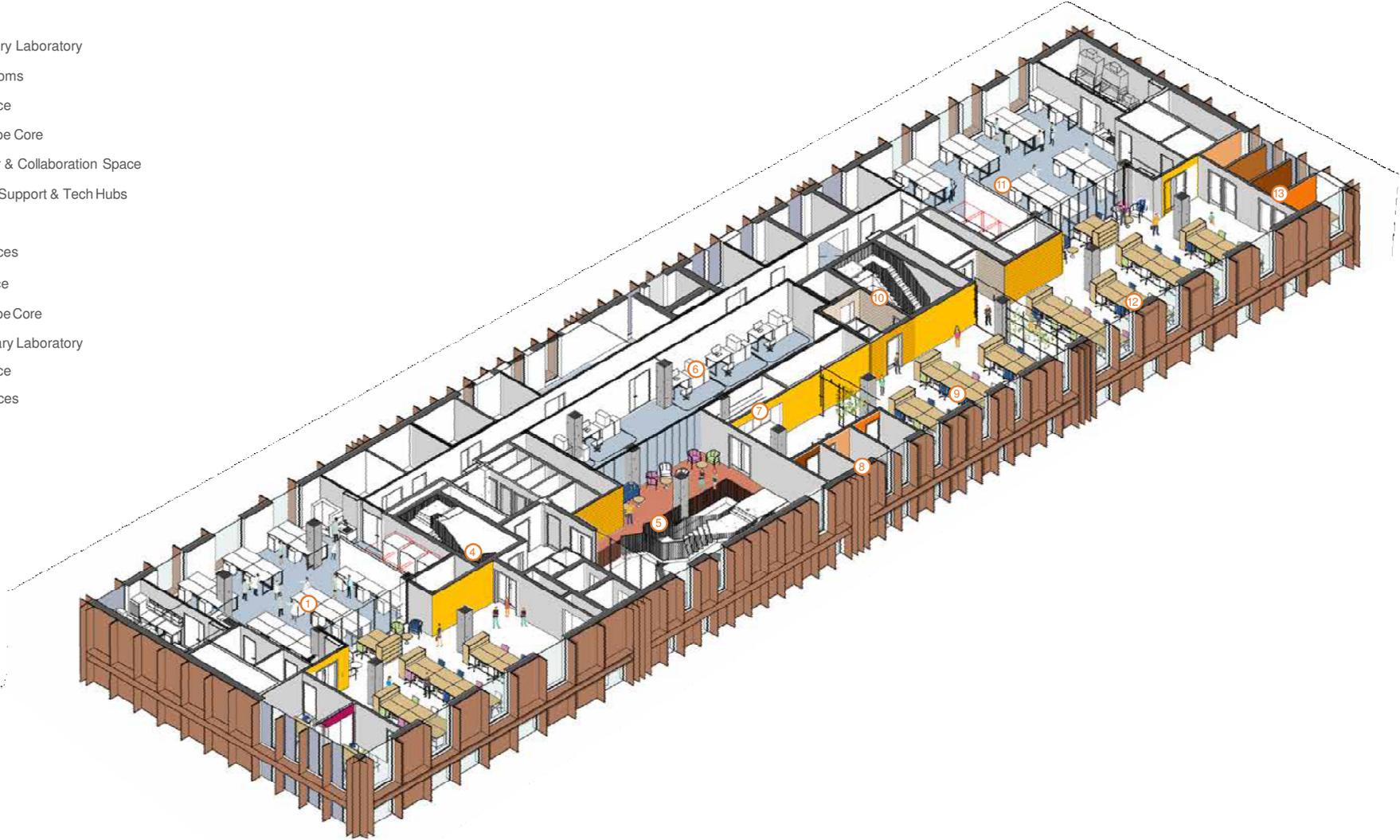
The Atrium Stair



Building Identity

The Typical Floor

- ① South Primary Laboratory
- ② Meeting Rooms
- ③ Shared Office
- ④ South Escape Core
- ⑤ Central Stair & Collaboration Space
- ⑥ Laboratory Support & Tech Hubs
- ⑦ Tea Point
- ⑧ Cellular Offices
- ⑨ Shared Office
- ⑩ North Escape Core
- ⑪ North Primary Laboratory
- ⑫ Shared Office
- ⑬ Cellular Offices



Science &
Office
Typical Floor

Building Identity

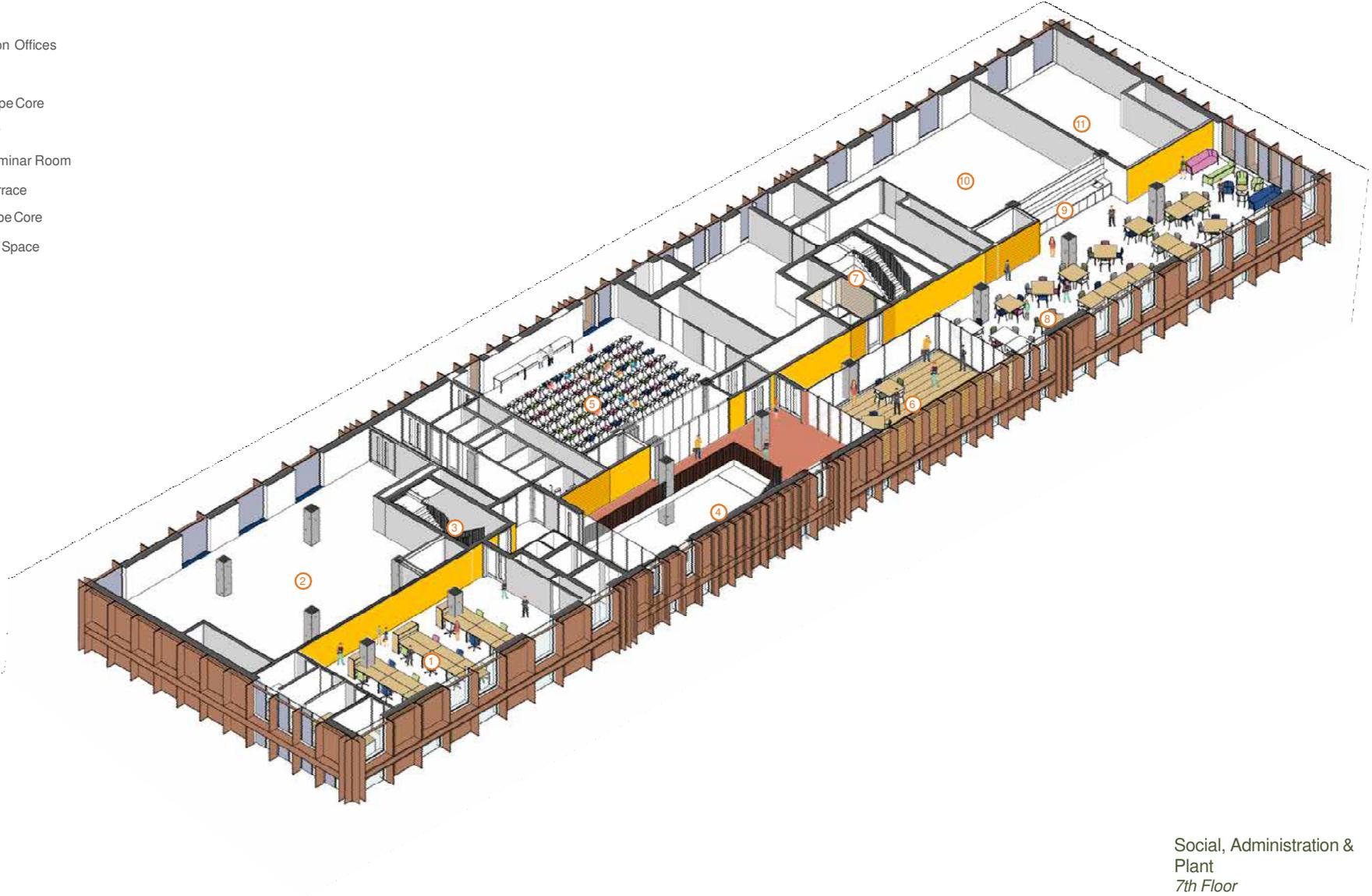
The Typical Floor



Building Identity

The Top Floor Social Spaces

- ① Administration Offices
- ② Plant
- ③ South Escape Core
- ④ Central Stair
- ⑤ 120 pers Seminar Room
- ⑥ External Terrace
- ⑦ North Escape Core
- ⑧ Cafe/ Social Space
- ⑨ Tea Point
- ⑩ Plant
- ⑪ Data Centre



Social, Administration &
Plant
7th Floor

Building Identity

The Top Floor Social Spaces



Thanks

ENGINEERING SERVICES DESIGN

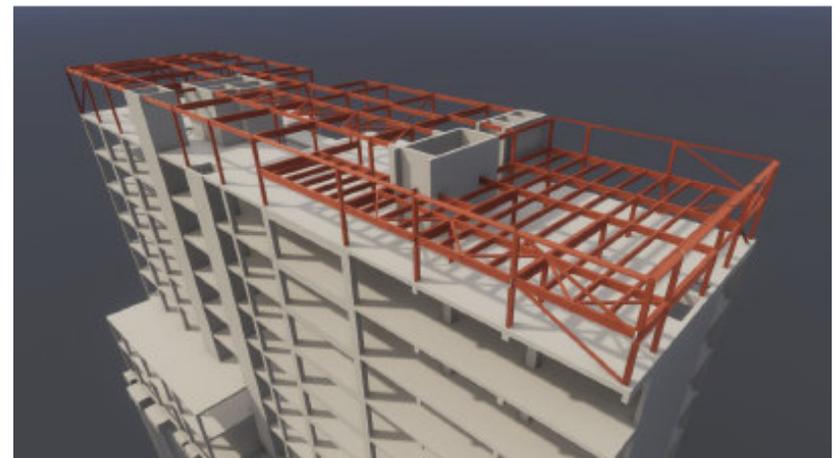
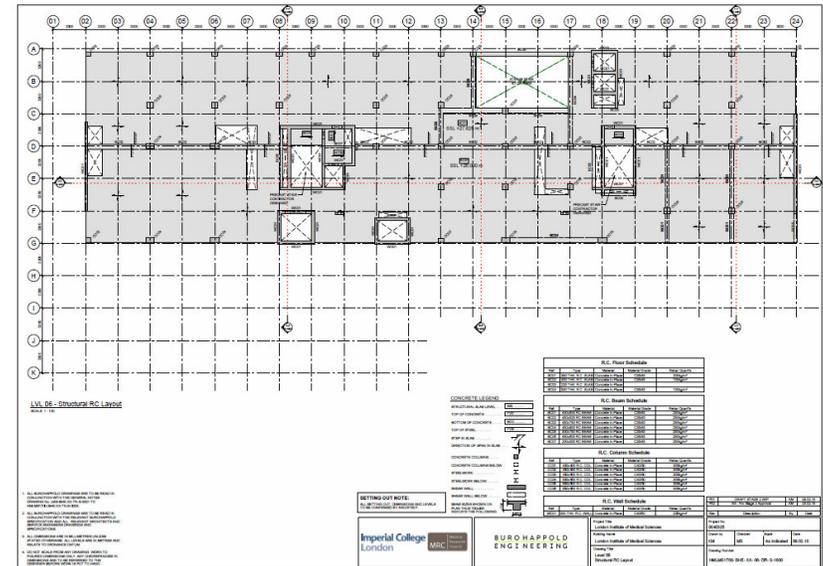
Richard Walder

Buro Happold

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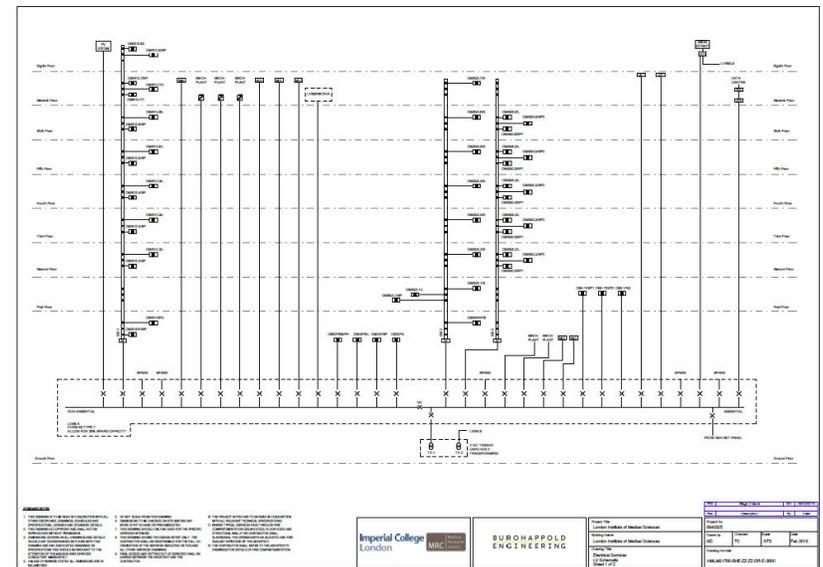
Structural Design

- ❑ Concrete Frame
- ❑ Lightweight Plant Structure
- ❑ Piled foundation solution; likely Continuous Flight Auger (CFA)
- ❑ Preliminary GI undertaken (trial pits, boreholes, gas monitoring, sampling)
- ❑ Further GI works to be undertaken; EA approvals process by Aurora



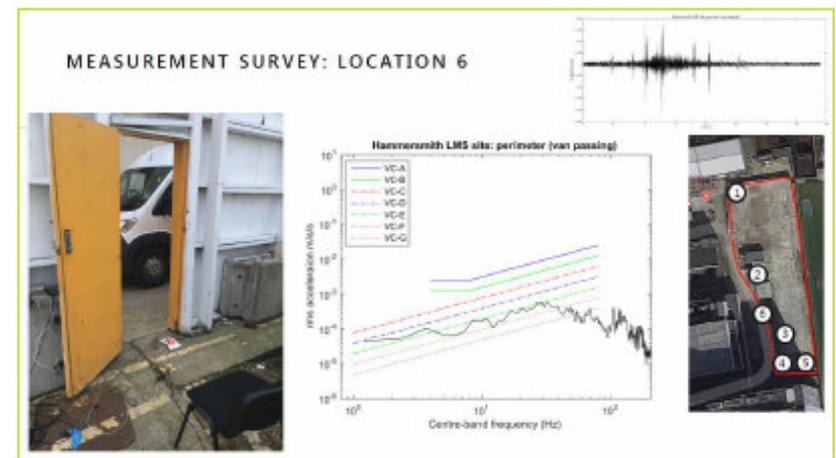
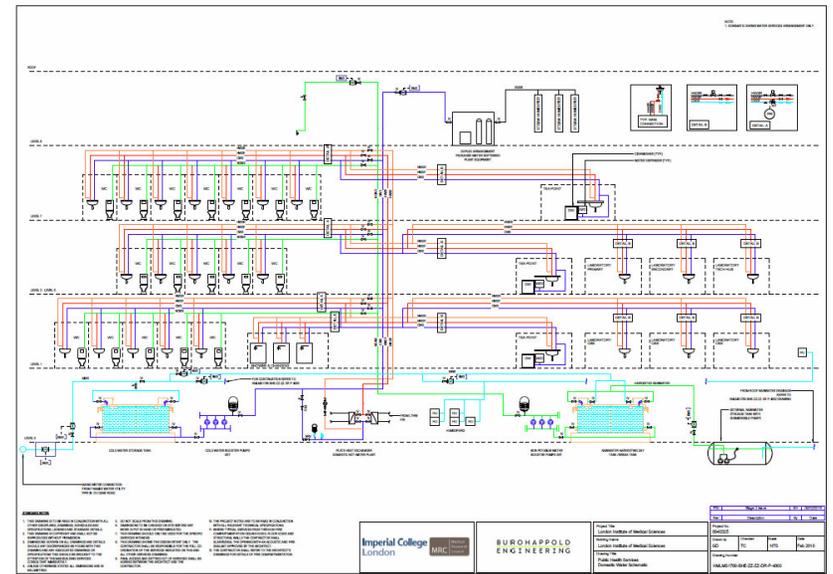
Electrical Design

- ❑ UKPN 2MVA Substation
- ❑ Packaged Standby Generator Plant at Roof Level
- ❑ Two primary risers (N/S)
- ❑ Rising busbars
- ❑ EMI shielding to Cryo EM Facilities
- ❑ Data Centre at L7
- ❑ PV Array on Roof



Other Engineering Aspects

- ❑ Fully sprinklered building
- ❑ House CO₂, N₂, CA
- ❑ Numerous water systems
- ❑ Sewer diversions & attenuation
- ❑ Acoustic Design
- ❑ Vibration Consultancy
- ❑ Fire Engineering



Q&A



Thank you for your time today

