DATED 22 September **2014**

(1) UNIVERSITY COLLEGE LONDON HOSPITALS NHS FOUNDATION TRUST

and

(2) THE MAYOR AND BURGESSES OF THE LONDON BOROUGH OF CAMDEN

A G R E E M E N T

relating to land known as FORMER ODEON SITE AND ROSENHEIM BUILDING SITE BOUNDED PARTLY BY GRAFTON WAY, TCR, HUNTLEY STREET AND UNIVERSITY STREET LONDON WC1E 6DB pursuant to Section 106 of the Town and Country Planning Act 1990 (as amended) Section 2 of the Local Government Act 2000 and Section 1 of the Localism Act 2011 and Section 111 of the Local Government Act 1972 and Section 278 of the Highways Act 1980

Andrew Maughan
London Borough of Camden
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London WC1H 9LP

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CLS/COM/AB/1685.2549

THIS AGREEMENT is made the 22nd day of September 2014

B E T W E E N:

i. **UNIVERSITY COLLEGE LONDON HOSPITALS NHS FOUNDATION TRUST** of 235 Euston Road London NW1 2BU (hereinafter called "the Owner") of the first part

ii. **THE MAYOR AND BURGESSES OF THE LONDON BOROUGH OF CAMDEN** of Town Hall, Judd Street, London WC1H 9LP (hereinafter called "the Council") of the second part

1. **WHEREAS**

1.1 The Owner is registered at Land Registry as the freehold proprietor with Title absolute of the Property under Title Numbers LN41718 and LN249567 and is interested in the Property for the purposes of Section 106 of the Act.

1.2 A Planning Application for the Development of the Property was submitted to the Council and validated on 17 December 2013 and the Council resolved to grant permission conditionally under reference number 2013/8192/P subject to conclusion of this legal Agreement.

1.3 The Council is the local planning authority for the purposes of the Act for the area in which the Property is situated and considers it expedient in the interests of the proper planning of its area that the development of the Property should be restricted or regulated in accordance with this Agreement.

1.4 As local highway authority the Council considers the Highways Works to be carried out pursuant to this section 278 Agreement to be in the public benefit.

1.5 For that purpose the Owner is willing to enter into this Agreement pursuant to the provisions of Section 106 of the Act.

2. DEFINITIONS

In this Agreement the following expressions (arranged in alphabetical order) shall unless the context otherwise requires have the following meanings:-

2.0	"the Act"	the Town and Country Planning Act 1990 (as amended)
2.1	"the Agreement"	this Planning Obligation made pursuant to Section 106 of the Act
2.2	"the Additional Training and Employment Contribution"	in the event that a minimum of the Target Apprentice Number of apprentices are not employed at the Development pursuant to clause 4.6, the sum of £7,000 (seven thousand pounds) for each apprentice out of the Target Apprentice Number of apprentices not employed on the Site to be paid by the Owner to the Council in accordance with the terms of this Agreement and to be applied by the Council in the event of receipt in conjunction with Kings Cross Construction to promote education and opportunities for jobs and employment to training within the London Borough of Camden
2.3	"Bus Stop Shelter Contribution"	the sum of £13,000 (thirteen thousand pounds) to be paid by the Owner to the Council in accordance with the terms of this Agreement and to be to be applied by the Council in the event of receipt towards funding the Warren Street Bus Stop Improvement Works
2.4	"Business Parking Bay"	a parking place designated by the Council by an order under the Road Traffic Regulation Act 1984 or other relevant legislation for use by businesses of the locality in which the Development is situated
2.5	"Business Parking Permit"	a parking permit issued by the Council under section 45(2) of the Road Traffic Regulation Act 1984 allowing a vehicle to park in a Business Parking Bay

2.6	"the Certificate of Practical Completion"	the certificate issued by the Owner's contractor or architect or project manager certifying that the Development has been completed
2.7	"CHP Feasibility Plan"	A plan setting out the specific measures the Owner will undertake to investigate the feasibility of connecting the energy systems within the Development to heat and power networks systems in the vicinity of the Development this to include specific investigations in relation to the existing Gower Street Network (shown in Blue on Plan 2 annexed hereto (with light blue as potential) and the Bloomsbury Heat and Power Network (shown in Red)
2.8	"CHP Feasibility Review Criteria"	The criteria the Council will take into account in exercising its discretion under clause 4.14 hereof as to whether it is feasible for the Owner to connect the energy systems within the Development to heat and power networks systems in the vicinity of the Development this to include (i) the cost of connection when balanced against cost of alternative sources of heat and power and the medium and long term value of energy benefits arising from connection (ii) practical issues (iii) any representations made by the Owner
2.9	"Construction Management Plan"	a plan setting out the measures that the Owner will adopt in undertaking the demolition of the Existing Buildings and the construction of the Development using good site practices in accordance with the Council's Considerate Contractor Manual to ensure the Construction Phase of the Development can be carried out safely and with minimal possible impact on and disturbance to the surrounding environment and highway network including (but not limited to):-

(i) a statement to be submitted to the Council giving details of the environmental protection highways safety and

community liaison measures proposed to be adopted by the Owner in order to mitigate and offset potential or likely effects and impacts arising from the demolition of the Existing Buildings or structures on the Property and the building out of the Development;

(ii) incorporation of the provisions set out in the **Schedule 1** annexed hereto

(iii) incorporation of the provisions set out in the **Schedule 2** annexed hereto

(iv) effects on the health and amenity of local residences site construction workers local businesses and adjoining developments undergoing construction;

(vi) amelioration and monitoring measures over construction traffic including procedures for notifying the owners and or occupiers of the residences and businesses in the locality in advance of major operations delivery schedules and amendments to normal traffic arrangements (if any);

(vii) the inclusion of a waste management strategy for handling and disposing of construction waste; and

(viii) identifying means of ensuring the provision of information to the Council and provision of a mechanism for monitoring and reviewing as required from time to time

2.10 "the Construction Phase" the whole period between
(i) the Implementation Date and
(ii) the date of issue of the Certificate of Practical Completion

2.11 "the Council's Considerate the document produced by the Council from time to time entitled "Guide for Contractors Working in Camden" relating to the good

	Contractor Manual"	practice for developers engaged in building activities in the London Borough of Camden
2.12	"the Development"	redevelopment of the former Odeon site and demolition of the Existing Building to provide a Proton Beam Therapy (PBT) cancer treatment facility and day surgery facilities in 4 levels of basement; inpatient medical facilities and a ground floor retail unit (175 sq m approximate GIA) in a 7 storey development above ground (34,596.5 sq m GIA in total) including roof plant, a new pedestrian entrance on corner of Grafton Way and Huntley Street, a new service entrance on Huntley Street, a ground floor drop-off area off Grafton Way, and three roof gardens; and the relocation of the oxygen tanks to University Street frontage inside a new enclosure as shown on drawing numbers EXISTING: A/UCLH4: 1500-G; 1570-B; 1507-B; 1503-D; 1530-E; 1513-B; 1509-B; 1512-B; 1508-B; 0200-F; 0201-F; 1510-B; 0301-G; 0300-H; 1514-B; 1506-B; 1511-B; 1515-B; PROPOSED: A/UCLH4: 1516-M; 1517-M; 1818-M; 1519-N; 1520-P; 1521-N; 1522-N; 1523-N; 1524-N; 1525-N; 1526-M; 1527-M; 1531-F; 1532-N; 1533-N; 1534-C; 1540-N; 1541-N; 1550-D; 1551-H; 1554-H; 1555-G; 1556-F; 1557-F; 1558-G; 1560-F; 1561-D; 1577-C; 1581-C; SK243-A; SK0250-D; 0203-E; SK0251; VN50118.09-ECC-DG-0003 SUPPORTING DOCS: Preliminary Ground Movement Assessment Produced by Campbell Reith dated March 2014; Updated summary tables S1a, S2, S3a produced by Anstey Horne dated 18/11/2013; Design and Access Statement produced by Scott Tallon Walker Architects in association with Edward Williams Architects dated 13/12/2013; Planning Design Report: Acoustics prepared by Clarke Saunders Associates; Air Quality Assessment produced by SKM dated 06/12/2013; Archaeological Desk Based Assessment produced by CgMs dated 06/12/2013; BREEAM report produced by ARUP dated 05/12/2013; Clinical Overview Document produced by UCLH (undated); Ecology Survey to inform BREEAM produced by Thomson Ecology (undated); Energy Strategy produced by ARUP dated 05/12/2013;

		Heritage Statement produced by KM Heritage dated 01/12/2013; Planning Statement produced by Jones Lang LaSalle dated 17/12/2013; Statement of Consultation produced by UCLH (undated); Summary of Environmental Information produced by Jones Lang LaSalle dated Dec 2013; Transport Assessment by SKM; Basement Impact Assessment produced by Campbell Reith dated 04/12/2013; Daylight and sunlight report produced by Anstey Horne dated 04/12/2013; land Quality Statement produced by Campbell Reith dated 15/11/2013; Rosenheim Building Retention - Feasibility Study produced by Scott Tallon Walker Architects dated 10/12/2013; Structural Demolition report produced by Campbell Reith dated 04/12/2013; Water Environmental Impact Statement produced by Campbell Reith dated 15/11/2013
2.13	"the Demolition Phase"	the whole period during which any works for the demolition of the existing buildings at the Property as referred to in the Planning Permission and associated site clearance are being carried out
2.14	"the Demolition Date"	the first date when any works for the demolition of the existing buildings at the Property as referred to in the Planning Permission and associated site clearance are undertaken and (ii) such works for the demolition of the existing buildings at the Property as referred to in the Planning Permission and associated site clearance shall herein be referred to as the "the Demolition Works"
2.15	"the Demolition Plan"	A plan setting out the measures that the Developer will adopt in undertaking the Demolition Phase of the Development using good site practices in accordance with the Council's Considerate Contractor Manual to ensure the Demolition Phase of the Development can be carried out safely and with minimal possible impact on and disturbance to the surrounding environment and highway network including (but not limited to):- (i) a statement to be submitted to the Council giving details of

the environmental protection highways safety and community liaison measures proposed to be adopted by the Developer in order to mitigate and offset potential or likely effects and impacts arising from the demolition of the existing buildings or structures on the Property and the building out of the Development;

(ii) incorporation of the relevant provisions set out in the First Schedule annexed hereto;

(iii) incorporation of the relevant provisions set out in the Second Schedule annexed hereto;

(iv) amelioration and monitoring effects on the health and amenity of local residences site construction workers local businesses and adjoining developments undergoing construction;

(v) amelioration and monitoring measures over construction traffic including procedures for notifying the owners and or occupiers of the residences and businesses in the locality in advance of major operations delivery schedules and amendments to normal traffic arrangements (if any);

(vi) the inclusion of a waste management strategy for handling and disposing of construction waste

(vii) identifying means of ensuring the provision of information to the Council and provision of a mechanism for monitoring and reviewing as required from time to time

(viii) measures to ensure liaison/ co-ordination with the Council's Highways Department

2.16 "the Energy Efficiency and Renewable Energy Plan" The strategy setting out a package of measures to be adopted by the Owner in the management of the Development with a view to reducing carbon energy emissions appended at Schedule 5

2.17	"the Existing Building"	the Rosenheim Building currently located on the Property
2.18	"the Highways Approval in Principle Contribution"	the sum of £4,500.00 (Four thousand, five hundred thousand pounds) to be paid by the Owner and to be applied by the Council in connection with works to the public highway arising from the basement element of the Development in accordance with the terms of this Agreement
2.19	"the Highways Contribution"	the sum of £145,000.000 (one hundred and forty five thousand pounds only) to be paid by the Owner to the Council in accordance with the terms of this Agreement and to be applied by the Council in event of receipt for the carrying out of works to the public highway and associated measures in the vicinity of the Property required as a direct result of the Development all works will be subject to final measure and any level adjustment required and for the avoidance of doubt the Council in accepting this sum does not undertake any responsibility in connection with any required statutory undertakers works and excludes any statutory undertakers costs
2.20	"the Implementation Date"	the date of implementation of the Development by the carrying out of a material operation as defined in Section 56 of the Act excluding any works of demolition and references to "Implementation" and "Implement" shall be construed accordingly
2.21	"Kings Cross Construction"	the Council's flagship skills construction training centre providing advice and information on finding work in the construction industry
2.22	"the Legible London Contribution"	the sum of £14,000 (fourteen thousand pounds) to be paid by the Owner to the Council in accordance with the terms of this Agreement and to be applied by the Council in the event of receipt

		towards Transport for London's pedestrian way finding system that's helping people walk around London
2.23	"the Level Plans"	plans demonstrating the levels at the interface of the Development the boundary of the Property and the Public Highway
2.24	"Local Procurement Code"	the code annexed to Schedule 4 hereto
2.25	"Occupation Date"	the date when any part of the Development is occupied and the phrases "Occupy", "Occupied" and "Occupation" shall be construed accordingly
2.26	"On Street Parking Bay"	a parking place designated by the Council by an order under the Road Traffic Regulation Act 1984 or other relevant legislation for use by residents and business occupiers of the locality in which the Development is situated
2.27	"On Street Parking Permit"	A parking permit issued by the Council under section 45(2) of the Road Traffic Regulation Act 1984 allowing a vehicle to park in an On Street Parking Bay
2.28	"the Parking and Drop off Area"	the on-site Passenger Transport Services and visitor drop-off and parking area indicated on Plan 3 annexed hereto
2.29	"the Parking and Drop Off Management Plan Number One"	a plan setting out management requirements for the effective and safe operation of the Passenger Transport Services and visitor drop-off to and from the Development and Parking and Drop off Area so as to minimise as far as reasonably practicable impacts on the operation of the highway network traffic movement and on street parking in the vicinity of the Property
2.30	"the Parking and Drop Off	an updated version of the Parking and Drop Off Management Plan Number One reviewed having regard to the Parking and

	Management Plan Number Two"	Drop off Management Plan Review Criteria setting out revised management requirements for the effective and safe operation of the on-site Passenger Transport Services and visitor drop-off to and from the Development and the Parking and Drop off Area so as to minimise as far as reasonably practicable impacts on the safe and effective operation of the highway network traffic movement and on street parking in the vicinity of the Property and incorporating requirements re parking and drop off provision off site on other sites owned by the Owner in the vicinity as necessary to secure this
2.31	"the Parking and Drop Off Management Plan Number Three"	an updated version of the Parking and Drop Off Management Plan Number Two reviewed having regard to the Parking and Drop off Management Plan Review Criteria setting out revised management requirements for the effective and safe operation of the on-site Passenger Transport Services and visitor drop-off to and from the Development and the Parking and Drop off Area so as to minimise as far as reasonably practicable impacts on the safe and effective operation of the highway network traffic movement and on street parking in the vicinity of the Property and incorporating requirements re parking and drop off provision off site on other sites owned by the Owner in the vicinity as necessary to secure this
2.32	"the Parking and Drop off Management Plan Review Criteria"	The criteria the Council will adopt in considering whether or not to approve drafts of the Parking and Drop Off Management Plan Number Two and the Parking and Drop Off Management Plan Number Three namely; • the effectiveness of the operation of previous iterations of the Parking and Drop Off Management Plan as demonstrated by technical information/ survey data submitted by the owner at the Owner's expense the impact on the effective operation of available parking provision/ waiting restrictions and traffic management measures / highway throughput and traffic flow (including the avoidance of jams, blockages, bottlenecks and traffic

		backing up), and highway safety on streets in the vicinity with particular reference to Gower Street, Huntley Street, Grafton Road and University Street and Tottenham Court Road
2.33	"the Parties"	mean the Council and the Owner
2.34	"the Pedestrian Cyclist and Environmental Contribution"	the sum of £347,250.00 (three hundred and forty seven thousand, two hundred and fifty pounds) to be paid by the Owner to the Council in accordance with the terms of this Agreement and to be applied by the Council in the event of receipt for the provision of various transport pedestrian cycle and public realm improvements in the vicinity of the Development
2.35	"Plan 1"	the plan marked "Plan 1" annexed hereto showing the Property
2.36	"Plan 2"	the plan marked "Plan 2" annexed hereto showing the existing Gower Street Network
2.37	"Plan 3"	the plan marked "Plan 3" annexed hereto showing the Parking and Drop off Area referred to in Clause 2.28
2.38	"the Planning Application"	a planning application in respect of the development of the Property submitted to the Council and validated on 17 December 2013 for which a resolution to grant permission has been passed conditionally under reference number 2013/8192/P subject to conclusion of this Agreement
2.39	"Planning Obligations Monitoring Officer"	a planning officer of the Council from time to time allocated to deal with all planning obligations pursuant to S106 of the Act (and notified to the Owner in writing) to whom all notices, correspondence, approvals etc must be sent in the manner prescribed at clause 6.1 hereof
2.40	"the Planning Permission"	a planning permission granted for the Development substantially in the draft form annexed hereto at Schedule 6

2.41	"the Property"	the land known as former Odeon site and Rosenheim building site bounded partly by Grafton way, TCR, Huntley street and University Street London WC1E 6DB the same as shown edged red on the plan on Plan 1
2.42	"the Public Open Space Contribution"	the sum of £500.000.00 (Five hundred thousand pounds only) to be paid by the Owner to the Council in accordance with the terms of this Agreement and to be applied by the Council in the event of receipt for the improvement maintenance and upkeep of existing public open spaces and/or nature conservation improvements to parks and open space and/or the obtaining of land to make public open spaces in the vicinity of the Development
2.43	"Residents Parking Bay"	a parking place designated by the Council by an order under the Road Traffic Regulation Act 1984 or other relevant legislation for use by residents of the locality in which the Development is situated
2.44	"Residents Parking Permit"	a parking permit issued by the Council under section 45(2) of the Road Traffic Regulation Act 1984 allowing a vehicle to park in Residents Parking Bays
2.45	"the Public Highway"	any carriageway footway and/or verge adjoining the Property maintainable at public expense
2.46	"the Service Management Plan"	a plan setting out a package of measures to be adopted by the Owner and approved by the Council from time to time for the management of the deliveries and servicing to the Development securing the minimisation of conflicts between service vehicle and car and pedestrian movements and the minimisation of damage to amenity from such servicing and deliveries which shall include inter alia the following:-

(a) a requirement for delivery vehicles to unload from a specific suitably located area;

(b) details of the person/s responsible for directing and receiving deliveries to the Property;

(c) measures to avoid a number of delivery vehicles arriving at the same time;

(d) likely frequency and duration of servicing movements and measures to be taken to avoid any conflicts;

(e) likely nature of goods to be delivered;

(f) the likely size of the delivery vehicles entering the Property;

(g) measures taken to ensure pedestrian management and public safety during servicing including a statement setting out how highway safety will be maintained during servicing movements

(h) measures taken to address servicing movements on and around the Property with a view inter alia to combining and/or reducing servicing and minimise the demand for the same

(i) provision of swept path drawings to ascertain manoeuvring when entering and exiting the Property in accordance with the drawings submitted and agreed with the Council;

(j) details of arrangements for refuse storage and servicing; and

(k) identifying means of ensuring the provision of information to the Council and provision of a mechanism for review and update as required from time to time

2.47 "the Sustainability Plan" a plan including a post construction review securing the incorporation of sustainability measures in the carrying out of the Development in its fabric and in its subsequent management and occupation which shall:-

(a) be based on a Building Research Establishment Environmental Assessment Method assessment with a target of achieving a Very Good Excellent or Outstanding rating and attaining at least 60% of the credits in each of Energy and Water and 40% of the credits in Materials categories;

(b) achieve at least Level 4 of the Code for Sustainable Homes attaining at least 50% of the credits in each of the Energy Water and Materials categories to be carried out by a recognised independent verification body in respect of the Property;

(c) include a pre-Implementation review by an appropriately qualified and recognised independent verification body in respect of the Property certifying that the measures incorporated in the Sustainability Plan are achievable and satisfy the aims and objectives of the Council's strategic policies on sustainability contained within its Development Plan; and

(d) measures to secure a post construction review of the Development by an appropriately qualified and recognised independent verification body in respect of the Property certifying that the measures incorporated in the Sustainability Plan have been achieved in the Development and will be maintainable in the Development's future management and occupation

2.48	"the Training and Employment Contribution"	the sum of £60,000 (sixty thousand pounds) to be paid by the Owner to the Council in accordance with the clause 4.6.4 (e) of this Agreement and to be applied by the Council in the event of receipt towards the cost of the apprentice placement training and support and mentoring service provided by Kings Cross Construction and to other training and employment support projects in the London Borough of Camden
2.49	"Target Apprentice Number"	Forty (40) apprentices
2.50	"The Travel Plan"	a plan to be produced having regard to the Estate Wide Travel Plan appended at Schedule 3 hereof setting out a package of measures to be adopted by the Owner in the management of the Property with a view to inter alia reducing trips in motor vehicles to and from the Property and promoting the use of environmentally friendly transport incorporating (but not limited to) the following:-

(a) the elements set out in Schedule 3 hereto;

(b) provision for an initial substantial review of the plan within six months of the Occupation Date ensuring the plan is updated upon receipt of results of the review and further approved in writing by the Council;

(c) a mechanism for monitoring and reviewing of the plan on the first anniversary of the Occupation Date;

(d) measures to ensure subsequent reviews on the third and fifth anniversary of the Occupation Date using the initial survey referred to in (b) for baseline monitoring, ensuring the plan is updated where required upon receipt of results of the review and further approved in writing by the Council

(e) provision for the appointment of Travel Plan Co-ordinator prior to the Occupation Date and a mechanism in place to advise

the Council of direct contact details and any subsequent changes in the post;

(f) identifying means of ensuring the provision of information to the Council and provision of a mechanism for review and update as required from time to time

2.51	"the Travel Plan Monitoring Contribution"	the sum of £5,729 five thousand seven hundred and twenty nine pounds) to be paid by the Owner to the Council in accordance with the terms of this Agreement and to be applied by the Council in the event of receipt for the review and approval of the Owner's Travel Plan over a six year period from the date of first Occupation of the Development
2.52	"the Travel Plan Co-ordinator"	an appropriately qualified and/or experienced person appointed by the Owner to deliver the objectives of the Travel Plan and be responsible for the coordination, implementation, reporting and review of the Travel Plan with a view to securing an ongoing process of continuous improvement
2.53	"Warren Street Bus Stop Upgrade Works"	works to secure improvement of bus stop facilities including erection of passenger shelter in and around Warren Street
2.54	"Working Group"	a working group convened in accordance with the local dialogue plan comprised within the Construction Management Plan with the aims set out therein including to facilitate consultation with the local community in respect of matters relating to construction works associated with the management of the Construction Phase of the Development

3. **NOW THIS DEED WITNESSETH** as follows:-

3.1 This Agreement is made in pursuance of Section 106 of the Act, and is a planning obligation for the purposes of Section 106 as aforesaid, and shall be enforceable by the Council against the Owner as provided herein and against any person deriving

title to any part of the Property from the Owner and insofar as it is not a planning obligation its provisions may be enforceable by the Council under any relevant statutory powers.

3.2 Words importing the singular shall include the plural and vice versa and any words denoting actual persons shall include companies corporations and other artificial persons.

3.3 Any reference to a specific statute or statutes include any statutory extension or modification amendment or re-enactment of such statute and any regulation or orders made under such statute.

3.4 The clause and paragraph headings do not form part of this Agreement and shall not be taken into account in its construction of interpretation.

3.5 It is hereby agreed between the Parties that save for the provisions of clauses 1, 2, 3 4.2, 4.3, 4.5, 4.6, 4.8, 4.9, 4.12, 4.13, 5, 6 and 7 hereof all of which shall come into effect on the date hereof the covenants undertakings and obligations contained within this Agreement shall become binding upon the Owner upon the Implementation Date.

3.6 The Council hereby agrees to grant the Planning Permission on the date hereof.

3.7 The Parties save where the context states otherwise shall include their successors in title.

4 OBLIGATIONS OF THE OWNER

The Owner hereby covenants with the Council as follows:-

4.1 **CAR FREE**

Commercial

4.1.1 To ensure that prior to occupying any part of the Development each new occupant of the Development is informed by the Owner of the Council's policy that they shall not be entitled (unless they are the holder of a disabled persons badge issued pursuant to Section 21 of the Chronically Sick and Disabled Persons Act 1970) to be granted a

Business Parking Permit to park a vehicle in a Business Parking Bay and will not be able to buy a contract to park within any car park owned, controlled or licensed by the Council.

4.1.2 The Owner for itself and its successors in title to the Property hereby acknowledges that the provision in Clause 4.1.1 above will remain permanently

4.2 **CONSTRUCTION MANAGEMENT PLAN / DEMOLITION PLAN**

4.2.1 Prior to the Demolition Date to provide the Council for approval a draft of the Demolition Plan.

4.2.2 Prior to the Implementation date to provide to the Council a draft of the Construction Management Plan.

4.2.3 Not to commence demolition in connection with the Development until the Council has approved the Demolition Plan as demonstrated by written notice to that effect.

4.2.4 Not to Implement or allow Implementation until the Council has approved the Construction Management Plan demonstrated by written notice to that effect

4.2.5 The Owner acknowledges and agrees that the Council will not approve the Construction Management Plan and/or the Demolition Plan (as the case may be) unless it demonstrates to the Council's reasonable satisfaction that (in respect of the Construction Management Plan) the Construction Phase of the Development and (in respect of the Demolition Plan) the Demolition Phase can be carried out safely and with minimal reasonable impact on and disturbance to the surrounding environment and highway network.

4.2.6 To ensure that throughout the Construction Phase and the Demolition Phase the Development shall not be carried out otherwise than in accordance with the requirements of the Construction Management Plan (for implementation of the Development) and the Demolition Plan (in respect of the Demolition) and not to permit the carrying out of any works comprised in demolition or building out the Development at any time when the requirements of the Construction Management Plan and the Demolition Plan are not being complied with and in the event of non-

compliance with this sub-clause the Owner shall upon notice from the Council forthwith take any steps reasonably required to remedy such non-compliance.

4.3 **HIGHWAYS**

4.3.1 On or prior to the Demolition Date to:-

(i) pay to the Council the Highways Contribution and the Highways Approval in Principle Contribution in full; and

(ii) submit to the Council the Level Plans for approval.

4.3.2 Not to carry out any works comprised in the Demolition Phase nor to Implement or to allow Implementation until such time as the Council has:-

(i) received the Highways Contribution and the Highways Approval in Principle Contribution in full; and

Not to Implement or to allow Implementation until such time as the Council has:-

(ii) approved the Level Plans as demonstrated by written notice to that effect (such approval not to be unreasonably withheld or delayed).

4.3.3 For the avoidance of doubt the Owner acknowledges that the Council has the right reserved to it to construct the Public Highway to levels it considers appropriate and does not undertake any responsibility in connection with any required statutory undertakers works and that the Highways Contribution excludes any statutory undertakers costs.

4.3.4 On completion of the Highway Works the Council may provide to the Owner a certificate specifying the sum ("the Certified Sum") expended by the Council in carrying out the Highway Works.

4.3.5 If the Certified Sum exceeds the Highway Contribution then the Owner shall within fourteen days of the issuing of the said certificate pay to the Council the amount of the excess.

4.3.6 If the Certified Sum is less than the Highway Contribution then the Council repay the Owner to the Owner the amount of the excess within 14 days of a request from the Owner to do so.

4.3.7 The Council covenants with the Owner prior to commencement of the Highway Works to consult the Owner as to the timing of the Highway Works and to consult with the Owner throughout the duration of the Highway Works and to use reasonable endeavours to ensure that the Highway Works are programmed to coincide with the Owner's programme of works as set out in the approved Construction Management Plan (and having regard to any elements the Owner reasonably considers are time critical and the operational needs of the Owner).

4.4 **PARKING AND DROP OFF MANAGEMENT PLAN**

4.4.1 On or prior to Implementation to submit to the Council for approval the Parking and Drop Off Management Plan Number One (such approval not to be unreasonably withheld or delayed).

4.4.2 Not to Occupy or permit Occupation of any part of the Development until such time as the Council has approved the Parking and Drop Off Management Plan Number One as demonstrated by written notice to that effect.

4.4.3 In the 12 months after the Occupation Date the Owner shall not Occupy or permit Occupation of any part of the Development at any time when the Development is not being managed in strict accordance with the Parking and Drop Off Management Plan Number One as approved by the Council from time to time and shall not Occupy or permit Occupation of the Development otherwise than in strict accordance with the requirements of the Parking and Drop Off Management Plan Number One.

4.4.4 On or prior to a date being 9 months from the Occupation Date to submit to the Council for approval the Parking and Drop Off Management Plan Number Two (such approval not to be unreasonably withheld or delayed having regard to the Parking and Drop Off Management Plan Review Criteria).

4.4.5 Subject to clause 4.4.8 below after a date being 12 months from the Occupation Date the Owner shall not Occupy or permit Occupation of any part of the Development at any time when the Development is not being managed in strict accordance with the Parking and Drop Off Management Plan Number Two as approved by the Council from time to time and shall not Occupy or permit Occupation of the Development otherwise than in strict accordance with the requirements of the Parking and Drop Off Management Plan Number Two.

4.4.6 On or prior to a date being 36 months from the Occupation Date to submit to the Council for approval the Parking and Drop Off Management Plan Number Three (such approval not to be unreasonably withheld or delayed by the Council having regard to the Parking and Drop Off Management Plan Review Criteria).

4.4.7 After a date being 36 months from the Occupation Date the Owner shall not Occupy or permit Occupation of any part of the Development at any time when the Development is not being managed in strict accordance with the Parking and Drop Off Management Plan Number Three as approved by the Council from time to time and shall not Occupy or permit Occupation of the Development otherwise than in strict accordance with the requirements of the Parking and Drop Off Management Plan Number Three .

4.4.8 The Council covenants with the Owner that in considering whether to give any approval of the Parking and Drop Off Management Plan Number Two under clause 4.4.4 hereof or any approval of the Parking and Drop Off Management Plan Number Three under clause 4.4.6 hereof the Council shall (i) have regard to the Parking and Drop off Management Plan Review Criteria (ii) will use reasonable endeavours to limit changes from previous versions of the plans save when these are required having regard to the Parking and Drop off Management Plan Review Criteria and (iii) only require such changes as the Council in its reasonable discretion considers necessary to secure the safe and effective operation and throughput of traffic and parking on the highway network in the vicinity of the Property

4.5 **LEGIBLE LONDON CONTRIBUTION**

4.5.1 On or prior to the Demolition Date to pay to the Council the Legible London Contribution in full.

4.5.2 Not to (i) carry out any Demolition Works or the permit the carrying out of such works nor (ii) Implement until such time as the Council has received the Legible London Contribution in full.

4.6 **LOCAL EMPLOYMENT**

4.6.1 In carrying out the works comprised in the Construction Phase of the Development the Owner shall use its reasonable endeavours to ensure that no less than 15% (fifteen percent) of the work force is comprised of residents of the London Borough of Camden.

4.6.2 In order to facilitate compliance with the requirements of sub-clause 4.6.1 above the Owner shall use all reasonable endeavours to work in partnership with (i) King's Cross Construction; and (ii) take the following specific measures to ensure:-

a) all contractors and sub-contractors provide information about all vacancies arising as a result of the Construction Phase of the Development to King's Cross Construction;

b) King's Cross Construction is notified of all vacancies, arising from the building contract for the Development for employees, self-employees, contractors and sub-contractors;

c) that King's Cross Construction is supplied with a full labour programme for the lifetime of the Development (with six-monthly updates) demonstrating (i) what skills and employment are needed through the life of the programme, and (ii) measures to ensure that these needs are met as far as possible through the provision of local labour from residents of the London Borough of Camden; and

d) the Council is provided with a detailed six-monthly labour return for monitoring the employment and self employment profile of all workers referred by Kings Cross Construction and employed during the Construction Phase.

4.6.3 The Owner shall use reasonable endeavours to ensure that at all times during the Construction Phase no less than the Target Apprentice Number of construction trade apprentice shall be employed at the Development always ensuring each apprentice shall be:-

(i) recruited through Kings Cross Construction;

(ii) employed for a total period of not less than 52 weeks; and

(iii) paid at a rate not less than the national minimum wage.

4.6.4 If the Owner is unable (i) to procure the employment of the Target Apprentice Number of apprentices in accordance with clause 4.6.3 of this Agreement (ii) this is demonstrated to the satisfaction of the Council (as evidenced by the Council's written approval to that effect) it shall:-

(a) forthwith pay to the Council the Additional Training and Employment Contribution for each apprentice not then employed at the Development; and

(b) shall not Occupy or permit Occupation until such time as each Additional Training and Employment Contribution required pursuant to clause 4.6.4 (a) above has been paid; and

(c) will notify the Council of any further reduction in the number of apprentices employed at the Development; and

(d) in the event that it has been demonstrated to the Council (as evidenced by written notice to that effect) replacement apprentices cannot be employed within 4 (four) weeks of such notice (such period to be extended in the event of any unreasonable delay on the part of Kings Cross Construction in arranging such replacements) shall forthwith pay the Additional Training and Employment Contribution for the further reduction in the number of apprentices to the Council; and

(e) for the avoidance of doubt the Additional Training and Employment Contribution is to be paid in addition to the Training and Employment Contribution and not in substitution of the same and the Training and Employment Contribution for each apprentice shall be paid to the Council by the Owner forthwith on the employment of each apprentice.

4.6.5 Notwithstanding the provisions in clause 4.6.4 of this Agreement, during the Construction Phase the Owner shall use reasonable endeavours to provide training opportunities on site for employees resident within the London Borough of Camden

and to provide a six-monthly statement setting out the details of candidates employed to Kings Cross Construction.

4.6.6 On or prior to the earlier of the Demolition Date and the Implementation Date to pay to the Council the Training and Employment Contribution and not to carry out any works comprised in the Demolition Phase nor to Implement or permit Implementation until such contribution has been paid to the Council.

4.7 LOCAL PROCUREMENT

4.7.1 Prior to Implementation to agree a programme during the Construction Phase to provide opportunities for local businesses to bid/tender for the provision of goods and service to the Development in accordance with the Council's Local Procurement Code.

4.7.2 On or prior to Implementation to meet with the Council's Labour Market and Economy Service's Local Procurement Team at least one month in advance of tendering contracts to agree the specific steps that will be taken to give effect to the Local Procurement Code.

4.7.3 To ensure that throughout the Construction Phase the Development shall not be carried out otherwise than in accordance with the requirements of the Local Procurement Code and in the event of non compliance with this sub-clause the Owner shall forthwith take any steps required to remedy such non-compliance.

4.7.4 To use reasonable endeavours to provide opportunities for local businesses to bid/tender for the provision of facilities management services and other post construction supply of goods and services.

4.8 PEDESTRIAN CYCLIST AND ENVIRONMENTAL CONTRIBUTION

4.8.1 On or prior to the earlier of the Demolition Date and the Implementation Date to pay to the Council the Pedestrian Cyclist and Environmental Contribution in full.

4.8.2 Not to (i) carry out any Demolition Works nor (ii) Implement or to permit Implementation until such time as the Council has received the Pedestrian Cyclist and Environmental Contribution in full.

4.9 **PUBLIC OPEN SPACE CONTRIBUTION**

4.9.1 On or prior to the earlier of the Demolition Date and the Implementation Date to pay to the Council the Public Open Space Contribution.

4.9.2 Not to (i) carry out any Demolition Works nor (ii) Implement or to permit Implementation until such time as the Council has received the Public Open Space Contribution.

4.10 **SERVICE MANAGEMENT PLAN**

4.10.1 On or prior to Implementation to submit to the Council for approval the Service Management Plan

4.10.2 Not to Occupy or permit Occupation of any part of the Development until such time as the Council has approved the Service Management Plan (such approval not to be unreasonably withheld or delayed) as demonstrated by written notice to that effect.

After the Occupation Date the Owner shall not Occupy or permit Occupation of any part of the Development at any time when the Development is not being managed in strict accordance with the Service Management Plan as approved by the Council from time to time and shall not Occupy or permit Occupation of the Development otherwise than in strict accordance with the requirements of the Service Management Plan.

4.11 **SUSTAINABILITY AND ENERGY**

4.11.1 On or prior to the Implementation Date to submit to the Council for approval the Sustainability Plan.

4.11.2 Not to Implement nor permit Implementation until the Sustainability Plan has been approved by the Council (such approval not to be unreasonably withheld or delayed) as demonstrated by written notice to that effect.

4.11.3 Not to Occupy or permit Occupation of the Property until the Council has served written notice (having regard to information served by the Owner) acknowledging that a satisfactory post-completion review undertaken by an appropriately qualified and recognised independent verification body in respect of the Property certifying that the measures incorporated in the Sustainability Plan have been achieved in the

Development and will be maintainable in the Development's future management and occupation of the Development .

4.11.4 Following the Occupation Date the Owner shall not Occupy or permit Occupation of the Development otherwise than in accordance with the requirements of the Sustainability Plan.

4.11.5 Not to Occupy or permit Occupation of the Property until the Council has served written notice (having regard to information served by the Owner) acknowledging that a satisfactory post-completion review undertaken by an appropriately qualified and recognised independent verification body in respect of the Property certifying that the measures incorporated in the Energy Efficiency and Renewable Energy Plan have been achieved in the Development and will be maintainable in the Development's future management and occupation of the Development

4.11.6 Following the Occupation Date the Owner shall not Occupy or permit Occupation of the Development otherwise than in accordance with the requirements of the Energy Efficiency and Renewable Energy Plan.

4.12 **TRAVEL PLAN**

4.12.1 On or prior to the Implementation date to:-

(a) submit to the Council the Travel Plan for approval; and

(b) pay to the Council the Travel Plan Monitoring Contribution

4.12.2 Not to Implement or permit Implementation of any part of the Development until such time as:

(a) the Council has approved the Travel Plan as demonstrated by written notice to that effect; and

(b) the Council has received the Travel Plan Monitoring Contribution in full.

4.12.3 Not Occupy or permit Occupation of any part of the Development at any time when the Development is not being managed in strict accordance with the Travel Plan as approved by the Council from time to time and shall not Occupy or permit Occupation

of the Development otherwise than in strict accordance with the requirements of the Travel Plan.

4.13 **WARREN STREET BUS STOP SHELTER UPGRADE**

4.13.1 Prior to the Demolition Date to pay to the Council the Bus Stop Shelter Contribution.

4.13.2 Not to (i) carry out any Demolition Works nor (ii) Implement or permit Implementation until such time as the Council has received the Bus Stop Shelter Contribution.

4.14 **CHP**

4.14.1 Prior to the Implementation Date to submit to the Council for approval the CHP Feasibility Plan.

4.14.2 Not to Implement nor permit Implementation until the CHP Feasibility Plan has been approved by the Council (as demonstrated by written notice to that effect).

4.14.3 Not to Occupy or permit Occupation until the Owner has received written notice from the Council to the effect that the measures identified in the CHP Feasibility Plan have been carried out and completed to the reasonable satisfaction of the Council.

4.14.4 In the event that the Council at the Occupation Date (having regard to the CHP Feasibility Criteria and the information required to be submitted by the Owner under the CHP Feasibility Plan) reasonably considers it is feasible for the Owner to connect the energy systems within the Development to heat and power networks systems in the vicinity of the Development the Owner shall (i) ensure a programme of steps agreed with the Council in writing is put into effect to secure such connection by a date no later than 6 months from the Occupation Date (ii) ensure thereafter that the energy systems within the Development remain connected and operate in conjunction with such heat and power networks systems in the vicinity of the Development.

4.14.5 In the event that the Council at the Occupation Date (having regard to the CHP Feasibility Criteria and the information required to be submitted by the Owner under the CHP Feasibility Plan) reasonably considers it is not feasible for the Owner to connect the energy systems within the Development to heat and power networks

systems in the vicinity of the Development the Owner shall within 6 months of the Occupation Date implement a programme of steps agreed with the Council to secure that the on site system unit is future proofed as the basis of a future hub to ensure that if future projects come forward then the surplus energy can be fed into that future site.

4.15 MANAGEMENT OF THE CONSTRUCTION PHASE

4.15.1 From the date of execution of this Agreement (unless otherwise agreed in writing with the Council) and at its own expense to invite or procure the invitation of the following to become members of the Working Group:

(a) representatives of existing residents associations traders associations or any other bodies or groups representing the owners residents and/or businesses in the immediate locality subject to a maximum of five (5) persons

(b) the appointed project manager for the Development plus one additional representatives as may be nominated by the Owner from time to time

(c) any other person or persons having a direct interest in the management of the Construction Phase reasonably nominated by the Council and reasonably agreed with the Owner (subject to a maximum of two (2) persons)

4.15.2 To

(a) procure that the project manager for the Development (and any other appropriate professional representatives of the Owners that the Parties agree) shall be a member of the Working Group and shall attend all meetings of the Working Group;

(b) appoint or procure the appointment of a person ("the Liaison Officer") responsible for liaising with the owners and or occupiers of the residents and businesses in the locality and other interested parties about the operation of the Working Group such person to organise and attend all meetings of the Working Group all such meetings to take place within easy walking distance of the Property; and

(c) ensure an appropriate venue in the vicinity of the Property is procured for each meeting of the Working Group.

4.15.3 To give a minimum of seven (7) days written notice of the time and place and date of each meeting of the Working Group to all members of such Working Group.

4.15.4 To ensure that meetings of the Working Group shall take place at least once every three months during the Construction Phase ALWAYS PROVIDED that any member of the Working Group shall be entitled on reasonable grounds by giving written notice of not less than ten (10) working days to the Liaison Officer to convene a meeting of the Working Group and a meeting of the Working Group so convened shall consider matters specified in the notice as requiring discussion AND PROVIDED ALSO that if the Working Group decide to meet less frequently than is provided above during the Construction Phase, meetings of the Working Group shall be convened at such intervals as the Working Group acting reasonably agrees and decides.

4.15.5 To ensure that an accurate written minute is kept of each meeting of the Working Group recording discussion and any decisions taken by the Working Group (this to be circulated by the Owner or Owner's representative to all members of the group within fourteen (14) days of each meeting).

4.15.6 In the event of the majority of members of the Working Group (having particular regard to the Construction Management Plan) making a reasonable recommendation to the Owner in respect of the management of the Construction Phase to use all reasonable endeavours to give effect to implementing any such reasonable recommendation and in the event of any reasonable recommendation which accords with the approved Construction Management Plan not being adopted by the Owner the Owner shall notify the next meeting of the Working Group of this fact together with written reasons as to why this is the case.

5 NOTICE TO THE COUNCIL/OTHER MATTERS

5.1 The Owner shall give written notice to the Council on or prior to the Implementation Date specifying that Implementation of the Planning Permission has taken or is about to take place.

5.2 Within seven days following completion of the Development the Owner shall certify in writing to the Planning Obligations Monitoring Officer in the manner outlined at clause 6.1 hereof quoting the Planning Permission reference 2013/8192/P the date upon which the Development is ready for Occupation.

5.3 The Owner shall act in good faith and shall co-operate with the Council to facilitate the discharge and performance of all obligations contained herein and the Owner shall comply with any reasonable requests of the Council to have access to any part of the Property or any requests to provide documentation within the Owner's possession (at the Owner's expense) for the purposes of monitoring compliance with the obligations contained herein.

5.4 The Owner agrees declares and covenants with the Council that it shall observe and perform the conditions restrictions and other matters mentioned herein and shall not make any claim for compensation in respect of any condition restriction or provision imposed by this Agreement and further shall indemnify the Council for any expenses or liability arising to the Council in respect of breach by the Owner of any obligations contained herein save to the extent that any act or omission of the Council its employees or agents has caused or contributed to such expenses or liability.

5.5 If satisfied as to the compliance of the Owner in respect of any obligation in this Agreement the Council shall (if requested to do so in writing and subject to payment of a fee of £1,000 in respect of each such obligation) provide through its Head of Legal Services a formal written certification of compliance, partial compliance or ongoing compliance (as and if appropriate) with the provisions of any such obligation.

5.6 Submission of any plan for approval by the Council under the terms of this Agreement shall be made by the Owner to the Council sending the full document and any appendices in electronic format (where practicable) to the Planning Obligations Monitoring Officer referring to the names dates and Parties to this Agreement and citing the specific clause of this Agreement to which such plan relates quoting the Planning Permission reference 2013/8192/P.

5.7 Payment of any financial contribution pursuant to Clause 4. of this Agreement shall be made by the Owner to the Council sending the full amount in the form of a Banker's Draft to the Planning Obligations Monitoring Officer referring to the names dates and Parties to this Agreement and citing the specific clause of this Agreement to which such Contribution relates quoting the Income Code or by Electronic Transfer directly to the Co-Operative Bank plc of 1 Islington High Street London N1 9TR quoting Sort Code 08-90-33 and London Borough of Camden General Account No. 61030019 and to inform

the Planning Obligations Monitoring Officer of such payment quoting the above details as if the payment had been made by Banker's Draft.

5.8 All consideration given in accordance with the terms of this Agreement shall be exclusive of any value added tax properly payable in respect thereof and all parties other than the Council shall pay and indemnify the Council against any such value added tax properly payable on any sums paid to the Council under this Agreement upon presentation of an appropriate value added tax invoice addressed to the Owner.

5.9 Any sums referred to in this Agreement as payable or to be applied by any party other than the Council under this Agreement shall be paid or applied TOGETHER WITH if such payment or application is made more than three months from the date of this Agreement a further sum ("A") being equal to the original sum payable ("B") multiplied by a figure being a fraction of which the All Items of Retail Prices ("the AIIRP") figure last published by the Central Statistical Office at the date hereof is the denominator ("X") and the last AIIRP figure published before the date such payment or application is made ("Y") less the last published AIIRP figure at the date hereof ("X") is the numerator so that

$$A = B \frac{x\ (Y-X)}{X}$$

5.10 All costs and expenses payable to the Council under this Agreement shall bear interest at the rate of 4% above the published base rate of the National Westminster Bank plc from time to time being charged from the date such payment is due until payment is made.

6 **IT IS HEREBY AGREED AND DECLARED** by the Parties hereto that:-

6.1 The provisions of Section 196 of the Law of Property Act 1925 (as amended) shall apply to any notice or approval or agreement to be served under or in connection with this Agreement and any such notice or approval shall be in writing and shall specifically refer to the name, date and Parties to the Agreement and shall cite the clause of the Agreement to which it relates and in the case of notice to the Council shall be addressed to the London Borough of Camden, Planning Obligations Officer, Urban Design and Renewal, Planning and Public Protection, Culture and Environment Directorate, Town Hall Annex, Argyle Street, London WC1H 9LP quoting the Planning Permission reference number 2013/8192/P and in the case of any notice or approval or agreement

from the Council this shall be signed by a representative of the Council's Environment Department.

6.2 This Agreement shall be registered as a Local Land Charge.

6.3 The Owner agrees to pay the Council its proper and reasonable legal costs incurred in preparing this Agreement on or prior to the date of completion of the Agreement.

6.4 The Council hereby covenants with the Owner that where any contribution is paid to the Council pursuant to this Agreement the Council shall use that contribution or procure that it is used only for the purposes set out in this Agreement.

6.5 The Owner hereby covenants with the Council that it will within 28 days from the date hereof apply to the Chief Land Registrar of the Land Registry to register this Agreement in the Charges Register of the title to the Property and will furnish the Council forthwith on written demand with official copies of such title to show the entry of this Agreement in the Charges Register of the title to the Property.

6.6 Nothing contained or implied in this Agreement shall prejudice or affect the Council's powers to enforce any specific obligation term or condition nor shall anything contained or implied herein prejudice or affect any provisions, rights, powers, duties and obligations of the Council in the exercise of its functions as Local Planning Authority for the purposes of the Act or as a local authority generally and its rights, powers, duties and obligations under all public and private statutes, bye laws and regulations may be as fully and effectually exercised as if the Council were not a party to this Agreement.

6.7 Neither the Owner nor its successors in title nor any person deriving title from them shall be bound by the obligations in this Agreement in respect of any period during which it no longer has an interest in the Property but without prejudice to liability for any breach committed prior to the time it disposed of its interest.

6.8 For the avoidance of doubt the provisions of this Agreement (other than those contained in this sub-clause) shall not have any effect until this Agreement has been dated.

6.9 If the Planning Permission is quashed or revoked or otherwise withdrawn or expires before effluxion of time for the commencement of development this Agreement shall forthwith determine and cease to have effect.

7 RIGHTS OF THIRD PARTIES

7.1 The Contracts (Rights of Third Parties) Act 1999 shall not apply to this Agreement

7.2 PROCESS TO BE FOLLOWED PRIOR TO LEGAL ACTION IN THE EVENT OF BREACH

Wherever in this Agreement reference is made to the phrase "following the Occupation Date the Owner shall not Occupy or permit Occupation of any part of the Development...."or wording equivalent effect the Council shall take no action at law to enforce such clause until each of the following provisions has been complied with:-

(a) the Council shall give notice to the Owner specifying in detail the clause or clauses of this Agreement in respect of which circumstances are considered to have arisen occasioning a breach or default on the part of the Owner, and the detailed circumstances of such breach or default;

(b) the Council shall state in detail what steps the Council considers to be required in order to bring about compliance with such obligation or obligations;

(c) a reasonable period shall be stated as the period within which the Owner shall be required to take such steps;

(d) the Borough Solicitor or his nominated deputy shall be required to attend a meeting with representatives of the Owner before the expiry of the notice period, in furtherance of the Council's obligation to act in good faith in relation to the obligations contained in this Agreement;

(e) it is expressly acknowledged by the Council that the Council shall at all times act reasonably having regard to representations made by the Owner and in accordance with its public law duties before taking any steps to enforce any provision of this Agreement to which this clause has application.

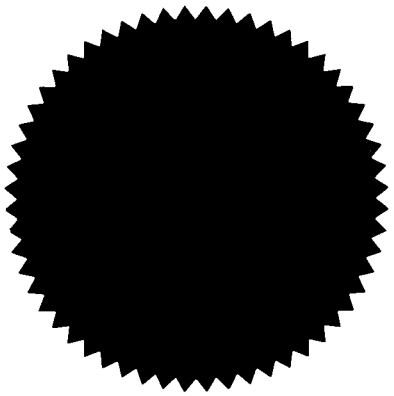
CONTINUATION OF SECTION 106 AGREEMENT IN RELATION TO FORMER ODEON SITE AND ROSENHEIM BUILDING
SITE BOUNDED PARTLY BY GRAFTON WAY, TCR, HUNTLEY STREET AND UNIVERSITY STREET LONDON WC1E 6DB

IN WITNESS whereof the Council has caused its Common Seal to be hereunto affixed and the Owner has executed this instrument as their Deed the day and year first before written

THE SEAL OF UNIVERSITY COLLEGE LONDON HOSPITALS NHS FOUNDATION TRUST hereunto affixed is authenticated by:-)

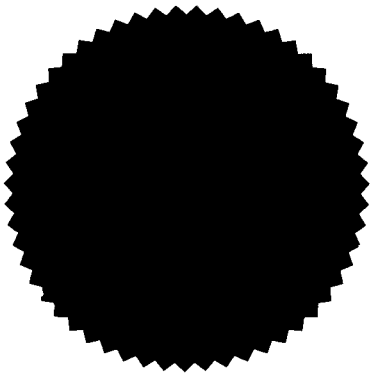
.....
Chairman/Authorised Signatory

.....
Authorised Signatory



THE COMMON SEAL OF THE MAYOR AND BURGESSES OF THE LONDON BOROUGH OF CAMDEN was hereunto Affixed by Order:)

R. Alexander
.....
Authorised Signatory



SCHEDULE 1
Construction Management Plan
Air Quality and Carbon Reduction

Requirements to control and minimise NOx, PM10, CO_2 emissions from construction sites and avoid nuisance and dust complaints.

A method statement shall be prepared and adopted as part of the Construction Management Plan to minimise gaseous and particulate matter emissions and noise generated during the Construction Phase. The method statement shall identify the specific measures which will be implemented to control air pollution emissions during each of the following stages of the Construction Phase: (a) demolition; (b) ground breaking; and (c) construction/build.

The Construction Phase shall be carried out in accordance with the Best Practise Guidance Note "Control of dust and emissions from construction and demolition" published by London Councils, 2006. The risk rating of the site shall be defined in the method statement and determined using the risk assessment methodology in the Best Practise Guidance. Techniques to control dust from construction activities and emissions from vehicles and plant, and undertake air quality monitoring, shall conform to the 'medium' or 'high' risk categories outlined in the Best Practice Guidance.

The following best practise measures shall be included as a minimum in the method statement:-

A - Techniques to control PM10 and NOx emissions from vehicles and plant

a) Low emission plant fitted with catalysts, diesel particulate filters or similar devices shall be used;
b) Plant shall be well maintained, with routine servicing of plant and non-road mobile machinery (NRMM) to be completed in accordance with the manufacturers recommendations;
c) Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment;

d) Non-road mobile machinery (NRMM) shall use ultra low sulphur tax-exempt diesel and be fitted with appropriate exhaust after-treatment such as catalysts, diesel particulate filters as stated on the approved list managed by the Energy Saving Trust. Details of the plant and control equipment shall be included in the method statement.

e) All construction vehicles shall comply with the Euro 4 emissions standard and where possible use low emission fuels and alternative technology.

f) Plant and vehicles shall be located way from the closest receptors or house in closed environments where possible.

B - Techniques to control dust emissions from construction and demolition

a) Keep site fencing, barriers and scaffolding clean using wet methods;

b) Buildings to be demolished shall be wrapped

c) Provide easily cleaned hard standing for vehicles and clean using wet sweeping methods;

d) Provide the use of wheel-wash facilities near the site exit. Fit wheel-washes with rumble grids to dislodge accumulated dust and mud prior to leaving the site to avoid carrying dust or mud off the site;

e) Inspect internal haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable;

f) Routinely clean the Public Highways and accesses using wet sweeping methods especially during dry periods;

g) Impose and signpost maximum speed limits of 5 mph on surfaced haul routes and work areas within the Site;

h) Ensure all vehicles carrying loose or potentially dusty material to or from the site are fully sheeted;

i) Store materials with the potential to produce dust away from site boundaries;

j) Sheet, seal or damp down stockpiles of excavated material held on site;

k) Any loose materials bought onto the site shall be protected by appropriate covering

l) The site shall be dampened down during the working day and again at the end of the day to reduce the amount that is re-suspended dust.

m) Ensure water suppression is used during demolition operations;

n) Ensure mobile crushing and screening plant and cement batching plant which are regulated under the Local Air Pollution Prevention and Control regime operate in compliance with a Part B Permit. This shall be submitted to the local authority prior to operation.

o) Site personnel shall be trained in dust mitigation and a manager shall be present for managing dust on site.

C - Air Quality Monitoring

a) Throughout the Construction Phase continuous particulate matter (PM10) monitoring shall be undertaken. Two instruments will be deployed at the site boundary in a transect orientated to the prevailing wind direction, with a third monitor located at the nearest sensitive receptor. One monitor shall be co-located with an anemometer.

b) Adequate quality assurance/quality control procedures shall be in place including monitor maintenance and calibration as well and data checking. PM10 data shall be collected automatically on an hour basis.

c) A trigger action level for PM10 concentrations of 200µg.m^{-3} (15 minute average) shall be used to identify incidences of elevated dust emissions at the site boundary. The development site shall comply with the trigger action throughout the demolition and construction phases.

d) An on-site alert system (email or SMS) shall be in place to notify appropriate staff that the trigger action level has been reached. Immediate and appropriate measures can be put in place to rectify abnormal particulate emissions. A procedure shall be established to deal with abnormal dust emissions. All incidences of abnormal particulate emissions leading to breaches of the trigger action level, shall be documented in the site log book (date and time), with details of the action take to remediate dust emissions.

e) An e-mail specifying details of any alert to be sent out to the Council's air quality officer as soon as practicable following any breach of the site trigger action level.

f) An electronic report shall be submitted to the Council's air quality officer every month summarising the following information from each monitoring site – 24 hour average PM10 concentration, date and time of any breach of the trigger action level with the 15 minute mean concentration, prevailing wind direction and details of the cause of elevated dust emissions and mitigation measures.

g) The Council shall be notified of any changes to the location and operation of dust PM10 monitoring instrumentation.

h) A 24-hour phone hotline shall be set up so that residents can complain about high dust or PM10 levels directly to the developer.

The following items shall be included in the method statement:

a) A specific timetable identifying the start and finish dates of each phase, including dust generating activities and PM10 monitoring.
b) An inventory of stationary and fugitive dust, PM10 and NOx emission sources with an explanation of how these will be mitigated in accordance with the London Council's Best Practise Guidance.
c) A map identifying the location of dust generating activities, plant equipment associated with emissions to air and PM10 monitors.
d) An air quality monitoring protocol prepared in accordance with the requirements of section C.

D - Techniques to reduce CO_2 emissions from construction vehicles

A commitment from the Owner that contractors' vehicles involved in construction and demolition work will adopt 'green fleet management practices' that will result in a 10% reduction in tail-pipe CO_2 emissions over the duration of the construction phase. A green fleet management plan included in the method statement identifying measures to improve vehicle efficiency and reduce CO_2 emissions from construction vehicles. This could include the use of fuel monitoring equipment in vehicles, eco-driver training, accreditation with FORS (Freight Operator Recognition Scheme run by TfL) or SAFED (Safe and Fuel Efficient Driving run by the DfT) and use of low carbon vehicles such as hybrid electric, electric and bio-methane.

SCHEDULE 2
Construction Management Plan
Highway Measures

A Construction Management Plan outlines how construction work will be carried out and how this work will be serviced (e.g. delivery of materials, set down and collection of skips), with the objective of minimising traffic disruption and avoiding dangerous situations and minimising the impact on local amenity. A Construction Management Plan should cover both demolition and construction phases of development. Details of the Construction Management Plan will relate to the scale and kind and location of the development and they should assess the impact on transport and on local amenity including road user amenity. Should any one of these criteria be considered not to be relevant, then specific justification, as to why that particular criterion is not relevant, will need to be provided. The Construction Management Plan should demonstrate that the following has been considered and where necessary the impacts mitigated:

(Note the term 'vehicles' used here refers to all vehicles associated with the implementation of the development, e.g. demolition, site clearing, delivering of plant, material and construction, staff parking etc)

a) A brief description of the site, surrounding area and development proposals for which the Construction Management Plan applies.

b) Proposed start and end dates for each phase of construction.

c) The proposed working hours within which vehicles will arrive and depart.

d) The access arrangements for vehicles.

e) Proposed routes for vehicles between the site and the Transport for London Road Network (TLRN). Consideration should also be given to weight restrictions, low bridges and cumulative affects of construction on the highway. A map of the TLRN can be downloaded from the following site:-
http://www.tfl.gov.uk/assets/downloads/TFL_Base_Map_Master.pdf

f) Typical sizes of all vehicles and the approximate frequency and times of day when they will need access to the site, for each phase of construction.

g) Swept path drawings for any tight manoeuvres on vehicle routes to the site.

h) Details (including accurate scaled drawings) of any highway works necessary to enable construction to take place.

i) Parking and loading arrangement of vehicles and delivery of materials and plant to the site.

j) Details of proposed parking bays suspensions and temporary traffic management orders.

k) Proposed overhang (if any) of the public highway (scaffolding, cranes etc.).

l) Details of hoarding required or any other occupation of the public highway.

m) Details of how pedestrian and cyclist safety will be maintained, including any proposed alternative routes (if necessary), and any Banksman arrangements.

n) Details of how traffic associated with the Development will be managed in order to reduce congestion.

o) Details of any other measures designed to reduce the impact of associated traffic (such as the use of construction material consolidation centres).

p) Details of how any significant amounts of dirt or dust that may be spread onto the public highway will be cleaned or prevented.

q) Details of consultation on a draft Construction Management Plan with local residents, business, local groups (e.g. residents/tenants and business associations) and Ward Councillors. Details should include who was consulted, how the consultation was conducted and the comments received in response to the consultation. In response to the comments received, the Construction Management Plan should then be amended where appropriate and where not appropriate a reason should be given why not. The revised Construction Management Plan should also include a list of all the comments received. You are advised to check your proposed approach to consultation with the Council before carrying it out.

r) Details of any Construction Working Group that will be set up, addressing the concerns of surrounding residents, as well as contact details for the person responsible for community liaison on behalf of the developer, and how these contact details will be advertised to the community.

s) Details of any schemes such as the "Considerate Contractors Scheme" that the project will be signed up to should form part of the consultation and be notified to the Council. Contractors will also be required to follow the "Guide for Contractors Working in Camden" also referred to as "Camden's Considerate Contractor's Manual"

t) Details of other construction sites in the local area and how your Construction Management Plan takes into consideration the cumulative effects of construction local to your site.

u) All contractors and sub-contractors operating large vehicles over 3.5 tonnes must meet all of the following conditions:-

1) Operators must be a member of TfL's Fleet Operator Recognition Scheme (www.tfl.gov.uk/fors) or similar at the Bronze level.

2) All drivers must have undertake cycle awareness training such as the Safe Urban Driver module through FORS or similar.

3) All vehicles associated with the construction of the Development must:

   i. Have Side Guards fitted, unless it can be demonstrated to the reasonable satisfaction of the Employer, that the Lorry will not perform the function, for which it was built, if Side Guards are fitted.

   ii. Have a close proximity warning system fitted comprising of a front mounted, rear facing CCTV camera (or Fresnel Lens where this provides reliable alternative), a Close Proximity Sensor, an in-cab warning device (visual or audible) and an external warning device to make the road user in close proximity aware of the driver's planned manoeuvre.

   iii. Have a Class VI Mirror and a further mirror cab mounted on the near side of vehicle to guard against a cyclist being unseen in a blind spot.

   iv. Bear prominent signage on the rear of the vehicle to warn cyclists of the dangers of passing the vehicle on the inside.

v) Any other relevant information with regard to traffic and transport.

w) The Construction Management Plan should also include the following statement:-

"The agreed contents of the Construction Management Plan must be complied with unless otherwise agreed with the Council. The project manager shall work with the Council to review this Construction Management Plan if problems arise in relation to the construction of the Development. Any future revised plan must be approved by the Council and complied with thereafter."

It should be noted that any agreed Construction Management Plan does not prejudice further agreement that may be required for things such as road closures or hoarding licences

SCHEDULE 3
THE TRAVEL PLAN

PART I: Components of the Travel Plan

The Travel Plan will be a basis for promoting sustainable travel to and from the Property.

Planning Policy Guidance note 13 (PPG13 (transport)) states that... "The Government wants to help raise awareness of the impacts of travel decisions and promote the widespread use of travel plans amongst businesses, schools, hospitals and other organisations."

For further advice on developing a Travel Plan see the Transport for London's travel plan guidance website http://www.lscp.org.uk/newwaytoplan/resources/file/Travel%20planning%20for%20new%20development%20in%20London.pdf

The Owner will implement the Travel Plan where appropriate in partnership with the Council and/or with public transport operators.

In drawing up the Travel Plan ("the Plan) the Owner shall ensure that provisions relating to the following matters are contained within the Plan:-

1. **Public Transport and walking**
   a. Review the public transport needs of occupiers and visitors and consider potential park and ride type services or shuttle-type services for occupiers, or suggest further enhancements to the scheduled London Bus network
   b. Provide in-house public transport information and ensure that this is regularly updated (both Transport for London and National Rail travel information is available from their respective websites: www.tfl.gov.uk/ www.nationalrail.co.uk)
   c. Consider provision of interest-free annual season ticket/travelcard loans for travel on buses, the underground, trains and trams for any commercial occupiers of the Development
   d. Encourage walking through the provision of information on the best pedestrian routes to and from the Property for occupiers and visitors

2. **Taxis and Minicabs**

Consideration must be given to the provision and management of Taxi access to the Property

3. **Traffic Restraint**

The Plan must seek to reduce the volume and impact of vehicles generated by the Development

4. **On-Street Parking Controls**

The plan should aim to contain the transport impacts of the site (including parking, loading and unloading) to within the curitlage of the site and reduce the impact of the site on surrounding on-street parking.

5. **Parking and Travel**

A review of occupier's travel should have the principal aim of reducing non-essential single occupant driver trips to the site and increasing the proportion of trips undertaken by bicycle and on foot. With regards to car travel and car parking, this should include:

a. a review and/ or development of criteria to reduce car allowances and include measures to limit the use of car parking and permits in and around the Property.
b. a review of any on-site parking charges
c. consideration and/or review of pool vehicles for work related trips including more environmentally friendly vehicles and alternative forms of transport for some trips.
d. consider the use of partial homeworking/teleworking/teleconferencing where feasible and appropriate
e. encourage walking through the provision of information on the best pedestrian routes to and from the Property for occupiers and visitors
f. consider flexible working to discourage peak hour travel

6. **Traffic Management**

An assessment must be made of the impacts of the proposed car park access changes on existing internal congested traffic flows and seek further enhancements to internal traffic flow to better manage congestion

7. **Cycling**

The following cycle measures must be provided in sufficient quantity in line with annual travel surveys to be subsequently carried out:

a. secure and well-lit workplace cycle parking

Consideration shall also be given to providing the following, especially in commercial developments:

b. changing and showering facilities

c. cycle allowance for work-related journeys
d. cycle and equipment loans and insurance
e. cycle repair facilities
f. cycle pool for work-related journeys
g. a Bicycle Users Group (BUG) to progress cyclists issues on site
h. work with the Council to improve cycle routes to/from the Property

8. **Facilities for Goods Movement and Servicing**

A Servicing Management Plan for the site must seek to:

a. identify the number and type of servicing vehicles required for the Property;
b. Limit the size of vehicle where a larger vehicle will create servicing conflicts;
c. Manage the timing of deliveries to avoid conflict with other servicing vehicles, conflict with loading or parking restrictions in the area or conflict with heavy pedestrian or traffic flows
d. encourage suppliers and delivery contractors to use alternatively–fuelled vehicles (such as electric and LPG vehicles and cycles) – organisations can apply to the Energy Saving Trust (www.est.org.uk) for alternatively- fuelled vehicle grants

PART II: Review and Monitoring of the Travel Plan

The Owner shall ensure that the Plan contains arrangements for the review and monitoring of the Travel Plan and that this is carried out on an ongoing basis and at least in years one,

three and five following occupation and including a initial survey undertaken three months following the Occupation Date. These arrangements will deal with the matters set out below establishing firm timescales for the taking of each step, specific targets to be adopted for the measuring of the effectiveness of each measure and a reporting mechanism to the Council. It is acknowledged that it will be appropriate to amend the Travel Plan by agreement in the light of developing circumstances.

1. **Review the Property's Transport Accessibility**

The first stage will be to review the Property's accessibility by all modes. An accessibility report will be produced and this will form the basis for the next stages.

2. **Consultation with occupiers**

This will involve meeting occupiers of the Property to promote the concept of a Travel Plan. The meetings will seek to identify a common set of objectives for encouraging walking, cycling and public transport usage combined with reducing reliance on the private car.

3. **User Consultation and Travel Surveys**

This stage will be based around consultation. It will be extremely important to secure the support of occupiers and users of the Development if the Plan is to succeed. This stage will include occupier and user travel surveys to examine the use of existing modes of travel, attitudes towards sustainable modes of transport and the most effective measures to promote sustainable transport for commuting journeys and business journeys. The Owner will consult with the Council at this stage.

4. **Implementation**

Stages 1 to 3 will provide the base information for the review of the Travel Plan.

5. Monitor and Review

The Travel Plan will secure an ongoing process of continuous improvement. Each version of the Travel Plan shall set out a mechanism of next steps to be tackled in line with results collated from the surveys and shall also set out a mechanism for reporting back to the Council on an annual basis on how effectively the Travel Plan is being in maximising the use of sustainable transport.

SCHEDULE 4
LOCAL PROCUREMENT CODE

1. INTRODUCTION

The use of local procurement agreements is a useful tool in helping the Council to improve economic prosperity and diversity in the local area which is a key aim of the Camden Community Strategy and Unitary Development Plan (adopted June 2006). The sourcing of goods and services locally will also help to achieve a more sustainable pattern of land use and reduce the need to travel. The use of section 106 Agreements attached to the grant of planning permission will be used as a mechanism to secure appropriate levels of local procurement of goods and services.

A fuller explanation of the policy background and the justification for the use of local procurement agreements and when they will be required is contained with Sections 32 and 33 of the Camden Planning Guidance (adopted December 2006) which can be viewed on the Council's web site. This document is in line with the objectives of other organizations such as the London Development Agency and Government Office for London.

The purpose of this code is to maximise the opportunities available to Local Businesses in Camden from larger property developments taking place in Camden both during and after the Construction Phase. The Local Procurement Code describes how the Owner/Developer in partnership with Camden Labour Market & Economy Service will ensure that Local Businesses benefit directly from the opportunities arising from both the Construction Phase of the Development and the end use of the Property.

The requirements of the Local Procurement Code apply to the developer, main contractor and subcontractors appointed by them as well as tenants subsequently occupying the building. The code is designed to support developers and contractors in fulfilling their commitments to the planning agreements by clarifying what is required from the outset. Although the wording is emphatic, Camden Labour Market & Economy Service seeks to work in partnership with contractors to assist them in meeting specifications and in finding suitable local companies. They will provide a

regularly updated pre-screened directory of local companies in construction, fitting–out and furnishing trades in support of local procurement agreements.

2) MAIN REQUIREMENTS OF THE CODE

A) CONSTRUCTION.

We will request that the developers meet with London Borough of Camden's Labour Market & Economy Service's Local Procurement Team ("the Local Procurement Team") at least 1 month in advance of tendering contracts to clarify how the Local Procurement Code will work and the co-operation required from the developer, main contractor and subcontractors.

The Council will seek to ensure that the developer inserts the following clauses in the tender documentation issued to the main contractor:

2.1 Actions & Responsibilities of Main Contractor

1. The main contractor will provide the Local Procurement Team with information on the estimated timing of their procurement programme and a schedule of works packages to be let ("the Procurement Schedule")and to provide updates of the Procurement Schedule as and when it is updated or revised.

2. The main contractor will work with the Local Procurement Team to: include local companies on their tender lists wherever possible and to aim to achieve the procurement of construction contracts and goods and services from companies and organisations based in Camden towards a target of 10% of the total value of the construction contract.

3. The main contractor is required to provide regular monitoring information to the Local Procurement Team every six to eight weeks during the Construction Phase, via e-mail, phone, fax or liaison meeting providing details of:

   - all local companies which are sent a tender enquiry or a tender invitation detailing the date and the works package or items concerned;

- the outcome of all works packages tendered, where there is a local company on the tender list, stating whether the local company was unsuccessful, successful or declined to tender and the contract value in the case of a contract being awarded to a local company.

- All local wholesalers and building materials suppliers which are asked to provide prices and the value of any purchases of materials and other wholesaler supplies procured.

  (The Local Procurement Team can provide a pro forma local procurement log to assist in the monitoring process)

- Full contact details of all subcontractors appointed (whether local or from elsewhere)

4. The main contractor should include a written statement in the tender documentation sent out to sub contractors informing them of their Section 106 requirement obligations as set out in section 2.2 below and ensure cooperation is agreed as a prerequisite to accepting sub contract tenders

5. The main contractor should provide an opportunity for the Local Procurement Team to brief subcontractors on the requirements of the Local Procurement Code.

6. The main contractor will identify any actions that are required in order to overcome known barriers to Local Businesses to accessing their supply chain in respect of the Construction Phase.

2.2 Actions And Responsibilities of Sub-Contractors

1. All sub-contractors appointed will be required to work with the Local Procurement Team and to aim to achieve the procurement of construction goods and services from companies and organisations based in Camden towards a target of 10% of the total value of their construction sub-contract. (A regularly updated sub-directory of local suppliers will be supplied to subcontractors by the Local Procurement Team).

2. All subcontractors are required to provide regular monitoring information either to the main contractor or directly to the Local Procurement Team every six to eight weeks during the Construction Phase, via e-mail, phone, fax or liaison meeting providing details of :

- All local wholesalers and building materials suppliers which are asked to provide prices and the value of any subsequent purchases of materials and other wholesaler supplies procured.

- All local companies which are sent a tender enquiry or a tender invitation detailing the date and the works package concerned and the outcome of all sub-contracts tendered.

B. POST CONSTRUCTION: FITTING OUT BY TENANTS AND FACILITIES MANAGEMENT

Fitting out by tenants

Where the tenants of a development are responsible for fitting out the building(s), we will require the developers to inform them that they also fall under the provisions of this Agreement on local procurement and provide guidance in writing to their tenants setting out the above clauses contained in section 2 above, which will apply to them as the developer, their main contractor and subcontractors.

Facilities Management

The developer and their agents shall use reasonable endeavours to provide opportunities for local businesses to bid/tender for the provision of facilities management services and other post construction supply of goods and services.

The Council will assist the developer, occupier and their contractors in identifying suitable local companies to bid for facilities management contracts and to source local goods and services.

SCHEDULE 5
ENERGY EFFICIENCY AND RENEWABLE ENERGY PLAN

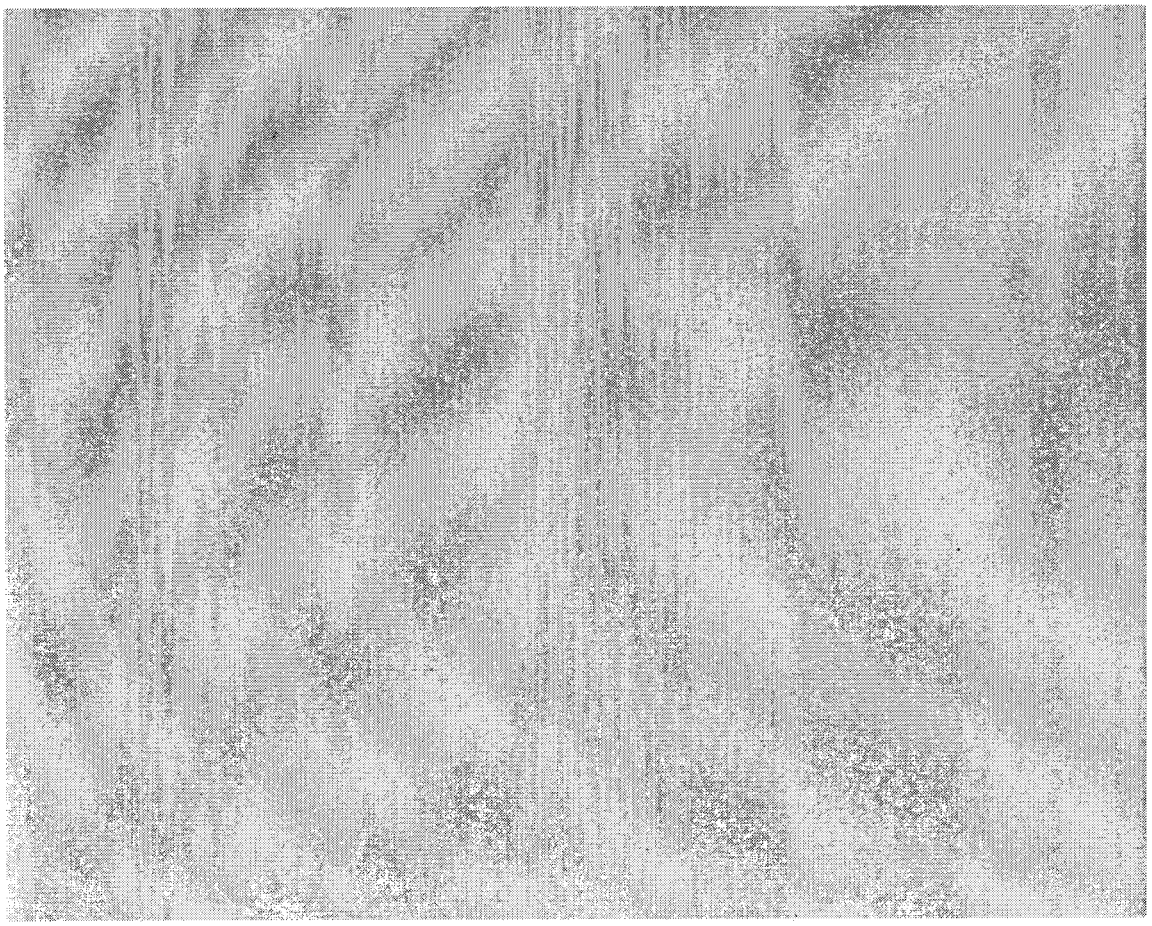
ARUP

uclh

Energy Strategy

UNIVERSITY COLLEGE LONDON HOSPITALS NHS TRUST (UCLH) PHASE 4 & PROTON BEAM THERAPY CANCER UNIT, GRAFTON WAY

05 December 2013

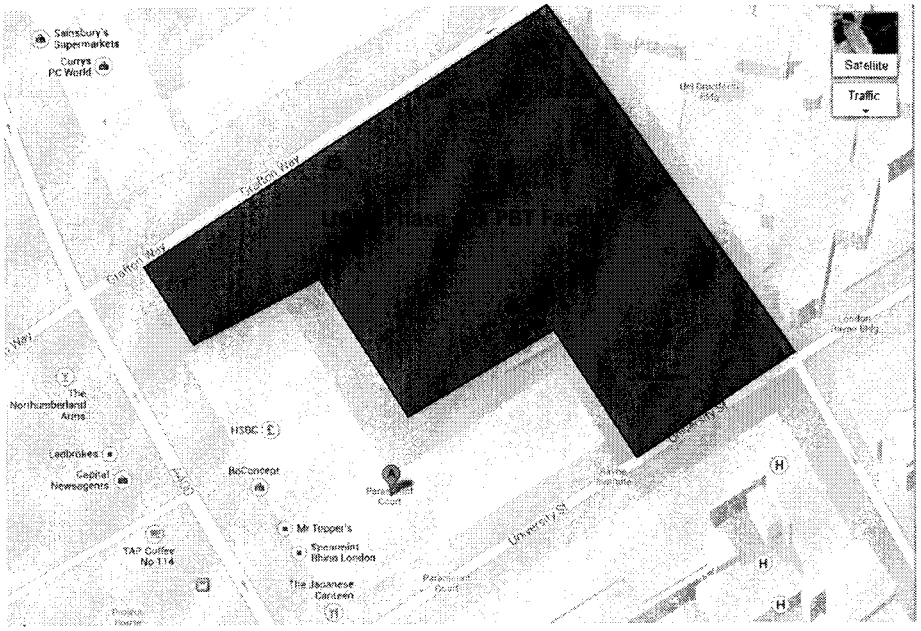


CONTENTS

1 Introduction

This report is produced as part of planning and BREEAM requirements to identify and quantify the technical and commercial opportunities for Low and Zero Carbon (LZC) Technologies for the UCLH Phase 4 & Proton Beam Therapy (PBT) facility for University College London Hospitals on the Odeon and Rosenheim sites.

The new facility is located in the main University College London Hospital campus on the corner of Huntley Street and Grafton Way occupying the existing Rosenheim Building and vacant Odeon site. The facility consists of roughly 30,000m^2 of treated floor area. The development includes a Proton Beam Therapy Unit below ground, theatres on B1 & inpatient beds on the above ground floors.



The vision for the project development is to create a world class, modern, safe and responsive health care environment which in turn will facilitate better clinical outcomes, an improved environment for staff, patients and visitors with clinical services that reflect UCLH as a world centre of excellence.

This report provides results of modelling undertaken, and assessment of the feasibility of Low and Zero Carbon technologies which could be used and their relative benefits. The report also assesses the relevant planning and statutory regulations that apply to this facility.

The targets that have been set for the new UCLH Phase 4 Facility are as follows:

- Compliance with Part L 2010 at As-Designed Stage (as Part L 2013 will not come into effect until April 2014)
- Target compliance with Part L 2013 ~9% better than 2010 at As-Built Stage
- BREEAM Excellent – 25% better than Part L 2010

In addition to these targets, the facility will be designed to strive towards the London Plan target:

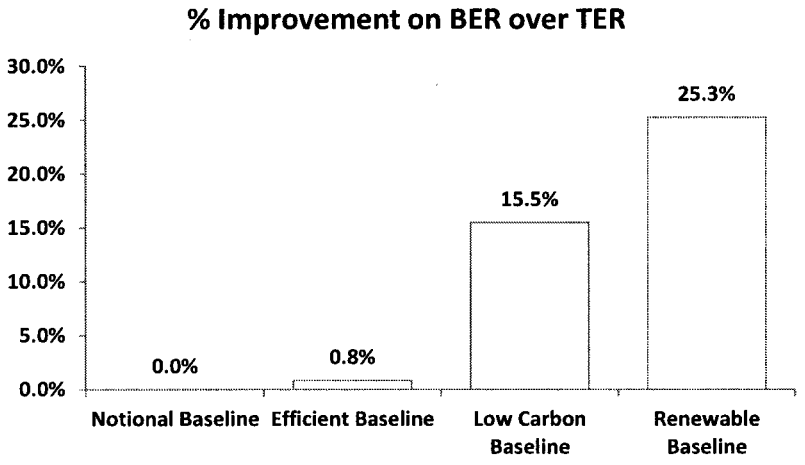
- London Plan – 40% better than Part L 2010
- London Plan – 20% carbon reduction from on-site renewables

However this report demonstrates that whilst the facility can achieve the 20% reduction through on site renewables, achieving 40% carbon improvement on Part L 2010 will be very difficult despite incorporating the following key technologies in order to minimise carbon emissions:

- Passive Measures – High Performance Fabric, Solar Shading
- Low Energy Design – Low Energy Lighting, Low Fan & Pumping Powers
- Low Carbon Design – Combined Heat & Power
- Renewable Design – Process Heat Recovery Heat Pump & Photovoltaic Panels

The report shows that with these key design features, the project should achieve:

Compliance with Part L 2010	✓
Future Compliance with Part L 2013	✓
BREEAM Excellent	✓
London Plan Renewables	✓ 20%
London Plan Carbon Reduction	X 25.3%



2 Context

The energy performance and carbon dioxide emission for the development is considered against national, regional and local planning guidance.

2.1 National Policy

Under the Kyoto Protocol, the UK aims to reduce a basket of greenhouse gases to 12.5% below 1990 levels by 2008-2012.

This reduction may be achieved through a combination of strategies including reducing the need to use energy, using it more efficiently and increasing the proportion of energy from renewable sources.

The Energy White Paper 2007 sets out the Government's aspiration to supply 20% of its electricity from renewables by 2020 and put the UK on a path to delivering CO_2 reductions of around 60% by 2050.

The Climate Change Bill passed into law in November 2008 puts in place a framework to achieve a mandatory 80% cut in the UK's carbon emissions by 2050 (compared to 1990 levels), with an intermediate target of between 26% and 32% by 2020.

In summary, the government's proposed policy involves 5 components:

1) Establishing an international framework to tackle climate change, including the stabilisation of atmospheric greenhouse gas concentrations and a stronger European Union Emissions Trading Scheme (EU ETS)
2) Providing legally binding carbon targets for the whole UK economy, reducing emissions through the implementation of the Climate Change Bill.
3) Making further progress in achieving fully competitive and transparent international markets, including further liberalisation of the European Union energy market.
4) Encouraging more energy saving through better information, incentives and regulation
5) Providing more support for low carbon technologies, including increased international and domestic public-private sector collaboration in the areas of research, development, demonstration and deployment – for example though the launch of the Energy Technologies Institute and the Environmental Transformation Fund.

The development of renewable energy resources on a commercial scale is a crucial element in meeting the UK Government's commitments on reducing emissions and combating climate change.

Given current renewable electricity production rates are around 3%, the scale of the challenge is clear. A 'step change' will be required if the targets are to be met, and this has been recognised by the Government in preparing:

Planning Policy Statement 22: Renewable Energy (PPS22)

The successful introduction of renewables in all parts of England will involve the installation of different kinds of schemes in different contexts, from rural areas to densely populated areas, market towns to suburban streets. Every local authority has something to offer in terms of renewable resources, and opportunities to contribute to meeting the targets and reducing overall demand for energy.

This document produced by the UK Government sets out the government's policies for renewable energy, which planning authorities should have regard to when preparing local development documents and when taking planning decisions.

2.2 The Building Regulations 2010 & 2013

The Building Regulations 2010 Approved Document L2A, 'Conservation of fuel and power in new buildings other than dwellings' came into force on 1st October 2010. This replaces the previous 2006 edition. New build projects must comply with the 2010 edition if 'major site works' commence after 1st October 2010.

Part-L2A 2010 introduced five criteria for demonstrating that a building complies with the Regulations.

- **Criterion 1** – Achieving the TER (Target Emission Rate)
- **Criterion 2** – Limit on design flexibility
- **Criterion 3** – Limiting effects of solar gains in summer
- **Criterion 4** – Building performance consistent with BER (Building Emission Rate)
- **Criterion 5** – Provisions for energy efficient operation

It is expected that compliance software will produce an output report that will assist BCBs (Building Control Bodies) to check that compliance has been achieved. In general, compliance involves demonstrating that:

1) The CO_2 performance target has been met
2) Elements of the design do not fall outside energy efficiency limits unless there are exceptional circumstances
3) The building will not suffer from excessive solar gain
4) The building 'as constructed' matches the design intent
5) Information is provided to enable the building to be operated efficiently

When carrying out compliance checks with Part-L 2010, energy and subsequent CO_2 emission from process-related activities can be excluded from the total when calculating the percentage reduction in CO_2 emissions, i.e. 'Regulated Energy' CO_2 emissions only.

As the scheme is to be submitted to planning and site work will most likely commence after the 6th April 2014, the scheme is likely to be assessed under Part-L 2013 at the as-built stage. However, as Part-L 2013 is not yet released it only be speculated at this stage that the overall general improvement target will roughly be around 9% lower than that of Part-L 2010.

2.3 London Plan 2011

The key policies regarding energy efficiency and renewable technologies in new developments are summarised below:

Policy 5.2 – Minimizing CO_2 Emissions

Policy 5.2 of the London Plan sets out the methodology and targets for the journey towards zero carbon for both domestic and non-domestic buildings. Development proposals should meet the fullest contribution to minimising CO_2 emissions in accordance with the following energy hierarchy:

- **Be Lean:** use less energy
- **Be Clean:** supply energy efficiently
- **Be Green:** use renewable energy

The CO_2 reduction targets are expressed as minimum improvements over a Target Emission Rate (TER) outlined in the national Building Regulations leading to zero carbon non-domestic buildings from 2019.

At present, the London Plan requires all non-residential developments to achieve an improvement of 25% over Building Regulation Part-L 2010. This is likely to be revised upward when Part-L 2013 comes into force; the release date is still to be confirmed.

Table 1: Part-L 2010 compliance requirement

Year	Improvement on 2010 Building Regulations	Improvement on 2010 Building Regulations
2010 – 2013	25 percent	25 percent (Code Level 4)
1st October 2013 – 2016	40 percent	40 percent
2016 - 2019	As per Building Regulation requirements	Zero Carbon (Code Level 5 & 6)
2019 – 2031	Zero Carbon	Zero Carbon (Code Level 5 & 6)

As a minimum, energy assessments should be carried out to demonstrate how the minimum targets for CO_2 emissions reductions are to be met, assessments should include:

a) Calculation of the energy demand and CO_2 emissions covered by the Building Regulations Part-L 2010 ('regulated' carbon emissions only) and, separately, the energy demand and CO_2 emissions from any other parts of the development, including plant or equipment, that are not covered by the Building Regulations ('un-regulated' carbon emission) at each stage of the energy hierarchy.

b) Proposals to reduce the calculated CO_2 emissions through the energy efficient design of the site, building and services

c) Proposals to further reduce the calculated CO_2 emissions through the use of onsite renewable energy technologies. All major development should seek 20% CO_2 reduction through the use of on-site renewable energy generation wherever feasible.

The CO_2 reduction targets should be met onsite. Where it is clearly demonstrated that the specific targets cannot be fully achieved onsite, any shortfall may be provided offsite or through a cash in lieu contribution to the relevant Borough to be ring fenced to secure delivery of CO_2 savings elsewhere.

London Plan Policy 5.6 – Decentralised Energy in Development Proposals

Development proposals should evaluate the feasibility of Combined Heat & Power (CHP) systems, and where a new CHP system is appropriate also examine opportunities to extend the system beyond the site boundary to adjacent sites.

Major development proposals should select energy systems in accordance with the following hierarchy:

1) Connection to existing heating or cooling networks
2) Site Wide CHP network
3) Communal heating and cooling

London Plan Policy 5.7 – Renewable Energy

All major development proposals will seek to reduce CO_2 emissions by at least 20% through the use of on-site renewable energy generation wherever feasible.

The use of a full range of renewable energy technologies is encouraged and should be incorporated wherever site conditions make them feasible and where they contribute to the highest overall and most cost effective CO_2 emissions savings.

London Plan Policy 5.8 – Overheating and Cooling

The Mayor seeks to reduce the impact of the urban heat island effect in London and encourages the design of places and spaces to avoid overheating and excessive heat generation, and to reduce overheating due to the impacts of climate change and urban heat island effect on an area wide basis.

Major development proposals should reduce potential overheating and reliance on air conditioning systems and demonstrate this in accordance with the following cooling hierarchy:

1) Minimise internal heat generation through energy efficient design
2) Reduce the amount of heat entering a building in summer through orientation, shading, albedo, fenestration, insulation and green roofs and walls
3) Manage the heat within the building through exposed internal thermal mass and high ceilings
4) Passive ventilation
5) Mechanical ventilation
6) Active cooling systems (ensuring they are the lowest carbon options)

London Plan Policy 5.3 – Sustainable Design and Construction

Policy 5.3 from the London Plan 11 sets out that mayor's development proposals could meet the minimum standards outlined in the mayor's supplementary planning guidance and this should be clearly demonstrated within a design and access statement. The standards include measures to achieve other policies in this Plan and the following sustainable design principles:

a) Minimum carbon dioxide emissions across the site, including the building and services (such as heating and cooling systems)
b) Avoiding internal overheating and contributing to the urban heat island effect
c) Efficient use of natural resources (including water), including making the most of natural systems both within and around buildings
d) Minimising pollution (including noise, air and urban run-off)

e) Minimising the generation of waste and maximising reuse or recycling

f) Avoiding impacts from natural hazards (including flooding)

g) Ensuring developments are comfortable and secure for users, including avoiding the creation of adverse local climatic conditions

h) Securing sustainable procurement of materials, using local supplies where feasible, and

i) Promoting and protecting biodiversity and green infrastructure.

2.4 London Borough of Camden Local Development Framework

Camden's Core Strategy sets out the key elements of the Council's planning vision and strategy for the borough. It covers the physical aspects of location and land use but also addresses other factors that make places attractive, sustainable and successful, such as social and economic matters.

Under Core Strategy Policy CS13 – Tackling climate change through promoting higher environmental standards and Development Policy DP22 – Promoting sustainable design and construction:

- The Council will expect developments to achieve a reduction in carbon emissions of 20% from on-site renewable energy generation (which can include sources of site-related decentralised renewable energy) unless it can be demonstrated that such provision is not feasible.
- The Council expects non-domestic developments of 500sqm of floorspace or above to achieve 'Very Good' in BREEAM assessments, with the aim of increasing the target to a rating of at least 'Excellent' in 2016, if feasible, and zero carbon from 2019.

The Council will require development to be resilient to climate change by ensuring schemes include appropriate climate change adaption measures, such as:

- Summer Shading and planting
- Limiting run-off
- Reducing water consumption
- Reducing air pollution
- Not locating vulnerable uses in basements in flood-prone areas.

2.5 'Excellent' rating under BREEAM New Construction 2011

It is agreed with UCLH that the development is set out to achieve BREEAM 'Excellent' rating.

The minimum requirements for 'Excellent' within the Energy Section are as follows:

- To minimise the Carbon Emissions associated with building operational energy consumption: 6 credits out of a total of 15 plus 4 innovation credits are required under *ENE1 – Reduction of CO_2 emissions.*
- To achieve minimum of 1 credit in order to comply with *ENE2 – Energy Monitoring* Criteria
- To achieve minimum of 1 credit in order to comply with *ENE4 – Low or Zero Carbon Technologies* Criteria

To achieve the 8 mandatory credits required for BREEAM 'Excellent' the new development must comply with the following:

1) As a minimum, achieve Energy Performance ratio for New Construction (EPRNC) of 0.55 in order to obtain 6 credits under ENE1.

2) An accessible Building Energy Management System (BEMS) or accessible sub-meters are provided covering the energy supply to all tenanted, or in the case of single occupancy buildings, relevant function areas or departments within the building/unit.

3) A feasibility study (this report) has been carried out by an energy specialist to establish the most appropriate local (on-site or near site) Low or Zero Carbon (LZC) energy source for the building / development. This study covers as a minimum:

   a) Energy generated from LZC energy source per year

   b) Life cycle cost of the potential specification in terms of carbon emission, accounting for payback

   c) Local planning criteria, including land use and noise

   d) Feasibility of exporting heat/electricity from the system

   e) Any available grants

   f) All technologies appropriate to the site and energy demand

   g) Reasons for excluding other technologies

   h) Where appropriate to the building type, connecting the proposed building to an existing local community CHP system or source of waste heat/power OR specifying a building/site CHP system or source of waste heat/power with the potential to export excess heat/power via a local community energy scheme.

4) A local LZC energy technology has been specified for the building/development in line with the recommendations of the above feasibility study

5) The feasibility study has been carried out at RIBA stage C (concept design) or equivalent procurement stage

OR

6) The organisation that occupies the building has in place a contract with an energy supplier to provide electricity to the accessed building/development from a 100% renewable energy source. This supply must be delivered by an accredited external renewable source. The contract must be valid for a minimum of 3 years from the date the assessed building becomes occupied.

Table 2: Criteria to achieve BREEAM credits

Criteria achieved above	Total Credits Awardable
1	6
1, 2	7
1, 2, 3 OR 4	8

For the purpose of assessing BREEAM, energy and subsequent CO_2 emissions from process-related activities can be excluded from the total when calculating the percentage reduction in CO_2 emissions.

3 Energy Hierarchy

The assessment of the development has been undertaken following the Mayor's Energy Hierarchy approach (London Plan 2011):

1) **Priority 1 – Energy Conservation & Energy Efficiency (Be Lean)**
2) **Priority 2 – Exploitation of Low Carbon Technologies (Be Clean)**
3) **Priority 3 – Exploitation of Renewables, Sustainable Sources of Energy (Be Green)**

The Energy Hierarchy offers an effective framework to guide energy policy and decision making. By prioritising demand-side activities to reduce wastage and improve efficiency, the hierarchy links closely to the principles of sustainable development and offers an integrated, easy to use approach to the management of energy demand and supply.

Priority 1 – Energy Conservation & Energy Efficiency (Be Lean)

The reduction or elimination of unnecessary energy use; Conservation is often achieved through behavioural changes such as switching appliances off when they are not being used, or the introduction of passive design features, an example of which would be to implement shading devices in order to reduce the need for cooling in summer etc.

Energy efficiency improvements are usually achieved through the application of engineering principles.

Priority 2 – Exploitation of low carbon technologies (Be Clean)

Finite natural resources such as oil, coal, gas and uranium provide the vast majority of global and UK energy supply. The current transport systems, buildings and power generation infrastructure have been built such that they are all largely dependent on the continued supply of these resources. Examples of low carbon technologies are Heat Pumps, Combined Heat & Power and District Heating/Cooling etc.

Priority 3 – Exploitation of Renewables, Sustainable Sources of Energy (Be Green)

Having taken all reasonable steps to minimise energy demand and improve efficiency, this next priority is to supply that demand from clean energy sources that are effectively infinite. Effective, sustainable energy provision, though, is not just about resource availability, it must also embrace wider issues such as affordability, societal acceptability and environmental impact.

4 Energy Consumption & CO_2 Emission Baseline

The baseline emission for the development has been estimated on a 'Whole Energy' approach following the recommendations of the London Plan. The baseline emissions therefore combine the regulated energy emission (i.e. those emissions covered by Building Regulation such as lighting, heating, cooling and ventilation energy use) and unregulated energy emissions (i.e. those that are not covered by Building Regulations such as computer use or energy use in process driven activities).

The Phase 4 facility will need to be designed to:

- Surpass the requirements of Part-L 2010 for compliance with the UK Building Regulation
- Achieve an EPR_{NC} rating of 0.55 to comply with ENE1 criteria for BREEAM 'Excellent' Rating.
- Reduce CO_2 emissions by at least 20% through the use of on-site renewable energy generation wherever feasible.

A preliminary Part-L thermal model for the development has been carried out. Full dynamic thermal analysis has been used in the process; the software used to carry out the simulation is EDSL TAS.

Calculations are based on first-principle models of heat transfer process and are driven by real weather data set. EDSL TAS is an accredited and approved software and can be used to demonstrate UK Building Regulation compliance and for producing Energy Performance Certificates.

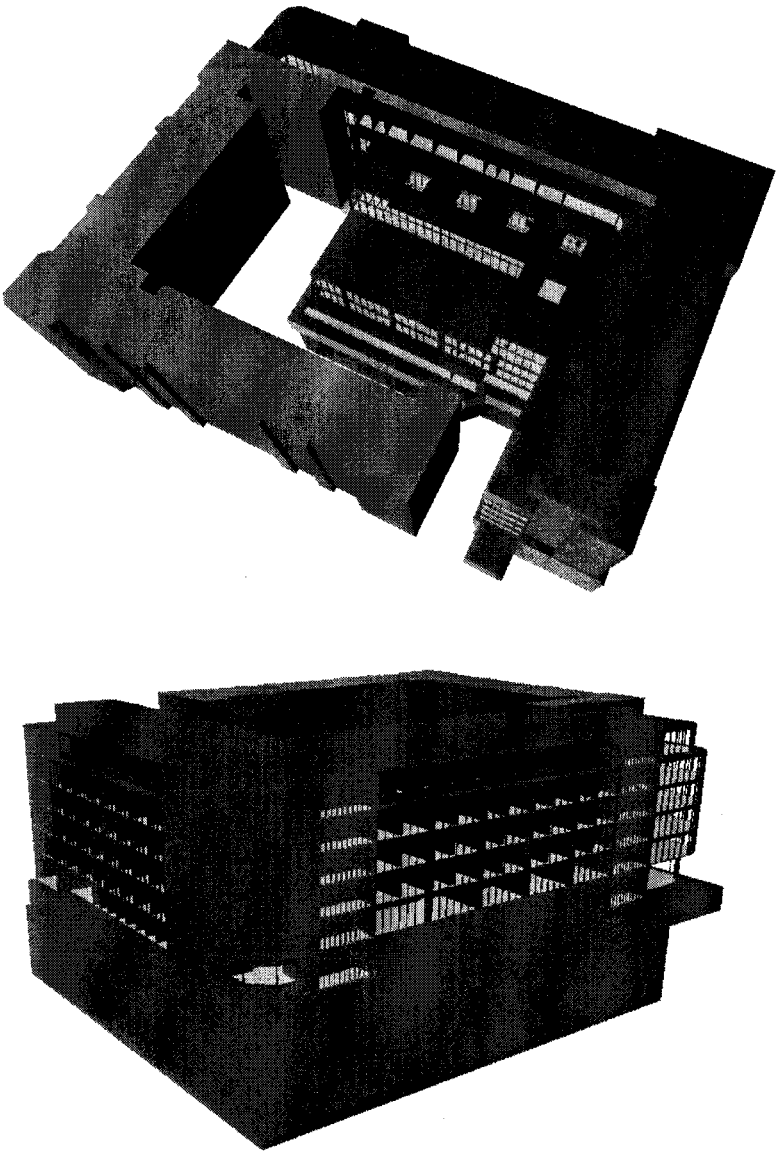


Figure 1: UCLH PBT Phase 4 facility EDSL TAS Model

4.1 Energy Conservation Measures (Base case)

According to the first stage of the Energy Hierarchy approach, the following principles should be adopted with the design of the development.

Optimising passive design is the most effective means, both in carbon and financial terms, of ensuring buildings are inherently low in energy usage.

There are a range of energy conservation measures that can be applied to the building as an integral part of the design process:

4.1.1 Thermal Envelope Performance

Ensuring U-value of the external surfaces (i.e. the walls, floors, roofs and glazing) of a building roughly 20% improvement over limiting targets set by Part-L2A 2010.

	Part-L2A Limiting factor	Notional Baseline U-values
External Walls	0.35	0.26
Basement Walls	0.35	0.35
Curtain Walls (Above ground facade)	2.2	1.8
Roofs	0.25	0.18
Ground Floor / Exposed Floor	0.25	0.22
Windows & Openings	2.2	1.80
Air Tightness	10 m3/h.m2 @ 50pa	10 m3/h.m2 @ 50pa

4.1.2 Daylighting

Effective use of day lighting can reduce the need for artificial lighting in the development. This is particularly appropriate because the building is generally occupied during the day when good levels of natural light are available. Daylighting is achieved through careful sitting of windows and other glazed elements. When considering the admission of daylight, it is important to bear in mind that solar overheating can be an unwanted consequential impact and external shading is often required to mitigate this.

To maximise the energy savings that good natural daylighting can provide it is important that it is complemented by a good performing lighting control system to allow artificial lighting to be dimmed or turned off when natural daylight levels are suitable.

4.1.3 Minimising Solar Gain

Passive solar control features such as brise soleil is to be employed on the glass façade throughout the building.

In additional, internal blinds are to be employed to further reduce the amount of solar penetration and to mitigate glare.

4.1.4 Reducing Artificial Lighting

Daylight linked and dimmable lighting control for perimeter zone together with presence detection control, low energy light fittings such as LEDs and Compact Fluorescent Lamps. Part-L2A 2010 requirement on average initial efficacy should be no less than 55 lamp lumens per circuit-watt.

4.1.5 Ventilation System

Healthcare buildings require high air volumes to ensure dispersal of odours and contaminants, as well as to provide sufficient air for process equipment such as the Proton Beam Generators.

General and specialist clinical areas can experience high heat gains from equipment and need large volumes of air to dissipate heat and meet the appropriate thermal criteria; as a result the most appropriate system for Healthcare buildings is Constant Air Volume (CAV) system.

Non-clinical areas and Ancillary areas would be provided with minimum fresh air for occupants, possibly to be served by local Fan Coil units or Active Chilled Beams for providing additional Heating/Cooling.

4.1.6 Establish Notional Baseline Emission

Following the Energy Hierarchy approach, the first step is to apply Energy Conservation measures. A 'Notional Baseline' emission for the development has been estimated.

The emissions have been broken down into 'Regulated Energy' and 'Whole Energy'. 'Regulated Energy' emissions are covered by Building Regulations (i.e. lighting, heating, cooling, ventilation energy etc) while 'Whole Energy' emissions include 'Regulated Energy' as well as unregulated energy emissions (i.e. those that are not covered by Building Regulation such as computer use or equipment process related energy use).

The table below summarises the Notional Baseline energy consumptions and CO_2 emissions for the facility:

Table 3: Notional Baseline energy consumption and CO_2 Emission

	Energy [MWh/annum]		CO_2 Emission [tCO_2/annum]
	Energy Demand	**Fuel Consumption**	**Total**
Space Heating	1,229	3,226	639
Domestic Hot Water	1,527		
Space Cooling	2,699	2,253	1,165
Lighting	527		
Auxiliary Energy	1,216		
Total (Regulated)	**7,199**	**5,478**	**1,803**
Un-Reg Equipment	3,301	3,301	1,707
Total (Whole Energy)	**10,500**	**8,779**	**3,510**

The preliminary thermal model predicts that, after 'Energy Conservation' measures have been undertaken, the 'Regulated Energy' and 'Whole Energy' emission baseline for the development are estimated to be 1,803tCO_2/annum and 3,510tCO_2/annum respectively.

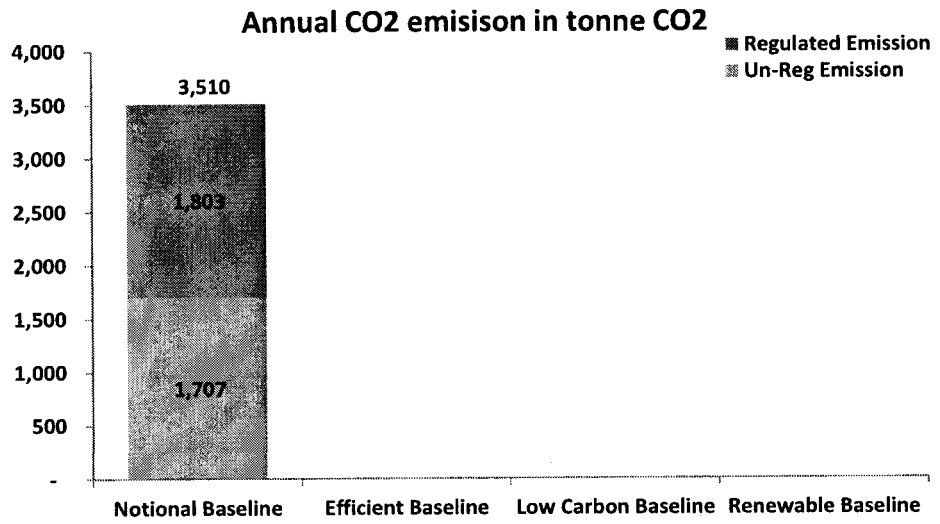


Figure 2: Notional Baseline for the UCLH PBT Phase 4 facility

Although the fabric standards and design limits on building services all comply with those required by Part-L2A 2010, The Notional Baseline is essentially the benchmark building generated by the modelling process with a Target Rating (TER) of 71.0.

This sets out the target in which the actual design of the UCLH PBT facility will have to outperform in order to comply with Part-L 2010.

4.2 Exploitation of Low Carbon Technologies (Be Clean)

The second stage of the Mayor's Energy Hierarchy approach focus on Energy Efficiency, to reduce energy losses and eliminate waste, the following measures have been undertaken.

4.2.1 Thermal Envelop Performance

Further improving the U-value of the external surfaces and where practical, it is proposed to increase insulation levels on the external walls, curtain walls and basement walls.

	Notional Baseline U-values	Efficient Baseline U-values
External Walls	0.26	0.26
Basement Walls	0.35	0.30
Curtain Walls (Above ground façade)	1.80	0.675 - 1.0max
Roofs	0.18	0.18
Ground Floor / Exposed Floor	0.22	0.22
Windows & Openings	1.80	1.0
Air Tightness	10 m3/h.m2 @ 50pa	7.0 m3/h.m2 @ 50pa

In addition to reducing the U-values of specific elements, careful detailed design of the facade will seek to ensure that thermal bridging will be minimised in the building.

4.2.2 Envelope Air Tightness

Air tightness is important to limit the amount of unwanted air infiltration into a building. When the external temperatures are significantly lower or higher than the desired internal temperatures, infiltration increases the heating or cooling load of the building. The facade will be specified to achieve very good air tightness levels.

Good practice construction techniques will be employed and air tightness tests will be made on completion to ensure that finished construction achieves the design values. An air tightness target has been set out to achieve:

7 m3/hr.m2 @ 50Pa

4.2.3 High Efficiency Cooling System

Turbocor Chillers are proposed for the development of UCLH Phase 4 PBT. Turbocor Chillers are a new type of "Ultra Efficient" chiller that delivers exceptional energy savings and reduction in CO_2 emissions, while ensuring high quality comfort for building occupants.

Turbocor Chillers are generally more compact and lightweight compared to screw and scroll chillers and they have excellent part load efficiency. The use of a variable speed drive enable the chiller output to be finely controlled between 15% and 100% of capacity, enable cooling to be matched precisely to load. Given that in the UK chillers operate at part load the bulk of the time, this helps significantly reduce energy consumption and ensure effective cooling.

4.2.4 Accredited Construction Details

Around 30% of the total heat lost through a building's fabric can be as a result of thermal bridging. And research shows that a building's annual CO_2 emissions can be reduced by up to 10% with better detailing and improved airtightness.

Traditional design and construction practice has concentrated on insulating exposed walls, floors and roofs of buildings in order to reduce their U-values. Until recently, there has been little attention given to the heat losses that occur at the junctions between construction elements and around openings.

Simple design principles can improve the thermal performance of key details such as lintels, wall to floor junctions and ceiling to gable wall junctions by over 85%. Furthermore, improving fabric thermal performance with better detailing and improved airtightness can increase opportunities for design flexibility.

4.2.5 Low Energy Lighting and Lighting Control

Proposed lighting power density is to be at least equal or better than **2.9W/m²/100lux**. Implementing intelligent switching of lighting system and other equipment. Automatic switch-off of light fittings achieved through occupancy sensors. Photocell sensors are to be employed to provide automatic daylight dimming functionality and automatic switch-off of desktop PCs and other equipment via software and smart socket outlets.

4.2.6 Heat Recovery Ventilation

As building efficiency is improved with insulation and weather-stripping, buildings are intentionally made more airtight and consequently less well ventilated. While opening a window does provide ventilation, the building's heat and humidity will then be lost in the winter and gained in the summer, both of which

are undesirable for the indoor climate and for energy efficiency, since the building's HVAC system must compensate, Heat Recovery Ventilation technology offers an optimal solution.

The efficient heat recovery efficiency in central ventilation plant is assumed to exhibit an **overall heat recovery efficiency of 60%.**

4.2.7 Minimising Specific Fan Power

Ducts shall be sized to minimise specific fan power. All non-process air handling systems are being sized to meet or exceed the limiting specific fan power requirements stated in Part-L 2010. The 2010 limiting SFP figure is 1.8W/l/s, although depending on the components within the air handling system- for example heat recovery devices and HEPA filters.

The UCLH PBT Phase 4 facility shall target overall supply & extract SFP figure of 2.0 – 2.1W/l/s at the Air Handling Units (AHUs) level. Energy efficient local fan coil units are to be selected to minimise fan power at local zone level.

4.2.8 Variable Flow for pumps & Fans

Most existing pumping systems requiring flow control make use of bypass lines, throttling valves, or pump speed adjustments. The most efficient of these is pump speed control. When a pump's speed is reduced, less energy is imparted to the fluid and less energy needs to be throttled or bypassed. Speed can be controlled in a number of ways, with the most popular type of variable speed drive (VSD) being the variable frequency drive (VFD)

The saving from Variable Speed Pumps may go well beyond energy, and may include improved performance, improved reliability and reduced life cycle cost.

All dwellings are to be fitted with controller, thermostat and thermostatic radiator valves (TRVs) to maintain room temperature at comfortable levels and minimise heating energy consumption when dwellings are vacant or unoccupied.

4.2.9 BEMS

Building (Energy) Management System is a central computer controlling, monitoring and optimising building services and systems such as heating, air-conditioning, lighting and security. To achieve BREEAM 'Excellent', the following major energy consuming systems (where present) are monitored using a BEMS on:

- Space Heating
- Domestic Hot Water
- Humidification/Dehumidification
- Cooling
- Fans (Major)
- Lighting
- Small Power
- Other major energy-consuming items where appropriate

The end energy consuming use is identifiable to the building user through labelling or data outputs.

4.2.10 Automatic Monitoring & Intelligent Controls

Installation of end use sub-meters and an automatic monitoring and targeting system has been shown to achieve significant operating energy savings. The system allows FM teams to pinpoint areas of excessive energy consumption and address the causes.

Night set-back will be employed as appropriate on the 24/7 ventilation systems to maintain containment but reduce energy usage, intelligent controls shall load match and load shed as appropriate to minimise energy use.

4.2.11 Establish Efficient Baseline

Following the Energy Hierarchy approach, by implementing 'Energy Conservation' & 'Energy Efficiency' measures, an Efficient Baseline CO_2 emission for the development has been estimated.

The table below summarises the Efficient Baseline energy consumption and CO_2 emissions for the new residential redevelopment:

Table 4: Efficient Baseline energy consumption and CO_2 emission

	Energy [MWh/annum]		CO_2 Emission [tCO_2/annum]
	Energy Demand	**Fuel Consumption**	**Total**
Space Heating	1,219	3,198	633
Domestic Hot Water	1,514		
Space Cooling	2,677	2,234	1,155
Lighting	523		
Auxiliary Energy	1,206		
Total (Regulated)	**7,138**	**5,432**	**1,788**
Un-Reg Equipment	3,301	3,301	1,707
Total (Whole Energy)	**10,439**	**8,733**	**3,495**

The preliminary thermal model predicts that, after 'Energy Efficiency' measures have been undertaken, the 'Regulated Energy' and 'Whole Energy' emission baseline for the development are estimated to be 1,788tCO_2/annum and 3,495tCO_2/annum respectively. A total 'Whole Energy' CO_2 reduction of 0.43% is achievable from the Notional Baseline.

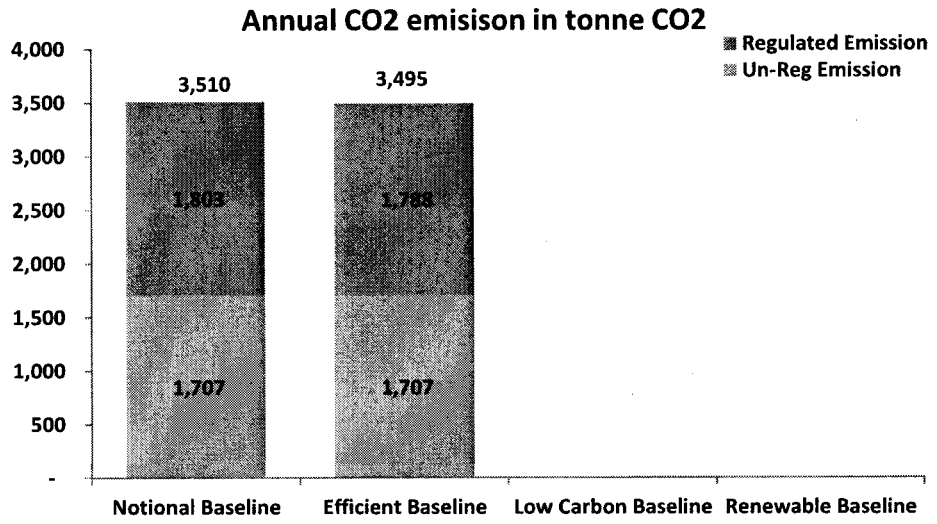


Figure 3: Efficient Baseline for the UCLH PBT Phase 4 facility

Table 5: Efficient Baseline Part-L Score and EPC Rating

	Building Emission Rate (BER)	Target Emission Rate (TER)	% Improvement Factor	EPC Rating
Energy Efficient Baseline	70.4	71	0.8%	66

Due to 'Energy Conservation' and 'Energy Efficiency' measures, The Efficient Baseline surpasses Part-L2A 2010 by 0.8% with a BER of 70.4 and Target Rating of 71.

An EPC Asset rating of 66 has been achieved which puts the building in band C on the Energy Performance Certificate.

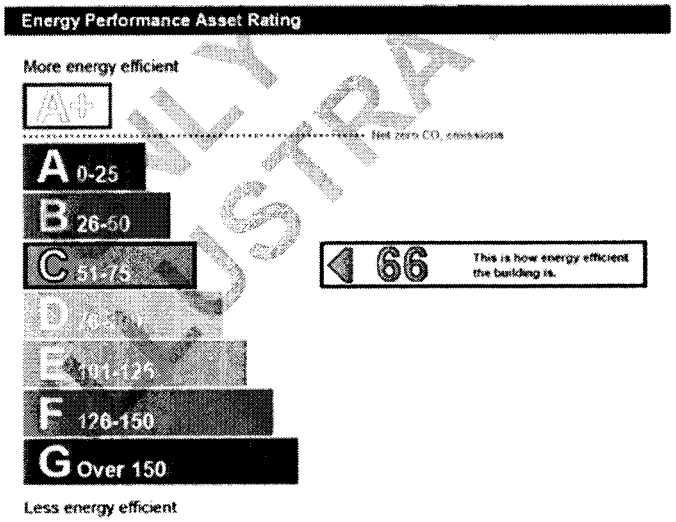


Figure 4: Efficient Baseline EPC Rating

4.3 Exploitation of Low Carbon Technologies (Be Clean)

The successful integration of low carbon technologies with buildings depends on a number of technical, economic and social factors.

4.3.1 Combined Heat & Power

CHP plants, also known as cogeneration, use conventional stationary internal combustion engines or turbines to generate both electricity and heat.

A generator is coupled directly to the output shaft of the engine in order to generate electricity. Heat is recovered from the engine via the water jacket, and from the exhaust gas. Assuming the CHP plant is well-designed and as such will be able to utilise large proportions of waste heat on an annual basis, this leads to an overall increase in the CHP plant efficiency to figures significantly greater than those of a conventional internal combustion engine, and is the basic advantage of a CHP plant.

Up to a peak electrical output of around 5MW, CHP plants are generally gas-fired, using conventional spark ignition engines.

Although they can provide energy with very high efficiency, CHP plants rely on matched electrical and heat demands. If these do not follow a similar trend over the course of the day, and throughout the year, then the CHP plant may frequently be generating large proportions of heat when it is not required. If there is no demand then this heat is essentially wasted, or 'dumped'. This is a key factor which must be considered, as dumping heat will reduce the seasonal efficiency of a CHP system and in turn will reduce the reductions in carbon emissions that are achieved.

In addition, CHP plants are typically only economically feasible if they operate for at least 3,000 hours per year. To ensure steady operation of the CHP plant, and to prevent heat being dumped, it is recommended that CHP plants are designed to meet the building's base heating demand, exporting electricity to the grid when electrical demand is lower than the CHP electrical output.

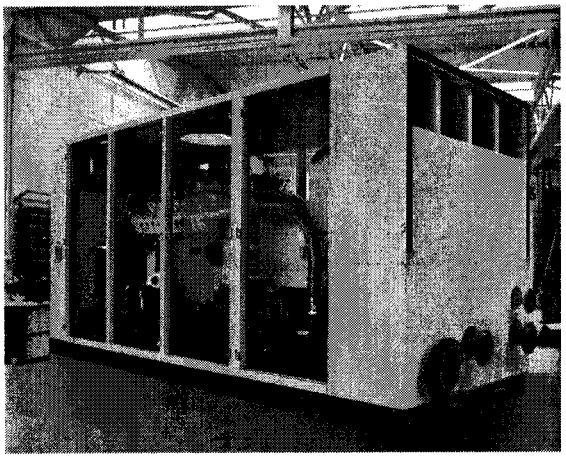


Figure 5: Example CHP Engine

Packaged CHP engines usually come with a maintenance contract, where the heat output of the CHP engine is likely to be monitored and managed so that heat dumping is minimised throughout the year.

Preliminary calculations suggest that a CHP engine of around 110kW(e) is appropriate for the PBT facility (exact size of engine to be confirmed). The CHP engine overall heat efficiency would be around 56% and electrical efficiency would be close to 34% (on LHV fuel input).

The CHP engine would mainly be operating at full output 24 hours a day, 5 to 6 days a week depending on base load demand. It is expected to run in excess of 6,000 hours a year.

4.3.2 Low Carbon Technology Contribution

Follow the Energy Hierarchy approach to apply Low Carbon Technology in the form of a CHP plant, a Low Carbon Baseline CO_2 emission for the facility has been estimated.

The table below summarises the contribution of the site heating network by the CHP engine to the reduction of CO_2 emission for the UCLH PBT Phase 4 facility.

Table 6: Low Carbon Baseline energy consumption and CO_2 emission

	Energy [MWh/annum]		CO_2 Emission [tCO_2/annum]
	Energy Demand	**Fuel Consumption**	**Total**
Space Heating	1,219	4,465	884
Domestic Hot Water	1,514		
Space Cooling	2,665	2,236	1,156
Lighting	523		
Auxiliary Energy	1,210		
CHP Electricity Generation	-	-1,045	-553
Total (Regulated)	7,131	5,656	1,487
Un-Reg Equipment	3,301	3,301	1,707
Total (Whole Energy)	10,432	8,957	3,194

The energy and CO_2 model predict that, the 'Regulated Energy' and 'Whole Energy' emission baseline for the Low Carbon Baseline is estimated to be 1,487 tCO_2/annum and 3,194tCO_2/annum respectively. A total 'Whole Energy' CO_2 reduction of 9% is achievable from the Notional Baseline.

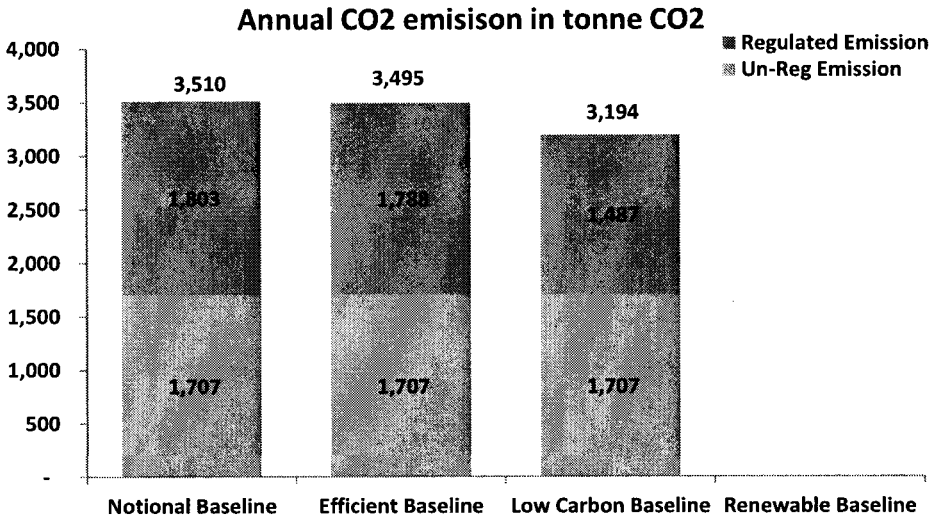


Figure 6: Low Carbon Baseline for the UCLH PBT Phase 4 facility

Subsequent to the implementation of the CHP engine, the Target Emission Rate (TER) has dropped from 71 down to 70.4, with a new Building Emission Rate (BER) figure of 59.5 achievable. At this stage, the UCLH PBT facility would surpasses Part-L 2010 target by 15.5%

Table 7: Low Carbon Baseline (CHP) Part-L Score and EPC Rating

	Building Emission Rate (BER)	Target Emission Rate (TER)	% Improvement Factor	EPC Rating
Low Carbon Baseline (CHP only)	59.5	70.4	15.5%	55

An EPC Asset Rating of 55 has been achieved which puts the building in band C on the Energy Performance Certificate (EPC):

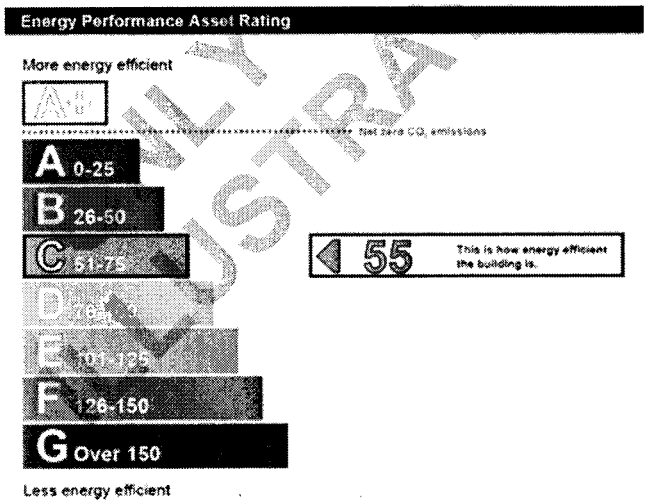


Figure 7: 'Final Baseline' EPC Rating

4.3.3 Decentralised Heating, Cooling and Power

The most common form of local area energy network is community or district heating. This is where space heating and hot water is delivered to multiple occupants from a local plant via a network of insulated pipes buried in the ground. The pipe network can be installed at the same time as other services (water, drainage and other below ground services) to minimise costs in new development.

District heating can also be combined with electricity production if a CHP plant is used, leading to the production and delivery of more than one service and associated prime energy efficiency gains. This uses the inevitable waste heat from the electricity generation process to heat buildings, rather than requiring additional gas, oil or electricity to generate that heat. The CHP unit can be linked to buildings by a local district heat distribution network. The electricity produced could be exported to the national grid or transported to other users over the local electricity distribution network or over a new, community owned or part owned network.

Connecting to a local area energy network is also preferable to the London Borough of Camden, eligibility of a scheme to connect into a heat network are to be assessed as part of planning requirement. This forms part of GLA's Energy Hierarchy of 'Lean', 'Clean' and 'Green'. The 'Clean' requirements suggests forming or making future provision for connection into a local district heat network or CHP network, or if not suitable, install a local standalone CHP system.

4.3.3.1 Networks in Central London

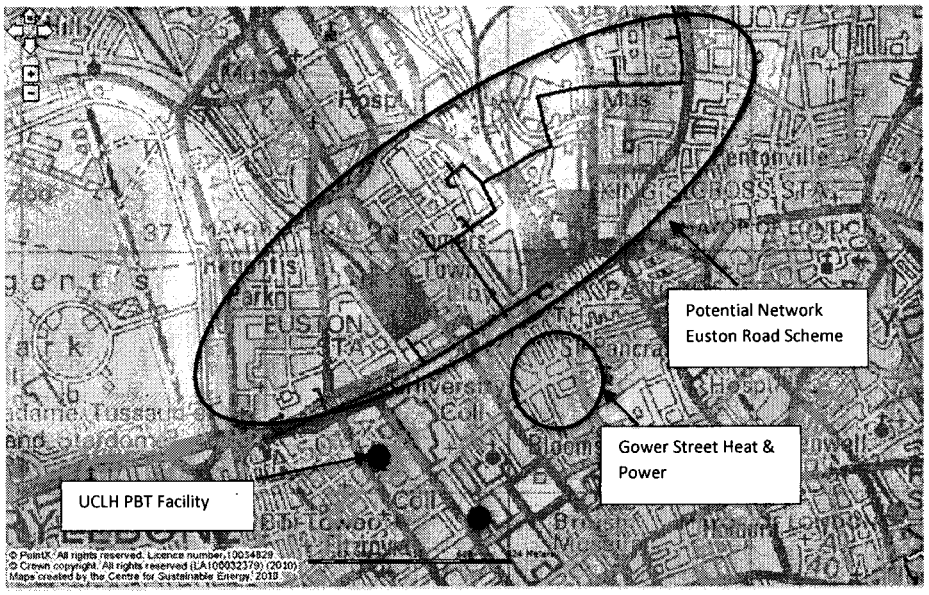
One of the Mayor's top priorities for reducing London's CO2 emissions is to reduce the capital's reliance on centralised power stations. This means increasing the use of local, low-carbon energy supplies through decentralised energy systems.

The London Development Agency has developed a Heat Map of London which shows the current and proposed local energy area networks in Central London.

Currently, known networks in the local area are:

Gower Street Heat and Power – owned by UCL. This scheme covers large areas within Bloomsbury to the east of Tottenham Court Road.

Euston Road Scheme – proposed scheme that will have its central plant located in Somerstown near King's Cross. This scheme has not been installed yet.



Gower Street Heat & Power

Medium Temperature Hot Water (MTHW), Steam and 11,000V distribution systems, 2x15MW CAT 3516 gas-fired CHP engine generators and back-up MTHW and steam boilers in 4 boiler houses are located around the campus.

The current UCLH Phase 3 Cancer Centre on Huntley Street is connected into this system using steam as a primary heat source. There are plans to upgrade the MTHW plant within this scheme to reduce the carbon intensity so the steam can be phased out. The UCLH design includes future flexibility for connecting into the MTHW system once the MTHW carbon intensity has been improved.

However it is not proposed to connect to the Gower Street Heat & Power scheme for the Phase 4 & PBT scheme due to the following reasons:

- Due to the clinical nature of this high profile facility, the Trust cannot accept any reduction in resilience of supply. This new facility will include a large number of operating theatres, immuno-suppressed patients and cutting edge treatment equipment so would not be able to accept a loss of heating supply from a system that is not under the hospital's control. There have been some interruptions to the heating supply to the Phase 3 Cancer Centre which supports this concern.
- It has been advised that there is insufficient capacity within the existing district heating plant

Euston Road Scheme

The London Development Agency state:

> *...There is a proposal for an area wide district heating scheme to supply low carbon heat to new and existing buildings in the immediate vicinity of Euston Road. This scheme could interconnect existing Local Authority community heating schemes with existing CHP schemes serving University of London campuses and with new centralised low carbon schemes planned for Kings Cross and Euston Stations. The analysis of the potential for this larger scheme to deliver marginal CO2 savings at low cost will determine whether the scheme goes ahead. The area under consideration extends from Regent's Park to Caledonian Road with the 'core' of the scheme between Kings Cross and Euston Station. The proposal has been prompted by the planned developments around these two major* transport *interchanges. But there is clearly*

potential to supply low carbon heat to other major developments planned in the area and to existing buildings.

Barriers to this scheme are:

- The system is not yet operational and may not even go ahead
- The costs are predicted to be prohibitive
- Currently there is no data on the carbon factors associated with the heat supply hence uncertainty on Phase 4 PBT facility's renewable credentials.

4.3.3.2 District Heat Network conclusion

Due to the reasons outlined in the section above, it is recommended that the UCLH Phase 4 PBT facility is not feasible to connect to a decentralised system.

However, the facility will include the ability to connect into a decentralised heating network in future should further schemes become viable.

4.4 Exploitation of renewable, sustainable resources (Be Green)

The successful integration of renewable energy technologies with buildings depends on a number of technical, economic and social factors. The report to follow by ARUP titled 'LZC Technology Feasibility Study' investigated the feasibility of each renewable energy technology and for each; a qualitative view of the feasibility was taken.

Some technologies are ruled out based on overriding factors which make them inherently unfeasible, such as lack of particular renewable source on, or near to the site, or issues with buildability etc.

4.4.1 Viable Technology – Heat pump waste heat recovery

A heat pump is a refrigerant based system which uses a medium such as air, water, or the ground as an energy source for heating (or/and cooling). In many instances, they are considered a 'Low Carbon' technology, as the heat supplied to the buildings comes from a renewable source and not from combustion of non-renewable energy sources such as gas or oil. However, this heat is only being 'moved' from one space (outdoor) to another (indoor) and to do so requires a compressor in the refrigerant circuit, which consumes electricity, and therefore leads to carbon emission based on the CO_2 emission factor of the electricity supplied.

Fluid-Fluid Heat Pumps for Waste heat recovery

Low temperature heat contains very little capacity to do work (Exergy), so the heat is qualified as waste heat and rejected to the environment.

The Proton Beam generators are expected to have an estimated cooling load of 1MW, and this cooling load, in the form of low temperature heat can potentially be recovered through a Fluid-Fluid heat pump.

This low temperature waste heat can be reclaimed through a heat pump to supplement space heating or for pre-heating applications. It is estimated that such a system can exhibit a high overall Coefficient of Performance (CoP) figure taking into account of the fact that energy is required to drive the Chillers to reject the waste heat in the first place.

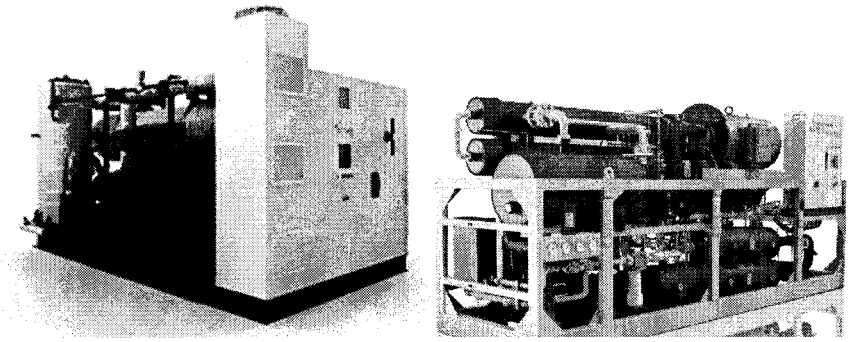


Figure 8: Typical Fluid-Fluid Heat pump

An overall Coefficient of Performance figure (CoP) of 24.8 has been approximated for heat pump operation. It is estimated that such a system can exhibit such a high overall CoP figure by taking into account of the fact that energy is required to drive the chillers to reject the waste heat in the first place. Refer to Appendix B for detailed calculation method.

4.4.2 Heat pump waste heat recovery contribution

Following the Energy Hierarchy approach, subsequent to the application of 'Energy Conservation' & 'Efficiency measures', CHP plant as well as heat pump to reclaim waste heat, a Renewables Baseline for the UCLH PBT facility has been estimated.

Table 8: Energy consumption and CO_2 emission with CHP & Heat Pump Waste Heat Recovery

	Energy [MWh/annum]		CO2 Emission [tCO2/annum]
	Energy Demand	**Fuel Consumption**	**Total**
Space Heating (Heat Pump)	1,219	3,435	692
Domestic Hot Water	1,514		
Space Cooling	2,665	2,236	1,156
Lighting	523		
Auxiliary Energy	1,210		
CHP Electricity Generation	-	-1,045	-553
Total (Regulated)	7,131	4,625	1,296
Un-Reg Equipment	3,301	3,301	1,707
Total (Whole Energy)	10,432	7,926	3,002

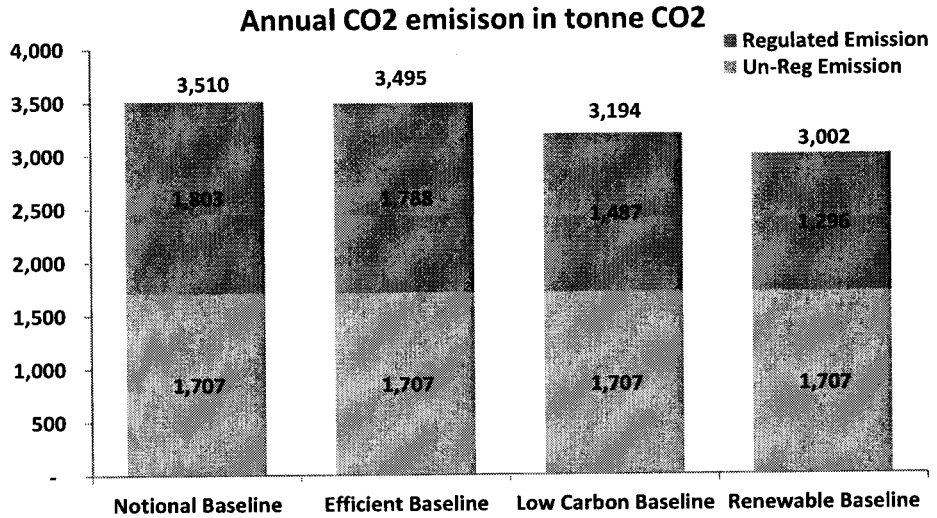


Figure 9: Renewable Baseline for UCLH PBT Phase 4 facility (Heat Pump)

The energy and CO_2 model predict that, by applying a heat pump to recover waste heat, the 'Regulated Energy' and 'Whole Energy' emission baseline for the development are estimated to be 1,296 tCO_2/annum and 3,002tCO_2/annum respectively. A total 'Whole Energy' CO_2 reduction of 14.5% is achievable from the Notional Baseline.

Table 9: 'Renewables Baseline' (CHP & Heat pump) Part-L Score and EPC Rating

	Building Emission Rate (BER)	Target Emission Rate (TER)	% Improvement Factor	EPC Rating
Renewables Baseline 1	52.1	69.3	24.8%	48

Subsequent to the implementation of Heat Pump Waste Heat Recovery, the TER has dropped from 70.4 down to 69.3, and with a new BER figure of 52.1. Therefore, at this stage, the UCLH PBT facility is expected surpasses Part-L 2010 target by 24.8%

An EPC Asset rating of 48 has been achieved which puts the building in band B on the Energy Performance Certificate (EPC)

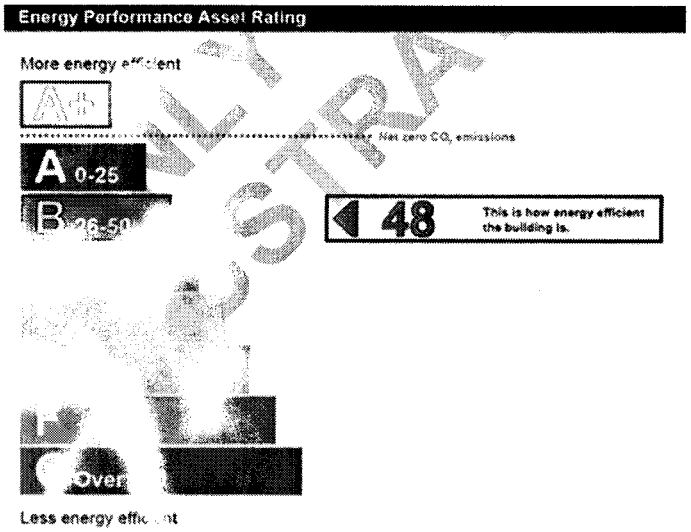


Figure 10: 'Renewables Baseline' EPC Rating (Heat pump)

4.4.3 Viable Renewable energy Technology – Photovoltaics

Photovoltaic (PV) systems work by converting solar energy directly into electricity. PV panels generate DC (Direct Current) electricity and are arranged in modules that include inverters to convert electricity into AC (Alternating Current) that can be used by the building systems. The panels should be mounted in a location that receives good access to the sun and is not overshadowed by surrounding parts of the building, adjacent buildings or other PV Panels. As such, they are typically either installed on the roof or integrated into the building facade.

PV panels can also be installed at ground level if space is available, but will be more susceptible to reduced output due to overshadowing, and will also be a greater risk of damage due to increased activity at ground level.

PV panels can generate electricity by either direct or diffuse radiation (i.e. sunlight that has been scattered/reflected by the atmosphere or surrounding objects). The amount of power that can be generated varies depending on a number of factors; include type of cell, orientation, sunlight conditions, etc. Typically, peak outputs in the UK may be achieved by panels which are orientated around 30 degrees above the horizontal southerly direction. Alternate orientations are possible, but relative output of the PV panels will decrease.

PV panels are proven technology, are silent in operation (do not cause any noise pollution) and do not require frequent access or maintenance. However they are still a relatively expensive renewable technology.

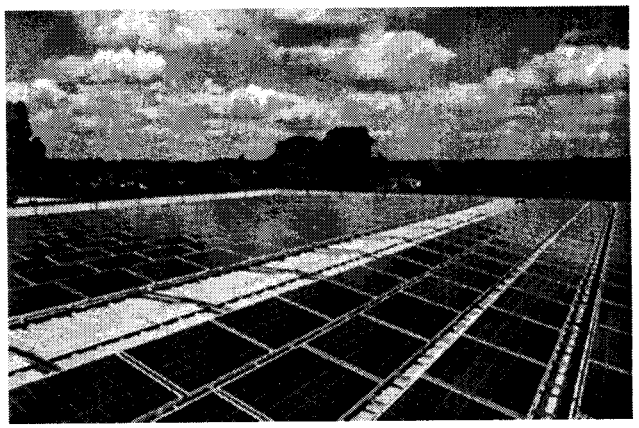
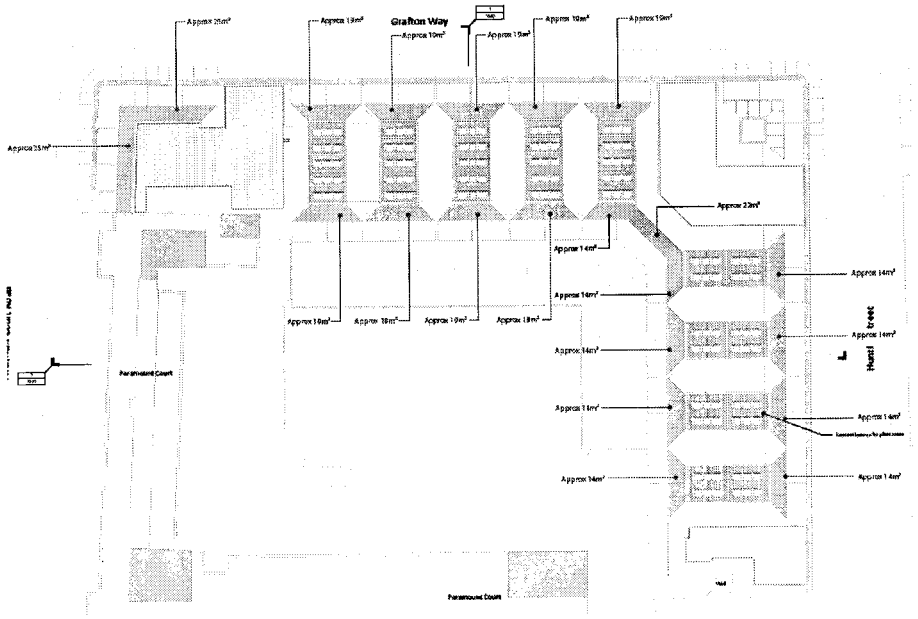


Figure 11: Example of PV Panels flat roof installation, taken from SolarCentury website

Indicative roof layout drawings suggest that roughly 121m^2 of roof space is available for Photovoltaic panels to be mounted, given the information, it is estimated that roughly 97 no. of Solar Century 185Wp panels can be fitted. Annual solar irradiation data for London has been used to determine the annual electricity that can be generated, based on this data with an efficiency figure of 14.7%, this would be sufficient to output 14MWh of on-site generated electricity per annum, which equates to a CO_2 emission offset of around 7tCO_2/annum.



4.4.4 Photovoltaic Contribution

Following the Energy Hierarchy approach, subsequent to the application of Energy Conservation & Efficiency measures, Low Carbon Technology in the form of an Energy Centre with CHP plant, and Renewable Energy Technology in the form of PV Panels, a Renewables Baseline for the UCLH development has been estimated.

Table 10: Energy consumption and CO_2 emission with CHP, Heat pump & PVs

	Energy [MWh/annum]		CO_2 Emission [tCO_2/annum]
	Energy Demand	**Fuel Consumption**	**Total**
Space Heating	1,219	3,435	692
Domestic Hot Water	1,514		
Space Cooling	2,665	2,236	1,156
Lighting	523		
Auxiliary Energy	1,210		
CHP Electricity Generation	-	-1,045	-553
Photovoltaics	-	-14	-7
Total (Regulated)	7,131	4,612	1,288
Un-Reg Equipment	3,301	3,301	1,831
Total (Whole Energy)	10,432	7,913	2,995

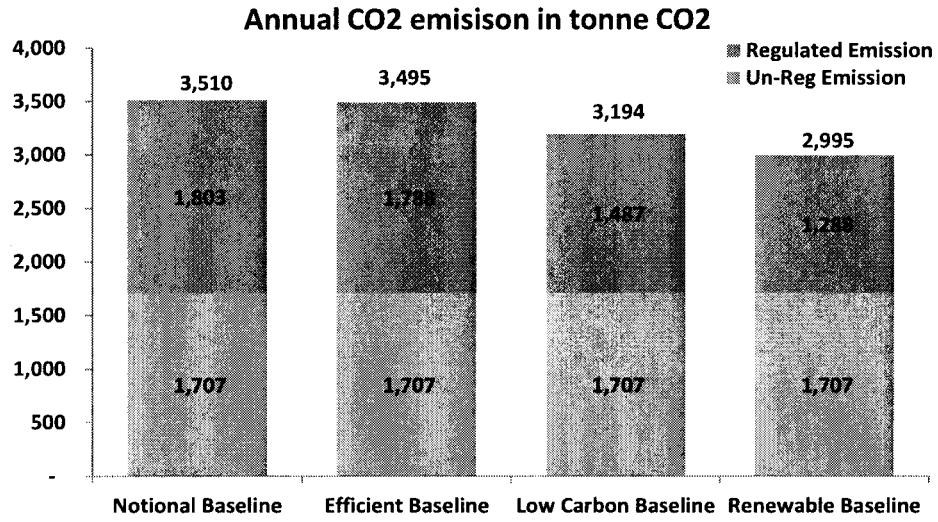


Figure 12: Renewable Baseline for UCLH PBT Phase 4 facility (Heat Pumps & PVs)

The energy and CO_2 model predict that, with a CHP plant, Heat pump waste heat recovery and finally, photovoltaic panels added, the 'Regulated Energy' and 'Whole Energy' emission baseline for the development are estimated to be 1,288 tCO_2/annum and 2,995tCO_2/annum respectively. A total 'Whole Energy' CO_2 reduction of 14.7% is achievable from the Notional Baseline.

Table 11: 'Renewables Baseline' (CHP, Heat pump & PVs) Part-L Score and EPC Rating

	Building Emission Rate (BER)	Target Emission Rate (TER)	% Improvement Factor	EPC Rating
Renewables Baseline 2	51.8	69.3	25.3	48

The final renewable baseline is expected to be sufficient in achieving BREEAM Excellent with a 25.3% improvement factor of BER over TER and an EPC rating of 48.

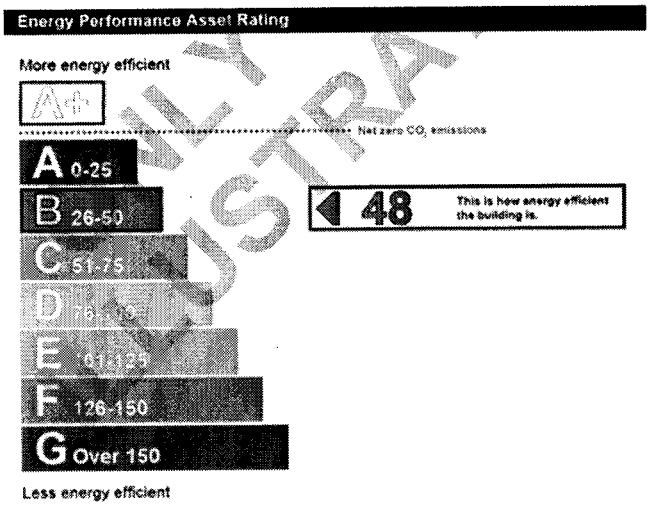


Figure 13: 'Renewables Baseline' EPC Rating (Heat Pump & PVs)

A preliminary assessment using indicative scoring & reporting tool from BRE shows that with CHP plant, heat pump waste heat recovery and Photovoltaic panels added, a total of 10 credits are achievable under BREEAM ENE01 category with EPR_{NC} rating of 0.6071, which meets the BREEAM mandatory requirement to award 'Excellent' Rating under the ENE01 category.

BREEAM 2011 New Construction Assessment Report: Assessment Issue Scoring BREEAM

Warning: All Mandatory fields in the assessment details worksheet must be completed/defined to reveal the applicable assessment issues.

Man	H&W	Energy	Transport	Water	Materials	Waste	LU&E	Pollution	Innovation

Ene01 Calculator and Key Performance Indicators			Shell & Core option?
Building floor area	24791	m2	N/A
Notional building energy demand	582.34	MJ/m2/annum	
Actual building energy demand	563.98	MJ/m2/annum	
Notional building energy consumption	412.13	kWh/m2/yr	
Actual building energy consumption	307.01	kWh/m2/yr	
Target Emission Rate (TER)	69.30	kgCO2/m2/yr	
Building Emission Rate (BER)	51.80	kgCO2/m2/yr	
Building Emission Rate improvement over TER	25.25%		
Demand Energy Performance Ratio (EPR)	0.0406		
Consumption Energy Performance Ratio (EPR)	0.3722		
CO_2 Energy Performance Ratio (EPR)	0.1942		
Overall Building Energy Performance Ratio (EPR_{OC})	0.6071		

Have the values entered above for the non-domestic building been verified using BREEAM's Ene01 Compliance Checker website?	Yes
Equivalent % of the building's 'regulated' energy consumption generated by carbon neutral sources and used to meet energy demand from 'unregulated' building systems or processes?	
Is the building designed to be 'carbon negative'?	
If the building is defined as 'carbon negative' what is the total (modelled) renewable/carbon neutral energy generated and exported	

Total BREEAM credits achieved	10
Total contribution to overall building score	6.55%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	Excellent level

Figure 14: BREEAM credits awardable under ENE1

The final 'Regulated Energy' emission figure of 1,288tCO_2/annum is approximately 27.95% reduction from the Efficient Baseline figure of 1,788tCO_2/annum, which would be sufficient to meet the London Plan requirement of 20% of the site energy demand by on-site renewable or low carbon technology.

5 Summary

An assessment has been undertaken following the methodology set out in Part-L 2010 to estimate the baseline regulated carbon emission for UCLH PBT Phase 4 facility.

The Notional Baseline, based on the 2010 Target Emission Rate (TER) of the Notional Building generated via the compliance process, has incorporated energy conservation measures in the form of fabric performance improvements, passive solar measures and efficient lighting etc. It is estimated to have a 'Whole Energy' CO_2 emission of 3,510tCO_2/annum.

The implementation of Energy Efficiency measures in the form of further fabric performance improvements, energy efficient building services and intelligent monitoring & controls etc. can result in a 0.43% reduction in 'Whole Energy' CO_2 emission, from 3,510tCO_2/annum down to 3,495tCO_2/annum.

A preliminary assessment indicates that a 110kW(e) CHP engine should be sufficient to cover the base load of the Phase 4 PBT facility. The District Heat network connection is determined to be unfeasible due to the risk to resilience of supply with the Gower Street Heat and Power scheme and cost prohibition with other schemes. Should a suitable, resilient, local CHP/district heating network be developed in the future, the system will be designed to reconfigure the PBT plant to connect into the wider network.

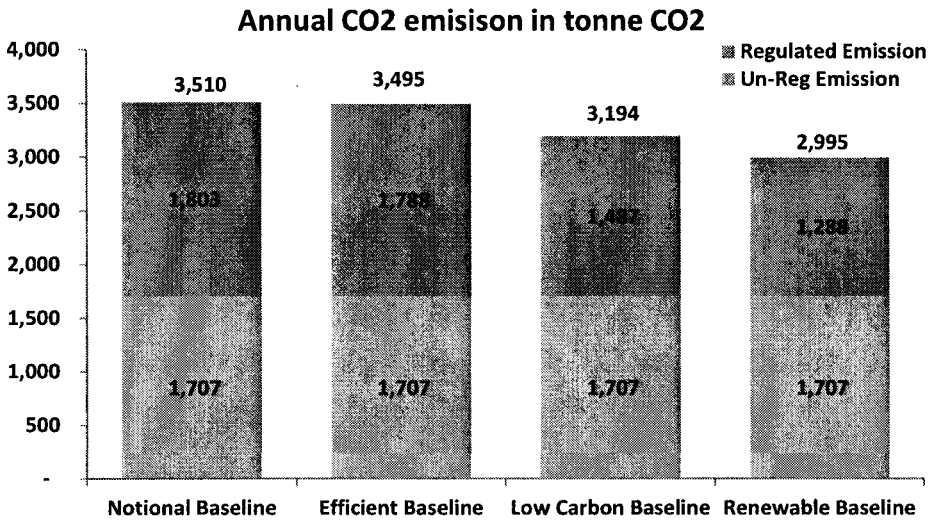
The incorporation of a CHP engine reduces the 'Whole Energy' CO_2 emission further from 3,495tCO_2/annum down to 3,194tCO_2/annum, a total reduction of 9% from the Notional Baseline.

In addition, a Fluid-Fluid Heat Pump for waste heat recovery is also proposed for the Phase 4 PBT facility. The Proton Beam generators are expected to have an estimated constant cooling load of around 1MW, this low temperature waste heat can be reclaimed through a heat pump to supplement space heating or for pre-heating application. It is estimated that such a system can exhibit a high overall CoP figure taking into account of the fact that energy is required to drive the Chillers to reject the waste heat in the first place.

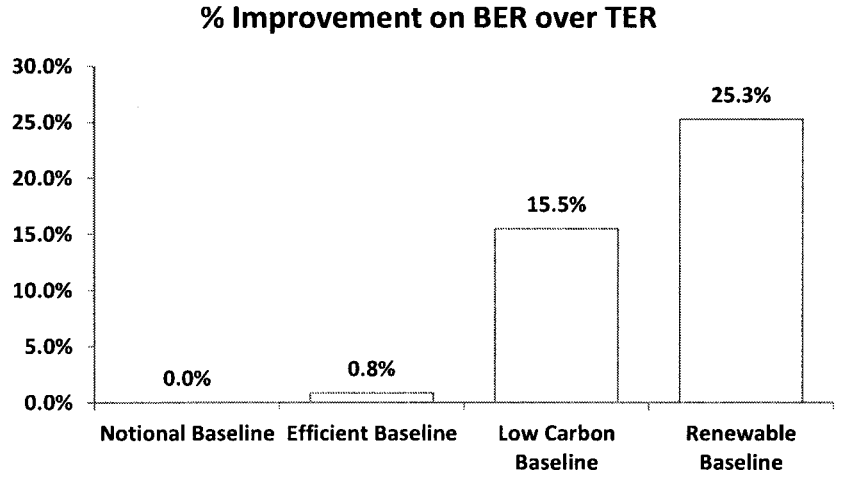
By introducing the heat pump, the 'Whole Energy' CO_2 emission is further reduced from 3,194tCO_2/annum down to 3,002tCO_2/annum, a total reduction of 14.5% from the Notional Baseline.

Finally, renewable energy technology such as Photovoltaic is determined to be feasible for the scheme and an initial assessment determined that a total of 17.2kWp PV system can be deployed on the roof of the building, which brings the 'Whole Energy' CO_2 emission down from 3,002tCO_2/annum to 2,995tCO_2/annum, a further reduction of 0.2%, giving an overall CO_2 reduction of 14.7% from the Notional Baseline.

The final 'Regulated Energy' CO_2 emission figure of 1,288tCO_2/annum, is 27.95% improvement over the 1,788tCO2/annum associated with the Efficient Baseline. Therefore, the facility would comply with the London Plan 2011's requirement of 20% CO_2 reduction from on-site renewable or low carbon technology.



In terms of performance against Part-L 2010 and the BREEAM target, the final Renewable Baseline, which incorporates CHP, Heat pump waste heat recovery as well as Photovoltaic, achieves overall total of 25.3% improvement over Part-L TER (Target Emission Rate), and BREEAM Assessment Scoring and Reporting indicates that this would equate to a total of 10 BRREAM credits under ENE1 category as well as comply with minimum requirements to obtain 'Excellent' level.



6 Appendix A – Glossary

Building Emission Rate (BER) – The building CO_2 emission rate expressed as $kgCO_2/m2/year$. The BER is calculated in accordance with the National Calculation Methodology (NCM) and the Simplified Buildings Energy Model (SBEM)

Combined heat and power (CHP) – CHP integrates the production of usable heat and power (electricity), in a single, highly efficient process. CHP engine generates electricity whist also capturing usable heat that is produced in this process. This contracts with conventional ways of generating electricity where vast amounts of heat is simply wasted.

District Heating Network (DHN) – DHN is a distribution network of heat generated in a centralised location for residential and commercial heating requirements such as space heating and water heating. The heat is often obtained forma cogeneration plant burning fossil fuels but increasingly biofuel. DHN can provide higher efficiencies and better pollution control than heat generated by localised boilers.

Near-site LZC – a low or zero carbon source of energy generation located near to the site of the assessed building. The source is most likely to be providing energy for all or part of a local community of buildings, including the assessed building e.g. decentralised energy generation linked to a community heat network or renewable connected via private wire.

NOx – a generic term for mono-nitrogen oxides NO and NO_2. They are produced from the reaction of nitrogen and oxygen gases in the air during combustion, especially at high temperature in an engine etc.

On-site LZC – a low or zero carbon source of energy generation which is located on the same site as the assessed building.

'Regulated Energy' – Building energy consumption resulting from the specification of a 'controlled', fixed building service' i.e. space heating and cooling, water heating, ventilation and lighting, as a result of requirements imposed by Building Regulations.

Target Emission Rate (TER) – The target emission rate is the minimum energy performance requirement (required by Building Regulation) for a new non domestic building ($kgCO_2/m2/year$). The TER is calculated in accordance with the National Calculation Methodology (NCM) and the Simplified Buildigns Energy Model (SBEM).

'Unregulated Energy' – Building energy consumption resulting from a system or process that is not 'controlled' i.e. energy consumption from systems in the building on which the Building Regulations do not impose a requirement. For example, this may include energy consumption from systems integral to the building and its operation e.g. lifts, escalators, refrigeration systems, ducted fume cupboards; or energy consumption from operational related equipment e.g. servers, printers, desktops, mobile fume cupboards, cooking and other appliances etc.

'Whole Energy' – energy consumption covered by the Building Regulation as well as energy consumption from any other part of the development, including plant or equipment that is not covered by the Building Regulations.

7 Appendix B – Heat Pump Waste Heat Recovery CoP Calculation

Carbon Factors used in Energy Model (Based on Part-L 2010):

Gas Carbon Factor	**0.198**	**Kg/kWh**
Grid Electricity Carbon Factor	**0.517**	**Kg/kWh**
Typical Air Cooled Chiller SEER for constant year round load	5.2	
Electrical Energy that would have been used rejecting that heat with air cooled chiller	0.192	kW
70/50		
Typical Heat pump COP generating water at 70/50 using waste heat at 35/29 Deg.C	3.3	
Electrical Energy in to generate 1kW of heat	0.3	kW
Resultant additional grid electricity required to drive heat pump	0.111	kW
Equivalent CoP based just on additional grid electricity	**9.0**	
60/40		
Typical Heat pump COP generating water at 60/40 using waste heat at 35/29 Deg.C	4.3	
Electrical Energy in to generate 1kW of heat	0.23	kW
Resultant additional grid electricity required to drive heat pump	0.038	kW
Equivalent CoP based just on additional grid electricity	**24.8**	

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SCHEDULE 6
DRAFT PLANNING PERMISSION

Camden

Regeneration and Planning
Development Management
London Borough of Camden
Town Hall
Judd Street
London
WC1H 8ND

Tel 020 7974 4444
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planning@camden.gov.uk
www.camden.gov.uk/planning

Jones Lang LaSalle
22 Hanover Square
London
UK
W1S 1JA

Application Ref: **2013/8192/P**

22 September 2014

Dear Sir/Madam

DRAFT

FOR INFORMATION ONLY - THIS IS NOT A FORMAL DECISION
Town and Country Planning Act 1990 (as amended)

DECISION SUBJECT TO A SECTION 106 LEGAL AGREEMENT

Address:
Former Odeon site and Rosenheim Building
Site bounded partly by Grafton Way
TCR
Huntley Street and University Street
London
WC1E 6DB

DECISION

Proposal:
Redevelopment of the former Odeon site and demolition of the Rosenheim Building to provide a Proton Beam Therapy (PBT) cancer treatment facility and day surgery facilities in 4 levels of basement; inpatient medical facilities and a ground floor retail unit (175 sq m approximate GIA) in a 7 storey
development above ground (34,596.5 sq m GIA in total) including roof plant, a new pedestrian entrance on corner of Grafton Way and Huntley Street, a new service
entrance on Huntley Street, a ground floor drop-off area off Grafton Way, and three roof gardens; and the relocation of the oxygen tanks to University
Street frontage inside a new enclosure.
Drawing Nos: EXISTING: A/UCLH4: 1500-G; 1570-B; 1507-B; 1503-D; 1530-E; 1513-B; 1509-B; 1512-B; 1508-B; 0200-F; 0201-F; 1510-B; 0301-G; 0300-H; 1514-B; 1506-B; 1511-B; 1515-B;
PROPOSED: A/UCLH4: 1516-M; 1517-M; 1818-M; 1519-N; 1520-P; 1521-N; 1522-N; 1523-N; 1524-N; 1525-N; 1526-M; 1527-M; 1531-F; 1532-N; 1533-N; 1534-C; 1540-N; 1541-N; 1550-D; 1551-H; 1554-H; 1555-G; 1556-F; 1557-F; 1558-G; 1560-F; 1561-D; 1577-C; 1581-C; SK243-A; SK0250-D; 0203-E; SK0251; VN50118.09-ECC-DG-0003
SUPPORTING DOCS: Preliminary Ground Movement Assessment Produced by Campbell

Reith dated March 2014; Updated summary tables S1a, S2, S3a produced by Anstey Horne dated 18/11/2013; Design and Access Statement produced by Scott Tallon Walker Architects in association with Edward Williams Architects dated 13/12/2013; Planning Design Report: Acoustics prepared by Clarke Saunders Associates; Air Quality Assessment produced by SKM dated 06/12/2013; Archaeological Desk Based Assessment produced by CgMs dated 06/12/2013; BREEAM report produced by ARUP dated 05/12/2013; Clinical Overview Document produced by UCLH (undated); Ecology Survey to inform BREEAM produced by Thomson Ecology (undated); Energy Strategy produced by ARUP dated 05/12/2013; Heritage Statement produced by KM Heritage dated 01/12/2013; Planning Statement produced by Jones Lang LaSalle dated 17/12/2013; Statement of Consultation produced by UCLH (undated); Summary of Environmental Information produced by Jones Lang LaSalle dated Dec 2013; Transport Assessment by SKM; Basement Impact Assessment produced by Campbell Reith dated 04/12/2013; Daylight and sunlight report produced by Anstey Horne dated 04/12/2013; land Quality Statement produced by Campbell Reith dated 15/11/2013; Rosenheim Building Retention - Feasibility Study produced by Scott Tallon Walker Architects dated 10/12/2013; Structural Demolition report produced by Campbell Reith dated 04/12/2013; Water Environmental Impact Statement produced by Campbell Reith dated 15/11/2013;
For

The Council has considered your application and decided to grant permission subject to the conditions and informatives (if applicable) listed below **AND** subject to the successful conclusion of a Section 106 Legal Agreement.

The matter has been referred to the Council's Legal Department and you will be contacted shortly. If you wish to discuss the matter please contact **Aidan Brookes** in the Legal Department on **020 7 974 1947**.

Once the Legal Agreement has been concluded, the formal decision letter will be sent to you.

Condition(s) and Reason(s):

1 The development hereby permitted must be begun not later than the end of three years from the date of this permission.

Reason: In order to comply with the provisions of Section 91 of the Town and Country Planning Act 1990 (as amended).

2 The development hereby permitted shall be carried out in accordance with the following approved plans: A/UCLH4: 1516-M; 1517-M; 1818-M; 1519-N; 1520-P; 1521-N; 1522-N; 1523-N; 1524-N; 1525-N; 1526-M; 1527-M; 1531-F; 1532-N; 1533-N; 1534-C; 1540-N; 1541-N; 1550-D; 1551-H; 1554-H; 1555-G; 1556-F; 1557-F; 1558-G; 1560-F; 1561-D; 1577-C; 1581-C; SK243-A; SK0250-D; SK0251; VN50118.09-ECC-DG-0003

Reason: For the avoidance of doubt and in the interest of proper planning.

3 Detailed drawings, or samples of materials as appropriate, in respect of the following, shall be submitted to and approved in writing by the local planning authority before the relevant part of the work is begun:

a) Details including sections at 1:10 of all windows (including jambs, head and cill), ventilation grills, external doors and gates;

b) Manufacturer's specification details of all facing materials (to be submitted to the Local Planning Authority) and samples of those materials;

c) Detailed drawings at scale 1:10 of façade construction including but not limited to window reveals, corner brickwork detail and eaves;

d) Detailed drawings of the ceramic screen facade;

e) Details of all windows and external doors and drawings at scale 1:10 including plan and section drawings through the heads and jambs of the openings.

The relevant part of the works shall be carried out in accordance with the details thus approved and all approved samples shall be retained on site during the course of the works.

Reason: To safeguard the appearance of the premises and the character of the immediate area in accordance with the requirements of policy CS14 of the London Borough of Camden Local Development Framework Core Strategy and policy DP24 and DP25 of the London Borough of Camden Local Development Framework Development Policies.

4 No lights, meter boxes, flues, vents or pipes, and no telecommunications equipment, alarm boxes, television aerials or satellite dishes shall be fixed or installed on the external face of the buildings, without the prior approval in writing of the local planning authority.

Reason: To safeguard the appearance of the premises and the character of the immediate area in accordance with the requirements of policy CS14 of the London Borough of Camden Local Development Framework Core Strategy and policy DP24 and DP25 of the London Borough of Camden Local Development Framework Development Policies.

5 Prior to the commencement of development, other than site clearance, full details of hard and soft landscaping and means of enclosure of all un-built, open areas have been submitted to and approved by the local planning authority in writing. [Such details shall include details of any proposed earthworks including grading, mounding and other changes in ground levels.]

The relevant part of the works shall not be carried out otherwise than in accordance with the details thus approved.

Reason: To ensure that the development achieves a high quality of landscaping

which contributes to the visual amenity and character of the area in accordance with the requirements of policy CS14, CS15 of the London Borough of Camden Local Development Framework Core Strategy and policy DP24 of the London Borough of Camden Local Development Framework Development Policies.

6 All hard and soft landscaping works shall be carried out in accordance with the approved landscape details prior to the occupation for the permitted use of the development or any phase of the development, whichever is the sooner. Any trees or areas of planting which, within a period of 5 years from the completion of the development, die, are removed or become seriously damaged or diseased, shall be replaced as soon as is reasonably possible and, in any case, by not later than the end of the following planting season, with others of similar size and species, unless the local planning authority gives written consent to any variation.

Reason: To ensure that the landscaping is carried out within a reasonable period and to maintain a high quality of visual amenity in the scheme in accordance with the requirements of policy CS14, and CS15 of the London Borough of Camden Local Development Framework Core Strategy and policy DP24 of the London Borough of Camden Local Development Framework Development Policies.

7 Prior to the commencement of any works on site, details demonstrating how trees to be retained shall be protected during construction work shall be submitted to and approved by the Council in writing. Such details shall follow guidelines and standards set out in BS5837:2012 "Trees in Relation to Construction". All trees on the site, or parts of trees growing from adjoining sites, unless shown on the permitted drawings as being removed, shall be retained and protected from damage in accordance with the approved protection details.

Reason: To ensure that the development will not have an adverse effect on existing trees and in order to maintain the character and amenity of the area in accordance with the requirements of policy CS15 of the London Borough of Camden Local Development Framework Core Strategy.

8 Prior to the commencement of development, other than site clearance, details of the location, design and method of waste storage and removal including recycled materials, shall be submitted to and approved by the local planning authority in writing. The facility as approved shall be provided prior to the first occupation of any of the new units and permanently retained thereafter.

Reason: To ensure that sufficient provision for the storage and collection of waste has been made in accordance with the requirements of policy CS18 of the London Borough of Camden Local Development Framework Core Strategy and policies DP26, DP28 of the London Borough of Camden Local Development Framework Development Policies.

9 In the event that additional significant contamination is found at any time when carrying out the approved development it must be reported in writing immediately to the local planning authority. An investigation and risk assessment must be undertaken in accordance with the requirements of the Environment Agency's Model Procedures for the Management of Contamination (CLR11), and where mitigation is necessary a scheme of remediation must be designed and implemented to the satisfaction of the local planning authority before any part of the development hereby permitted is occupied.

Reason: To protect future occupiers of the development from the possible presence of ground contamination arising in connection with the previous industrial/storage use of the site in accordance with policy CS5 of the London Borough of Camden Local Development Framework Core Strategy and policy DP26 of the London Borough of Camden Local Development Framework Development Policies.

10 Prior to the commencement of development, other than site clearance, a contract shall be entered into with the Local Highway Authority to secure: a) the reinstatement of a level public footway, by removing the existing vehicle crossover and dropped kerb and b) the installation of a resident's parking bay on the carriageway immediately adjacent to the reinstated footway. The building shall not be occupied until the works that are the subject of that contract have been completed.

Reason: To ensure that a) the pedestrian environment is improved and b) that an additional on-street parking bay is created to mitigate any detrimental impact on parking controls in accordance with policy CS11 of the London Borough of Camden Local Development Framework Core Strategy and policy DP17 of the London Borough of Camden Local Development Framework Development Policies.

11 Prior to occupation of the development, 138 bicycle parking spaces for staff and the 20 bicycle parking spaces for visitors hereby approved shall be installed and available for use. The facilities shall be maintained in good working order thereafter.

Reason: To ensure the development provides adequate cycle parking facilities in accordance with the requirements of policy CS11 of the London Borough of Camden Local Development Framework Core Strategy and policy DP17 of the London Borough of Camden Local Development Framework Development Policies.

12 Prior to the commencement of development, other than site clearance, plans and details of the supporting facilities for cyclists such as showers, toilets, lockers shall be submitted to and approved in writing by the council. The facilities shall be made available prior to occupation and maintained thereafter.

Reason: To ensure the development provides adequate facilities for cycling in accordance with the requirements of policy CS11 of the London Borough of Camden Local Development Framework Core Strategy and policy DP17 of the London Borough of Camden Local Development Framework Development Policies.

13 Prior to the commencement of development, other than site clearance, plans demonstrating the levels at the interface of the Development, the boundary of the Property and the Public Highway shall be submitted to and approved by the Council in writing.

Reason: To ensure that the safety and efficiency and quality of the road network is maintained in accordance with policy CS11 of the London Borough of Camden Local Development Framework Core Strategy and policy DP21 of the London Borough of Camden Local Development Framework Development Policies.

14 Prior to the commencement of development, other than site clearance, plans and supporting details shall be submitted for approval by the Local Planning Authority to indicate the demarcation by the use of brass studs of the boundary between public highway and any forecourt. Prior to occupation, the brass studs shall be installed and maintained thereafter.

Reason: For the avoidance of doubt and in the interest of proper planning and enforcement.

15 Prior to the commencement of development, other than site clearance, plans and scale 1:50 and supporting information detailing of the accessible features and facilities shall be submitted for approval by the Local Planning Authority in writing. This includes external features such as hard landscaping surface treatments including bollards and pedestrian entry doors The approved features and facilities shall be installed prior to occupation and maintained thereafter.

Reason: To ensure that the internal layout of the building provides flexibility for the accessibility of future occupiers and their changing needs over time, in accordance with the requirements of policy CS6 of the London Borough of Camden Local Development Framework Core Strategy and policy DP6 of the London Borough of Camden Local Development Framework Development Policies.

16 Prior to the commencement of development on the relevant part of the building, detailed plans showing the location and extent of photovoltaic cells to be installed on the building shall have been submitted to and approved by the Local Planning Authority in writing. The measures shall include the installation of a meter to monitor the energy output from the approved renewable energy systems. Prior to the first occupation of the buildings, the cells shall be installed in full accordance with the details approved by the Local Planning Authority and permanently retained and maintained thereafter.

Reason: To ensure the development provides adequate on-site renewable energy facilities in accordance with the requirements of policy CS13 of the London Borough of Camden Local Development Framework Core Strategy and policy DP22 of the London Borough of Camden Local Development Framework Development Policies.

17 The development hereby approved shall not commence until such time as a suitably qualified chartered engineer with membership of the appropriate professional body has been appointed to inspect, approve and monitor the critical elements of both permanent and temporary basement construction works throughout their duration to ensure compliance with the design which has been checked and approved by a building control body. Details of the appointment and the appointee's responsibilities shall be submitted to and approved in writing by the local planning authority prior to the commencement of development. Any subsequent change or reappointment shall be confirmed forthwith for the duration of the construction works.

Reason: To safeguard the appearance and structural stability of neighbouring buildings and the character of the immediate area in accordance with the requirements of policy CS14 of the London Borough of Camden Local Development Framework Development Policies and policy DP27 (Basements and Lightwells) of the London Borough of Camden Local Development Framework Development Policies.

18 Full details in respect of the green roof in the area indicated on the approved roof plan shall be submitted to and approved by the local planning authority before the relevant part of the development commences. The buildings shall not be occupied until the approved details have been implemented and these works shall be permanently retained and maintained thereafter.

Reason: In order to ensure the development undertakes reasonable measures to take account of biodiversity and the water environment in accordance with policies CS13, CS15 and CS16 of the London Borough of Camden Local Development Framework Core Strategy and policies DP22, DP23 and DP32 of the London Borough of Camden Local Development Framework Development Policies.

19 The retail unit shall not be open to members of the public between the hours of 00:00 - 07:00.

Reason: To safeguard the amenities of the adjoining premises and the area generally in accordance with the requirements of policies CS5 and CS7 of the London Borough of Camden Local Development Framework Core Strategy and policy DP26 of the London Borough of Camden Local Development Framework Development Policies.

20 No music shall be played on the premises in such a way as to be audible within any adjoining premises or on the adjoining highway.

Reason: To safeguard the amenities of the adjoining premises and the area generally in accordance with the requirements of policy CS5 of the London Borough of Camden Local Development Framework Core Strategy and policy DP26 of the London Borough of Camden Local Development Framework Development Policies.

21 Prior to the installation of any kitchen extract system, details of how the system will be sound attenuated and isolated from the structure shall be submitted to and approved by the Council such that the use can be carried out without detriment to the amenity of adjoining or surrounding premises and in accordance with the noise criteria outlined in condition number 24. Prior to occupation, the approved measures shall be installed and remain in place for the lifetime of the development.

Reason: To safeguard the amenities of the adjoining premises and the area generally in accordance with the requirements of policies CS5 and CS7 of the London Borough of Camden Local Development Framework Core Strategy and policy DP26 of the London Borough of Camden Local Development Framework Development Policies.

22 Prior to the commencement of development, other than site clearance, the detailed design on drawings scale 1:50 as well as supporting details of any ground floor air extraction vents and well as any other extraction vents located elsewhere including those relating the CHP as well as any associated filtering and/or attenuation devices, shall be submitted to and approved in writing by the council. The details approved shall be installed prior to first occupation and maintained thereafter.

Reason: To safeguard the amenities of the adjoining premises and the area generally in accordance with the requirements of policies CS5 and CS7 of the London Borough of Camden Local Development Framework Core Strategy and policy DP26 of the London Borough of Camden Local Development Framework Development Policies.

23 Prior to the installation of any kitchen extract system, a report detailing how odour will be managed shall be submitted to and approved by the local planning authority. Prior to occupation, the approved odour abatement measures shall be installed and remain in place for the lifetime of the development.

Reason: To safeguard the amenities of the adjoining premises and the area generally in accordance with the requirements of policies CS5 and CS7 of the London Borough of Camden Local Development Framework Core Strategy and policy DP26 of the London Borough of Camden Local Development Framework Development Policies.

24 Noise levels at a point 1 metre external to sensitive facades shall be at least 5dB(A) less than the existing background measurement (LA90), expressed in dB(A) when all plant/equipment (or any part of it) is in operation unless the plant/equipment hereby permitted will have a noise that has a distinguishable, discrete continuous note (whine, hiss, screech, hum) and/or if there are distinct impulses (bangs, clicks, clatters, thumps), then the noise levels from that piece of plant/equipment at any sensitive façade shall be at least 10dB(A) below the LA90, expressed in dB(A).

Reason: To safeguard the amenities of the adjoining premises and the area generally in accordance with the requirements of policy CS5 of the London Borough of Camden Local Development Framework Core Strategy and policies DP26 and DP28 of the London Borough of Camden Local Development Framework Development Policies.

25 Prior to the commencement of development, other than site clearance, a scheme for noise mitigation for the external façade shall be submitted to and approved by the local planning authority in writing and the buildings shall not be occupied until completed fully in accordance with such scheme as will have been approved.

Reason: To safeguard the amenities of the adjoining premises and the area generally in accordance with the requirements of policies CS5 and CS7 of the London Borough of Camden Local Development Framework Core Strategy and policy DP26 of the London Borough of Camden Local Development Framework Development Policies.

26 Prior to the commencement of development, other than site clearance, a scheme for vibration mitigation shall be submitted to and approved by the local planning authority in writing and the buildings shall not be occupied until completed fully in accordance with such scheme as will have been approved.

Reason: To safeguard the amenities of the adjoining premises and the area generally in accordance with the requirements of policies CS5 and CS7 of the London Borough of Camden Local Development Framework Core Strategy and policy DP26 of the London Borough of Camden Local Development Framework Development Policies.

27 There shall be no loading or unloading of goods or refuse or other servicing activities outside of the hours of 08:00 - 20:00.

Reason: To safeguard the amenities of the adjoining premises and the area generally in accordance with the requirements of policies CS5 and CS7 of the London Borough of Camden Local Development Framework Core Strategy and policy DP26 of the London Borough of Camden Local Development Framework Development Policies.

28 Prior to the installation of any plant (except for the vacuum insulated evaporator and the stand by generator) an acoustic report shall be submitted to and approved by the Local Planning Authority detailing how the required noise criteria as outlined within condition 24 will be met for each item of plant installed. Any attenuation measures detailed within the acoustic report approved by the Local Planning Authority shall be installed prior to occupation and remain in place for the lifetime of the development.

On commissioning the machinery and prior to the building being occupied a noise survey shall be carried out to ascertain the above noise criteria from the machinery are being met. An acoustic report shall be submitted for the approval of the Local Planning Authority. The Acoustic Report shall clearly contain map/plan showing all measurements locations, tabulated and graphically raw data, calculations /façade corrections /assumptions made, time date, etc.

(ii) All plant and machinery, and ventilation ducting shall be installed so as to prevent the transmission of noise and vibration within or at the boundary of any noise sensitive premises either attached to or in the vicinity of the premises to which this application refers.

Reason: To safeguard the amenities of the adjoining premises and the area generally in accordance with the requirements of policies CS5 and CS7 of the London Borough of Camden Local Development Framework Core Strategy and policy DP26 of the London Borough of Camden Local Development Framework Development Policies.

29 Prior to the relocation of the vacuum insulated evaporator, an acoustic report shall be submitted to and approved by the Local Planning Authority detailing how the required noise criteria as outlined within condition 24 will be met. Any attenuation measures detailed within the acoustic report approved by the Local Planning Authority shall be installed prior to occupation and remain in place for the lifetime of the development.

On commissioning the machinery and prior to the building being occupied a noise survey shall be carried out to ascertain the above noise levels criteria from the machinery are being met. An acoustic report shall be submitted for the approval of the Local Planning Authority. The Acoustic Report shall clearly contain map/plan showing all measurements locations, tabulated and graphically raw data, calculations /façade corrections /assumptions made, time date, etc.

(ii) All plant and machinery, and ventilation ducting shall be installed so as to prevent the transmission of noise and vibration within or at the boundary of any noise sensitive premises either attached to or in the vicinity of the premises to which this application refers.

Reason: To safeguard the amenities of the adjoining premises and the area generally in accordance with the requirements of policies CS5 and CS7 of the London Borough of Camden Local Development Framework Core Strategy and policy DP26 of the London Borough of Camden Local Development Framework Development Policies.

30 Prior to the installation of the stand by generator, an acoustic report shall be submitted to and approved by the Local Planning Authority detailing how the required noise criteria as outlined within condition 24 will be met. Any attenuation measures detailed within the acoustic report approved by the Local Planning Authority shall be installed prior to occupation and remain in place for the lifetime of the development.

On commissioning the machinery and prior to the building being occupied a noise survey shall be carried out to ascertain the above noise levels criteria from the machinery are being met. An acoustic report shall be submitted for the approval of the Local Planning Authority. The Acoustic Report shall clearly contain map/plan showing all measurements locations, tabulated and graphically raw data, calculations /façade corrections /assumptions made, time date, etc.

(ii) All plant and machinery shall be installed so as to prevent the transmission of noise and vibration within or at the boundary of any noise sensitive premises either attached to or in the vicinity of the premises to which this application refers.

Reason: To safeguard the amenities of the adjoining premises and the area generally in accordance with the requirements of policies CS5 and CS7 of the London Borough of Camden Local Development Framework Core Strategy and policy DP26 of the London Borough of Camden Local Development Framework Development Policies.

31 The roof terrace shall not be used for any purpose between the hours of 21:00 - 08:00.

Reason: To safeguard the amenities of the adjoining premises and the area generally in accordance with the requirements of policies CS5 and CS7 of the London Borough of Camden Local Development Framework Core Strategy and policy DP26 of the London Borough of Camden Local Development Framework Development Policies.

32 Before the relevant part of the development commences a scheme detailing the internal and external lighting proposals and predicted lighting levels and any mitigation required to ensure there is no adverse impact on neighbouring properties or the highway shall be submitted to and approved by the local planning authority. The approved scheme shall be installed prior to occupation and remain in place for the lifetime of the development.

Reason: To safeguard the amenities of the adjoining premises and the area generally in accordance with the requirements of policies CS5 and CS7 of the London Borough of Camden Local Development Framework Core Strategy and policy DP26 of the London Borough of Camden Local Development Framework Development Policies.

33 Prior to the commencement of development, other than site clearance, an acoustic report detailing the predicted impact of, and mitigation proposals for, the servicing area and the patient drop off area shall be submitted to and approved by the local planning authority. Any mitigation and attenuation proposals approved shall be installed prior to occupation and maintained for the lifetime of the development.

Reason: To safeguard the amenities of the adjoining premises and the area generally in accordance with the requirements of policies CS5 and CS7 of the London Borough of Camden Local Development Framework Core Strategy and policy DP26 of the London Borough of Camden Local Development Framework Development Policies.

34 Prior to the commencement of development, other than site clearance, drawings and supporting information detailing the security measures for the site shall be submitted to and approved in writing by the council in conjunction with Metropolitan Police. The details agreed shall be installed prior to occupation and maintained thereafter.

Reason: To ensure the safety of visitors and users in accordance with policy CS5 , CS14 Camden Local Development Framework Core Strategy and policy DP24 of the London Borough of Camden Local Development Framework Development Policies.

35 Prior to the commencement of development, other than site clearance, the following details shall be submitted for approval in writing by the council in conjunction with London Underground in respect of the following

a) provide details on all structures
b) accommodate the location of the existing London Underground structures and tunnels
c) accommodate ground movement arising from the construction thereof
d) mitigate the effects of noise and vibration arising from the adjoining operations within the structures and tunnels.

The development shall thereafter be carried out in all respects in accordance with the approved design and method statements, and all structures and works comprised within the development hereby permitted which are required by the approved design statements in order to procure the matters mentioned in paragraphs of this condition shall be completed, in their entirety, before any part of the building hereby permitted is occupied.

Reason: To ensure that the development does not impact on existing London Underground transport infrastructure, in accordance with London Plan 2011 Table 6.1 and 'Land for Industry and Transport' Supplementary Planning Guidance 2012.

36 Prior to the commencement of development, other than site clearance, an Impact studies of the existing water supply infrastructure shall be submitted to, and approved in writing by, the local planning authority in conjunction with Thames Water. The studies should determine the magnitude of any new additional capacity required in the system and a suitable connection point.

Reason: To ensure that the water supply infrastructure has sufficient capacity to cope with additional demand requirements arising from the development.

37 No impact piling shall take place until a piling method statement (detailing the depth and type of piling to be undertaken and the methodology by which such piling will be carried out, including measures to prevent and minimise the potential for damage to subsurface water infrastructure, and the programme for the works) has been submitted to and approved in writing by the local planning authority in consultation with Thames Water. Any piling must be undertaken in accordance with the terms of the approved piling method statement.

Reason: The proposed works will be in close proximity to underground water utility infrastructure.

38 No servicing, delivery, waiting and no VIE (oxygen tank) related activities including deliveries, servicing, maintenance, vehicle waiting shall occur in University Street.

Reason: To safeguard the amenities of the adjoining premises and the area generally in accordance with the requirements of policies CS5 and CS7 of the London Borough of Camden Local Development Framework Core Strategy and policy DP26 of the London Borough of Camden Local Development Framework Development Policies.

39 Prior to the commencement of development, other than site clearance, drawings and supporting details of the arrangements for obscure glazing for any hospital windows facing habitable windows or skylights of the Jeremy Bentham Pub shall be submitted to and approved in writing by the council. The obscure glazing shall be installed prior to occupation and maintained thereafter.

Reason: To safeguard the amenities of the adjoining premises in accordance with the requirements of policies CS5 and CS7 of the London Borough of Camden Local Development Framework Core Strategy and policy DP26 of the London Borough of Camden Local Development Framework Development Policies.

Informative(s):

1 The developer shall ensure that identifiable adequate facilities points to gain access to the void of the fabric of the building areas are provided for pest control treatment purposes.

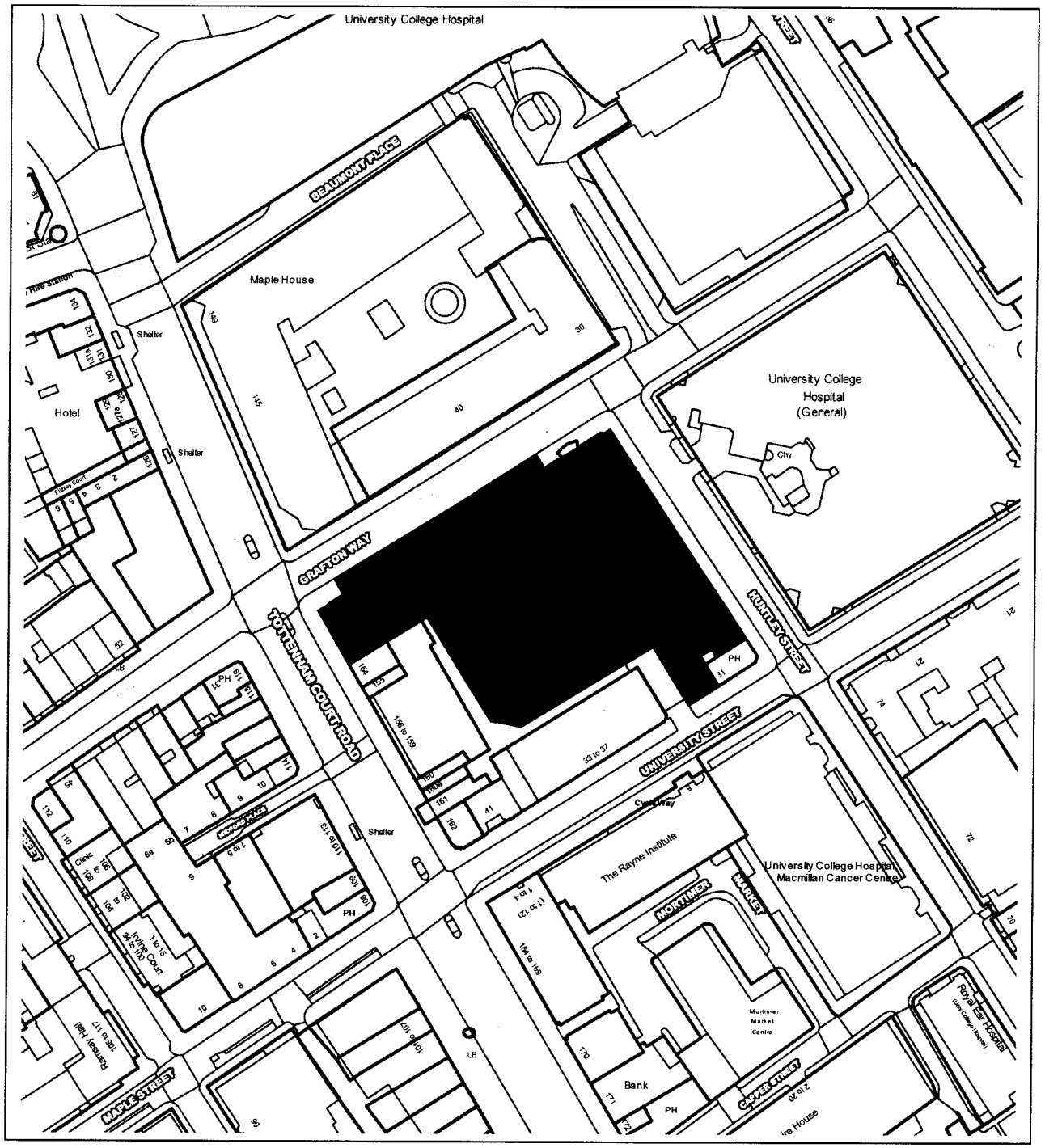
In dealing with the application, the Council has sought to work with the applicant in a positive and proactive way in accordance with paragraphs 186 and 187 of the National Planning Policy Framework.

Yours faithfully

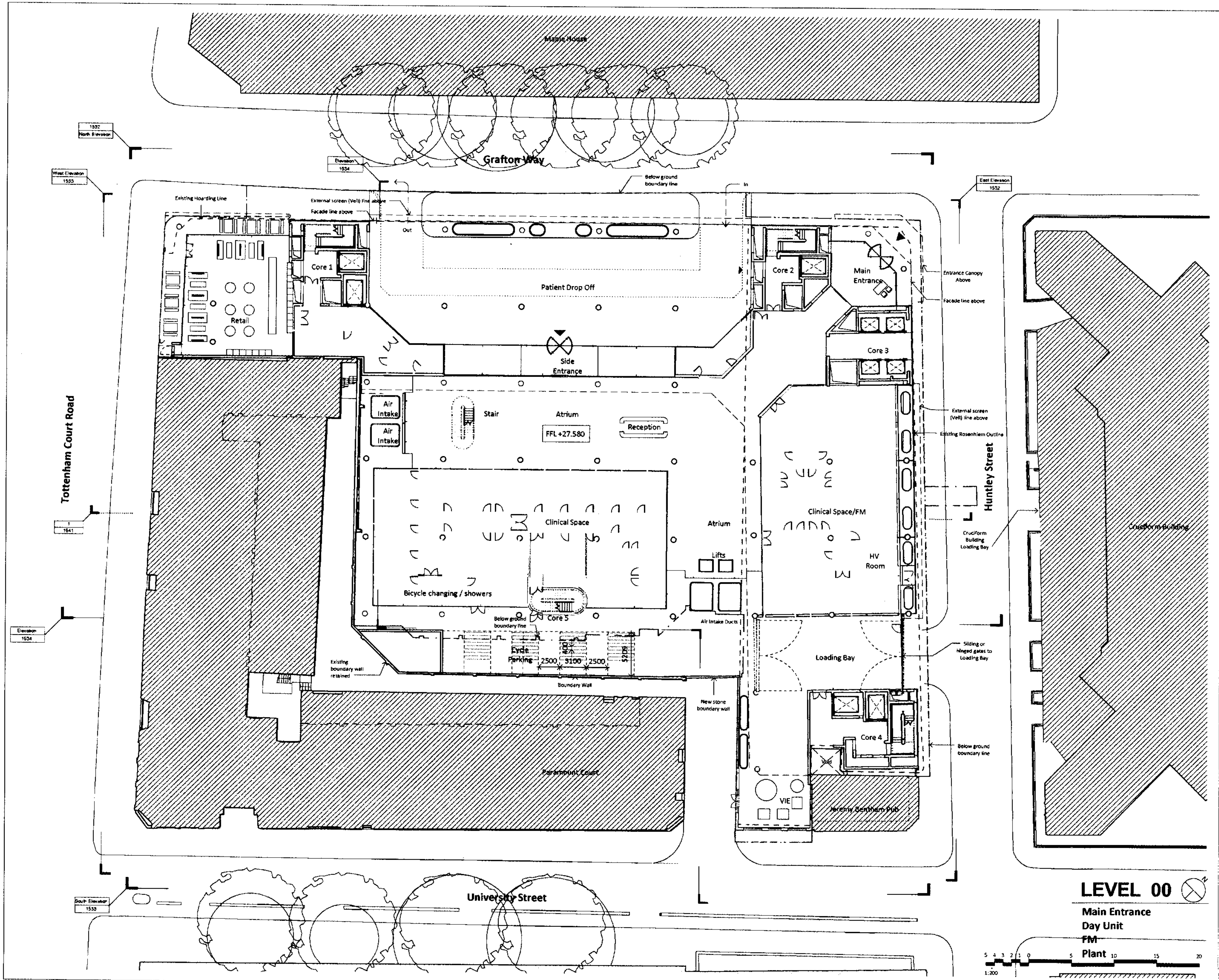
Culture and Environment Directorate

PLANS

NORTHGATE SE GIS Print Template



DECENTRALISED ENERGY FOR LONDON



GENERAL NOTES

G1 Any discrepancies between drawings to be report to the Architect immediately

G2 All Levels are above Ordnance Datum (AOD)

- G2.1 New Levels are shown thus +12 345
- G2.2 Existing Levels are shown thus +12 345
- G2.3 Retained Existing Levels are shown thus EX +12 345

G3 Use figured dimensions only. Scale using scale bar below

G4 Refer to Engineers drawings for all structural and services information

G5 Clear height (finished floor to finished soffit) is shown thus 2750

G6 Setting Out points shown thus SOP

G7 Finishes are shown thus

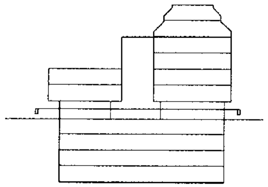
G8 Room numbers are shown thus CX-100-001

G9 Door (D) & Window (W) references are shown thus

G10 For tolerances see the Design Drawings and Specifications

G11 Refer to XXX for T-Sheet references, and to XXX for Architectural Specifications. T-sheet References are shown thus IWS-01

NOTES



PLANNING

Date	Rev	Status
17.10.13	F	Issue 175_For exhibition on 21/23rd
05.11.13	G	Issue 218_For planning meeting
14.11.13	H	Issue 224_Issued for planning meeting
22.11.13	J	Issue 251_For Planning
06.12.13	K	Issue 270_For Planning
13.12.13	L	Issue 270_Issued for Planning
28.02.14	M	Issue 370_Revised Planning Drawings
03.03.14	N	Issue 377_Response to LBC Comments
05.03.14	P	Issue 379_Revised Planning for LBC

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Client: **University College London Hospitals**

Project: **UCLH Phase 4 & PBT**

Drawing Subject: **Ground Floor GA Plan**

File Reference:

Scale: 1 : 200 at A1 | Date: 06 December 2013

Drawn By: | Checked By:

Drawing Status: Planning

Project Status:

	Sort Code	Drawing No.	Rev
STW Ref	12046-EWA-A2	1520	P
EWA Ref	A/UCLH4	1520	P

DATED 22 September **2014**

(1) UNIVERSITY COLLEGE LONDON HOSPITALS NHS FOUNDATION TRUST

and

(2) THE MAYOR AND BURGESSES OF THE LONDON BOROUGH OF CAMDEN

A G R E E M E N T

relating to land known as FORMER ODEON SITE AND ROSENHEIM BUILDING SITE BOUNDED PARTLY BY GRAFTON WAY, TCR, HUNTLEY STREET AND UNIVERSITY STREET LONDON WC1E 6DB pursuant to Section 106 of the Town and Country Planning Act 1990 (as amended) Section 2 of the Local Government Act 2000 and Section 1 of the Localism Act 2011 and Section 111 of the Local Government Act 1972 and Section 278 of the Highways Act 1980

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