# ENHANCED FABRIC PART L2 CALCULATION

Rev B: September 2016

# **BRUKL Output Document**



Compliance with England Building Regulations Part L 2013

Project name

# Actual U values L2B Standard services DX

As designed

Date: Wed Aug 03 09:35:17 2016

#### Administrative information

#### **Building Details**

Address: 93-103 Drummond Street, LONDON, NW1 2HJ

#### Certification tool

Calculation engine: SBEM

Calculation engine version: v5.2.g.3

Interface to calculation engine: iSBEM

Interface to calculation engine version: v5.2.g

BRUKL compliance check version: v5.2.g.3

#### **Owner Details**

Name: Information not provided by the user

Telephone number: Information not provided by the user

Address: Information not provided by the user, Information

not provided by the user, Information not provided

by the user

#### Certifier details

Name: Tony Wood

Telephone number:

Address:

#### Criterion 1: The calculated CO2 emission rate for the building should not exceed the target

The building does not comply with England Building Regulations Part L 2013

Are as built details the same as used in the BER calculations?	Separate submission
Are emissions from the building less than or equal to the target?	BER > TER
Building CO₂ emission rate (BER), kgCO₂/m².annum	34.1
Target CO₂ emission rate (TER), kgCO₂/m².annum	19.7
CO <sub>2</sub> emission rate from the notional building, kgCO <sub>2</sub> /m <sup>2</sup> .annum	19.7

# Criterion 2: The performance of the building fabric and the building services should achieve reasonable overall standards of energy efficiency

Values not achieving standards in the Non-Domestic Building Services Compliance Guide and Part L are displayed in red.

Building fabric

Element	Ua-Limit	Ua-Calc	Ui-Calc	Surface where the maximum value occurs*
Wall**	0.35	0.18	0.18	Basement Stairs/nwi
Floor	0.25	0.11	1	Ground Floor Stairs/fi.1
Roof	0.25	0.15	0.15	Basement offices/c
Windows***, roof windows, and rooflights	2.2	1.2	1.2	Basement offices/ne.1/g
Personnel doors	2.2	1.8	1.8	Basement Offices/nw/fd
Vehicle access & similar large doors	1.5	-	-	"No external vehicle access doors"
High usage entrance doors	3.5	-	-	"No external high usage entrance doors"

U<sub>e-Limit</sub> = Limiting area-weighted average U-values [W/(m<sup>2</sup>K)]

U<sub>a-Cate</sub> = Calculated area-weighted average U-values [W/(m<sup>2</sup>K)]

U-cate = Calculated maximum individual element U-values [W/(m²K)]

\* There might be more than one surface where the maximum U-value occurs.

\*\* Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.

\*\*\* Display windows and similar glazing are excluded from the U-value check.

N.B.: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air Permeability	Worst acceptable standard	This building
m³/(h.m²) at 50 Pa	10	10

#### **Building services**

The standard values listed below are minimum values for efficiencies and maximum values for SFPs. Refer to the Non-Domestic Building Services Compliance Guide for details.

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	NO
Whole building electric power factor achieved by power factor correction	<0.9

#### 1- Air Conditioning

Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(I/s)]	HR	efficiency
2.6	2.6	-		-	
2.5*	N/A	N/A	N/A	N/A	4
oring & targeting w	ith alarms for out-of	-range values for thi	s HVAC system	n	NO
2	.6 .5*	.6 2.6 .5* N/A	.6 2.6 - .5* N/A N/A	.6 2.65* N/A N/A N/A	.6 2.6

#### 2- Gas LPHW

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(I/s)]	HR efficiency		
This system	0.84	-	-	-	-		
Standard value	0.91*	N/A	N/A	N/A		N/A	
Automatic moni	toring & targeting w	ith alarms for out-of	-range values for th	is HVAC system	n	NO	

#### 1- DHW

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	1	-
Standard value	1	N/A

#### Local mechanical ventilation, exhaust, and terminal units

ID	System type in Non-domestic Building Services Compliance Guide
Α	Local supply or extract ventilation units serving a single area
В	Zonal supply system where the fan is remote from the zone
С	Zonal extract system where the fan is remote from the zone
D	Zonal supply and extract ventilation units serving a single room or zone with heating and heat recovery
E	Local supply and extract ventilation system serving a single area with heating and heat recovery
F	Other local ventilation units
G	Fan-assisted terminal VAV unit
Н	Fan coil units
I	Zonal extract system where the fan is remote from the zone with grease filter

Zone name		SFP [W/(I/s)]								UD officience	
ID of system type	A	В	С	D	D E	E F	G	Н	1	HR efficiency	
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
Basement Stairs	-	-	-	-	-	-	-	-	-	-	N/A
Basement offices		-	-	2.2	-	-	-	-	-	0.5	0.5
Basement WC	0.4	-	-	-	-	-	-	-	-	-	N/A
Ground Floor Open Plan Office	-	-	-	2.2	-	-	-	-	-	0.5	0.5
Ground Floor Small office	-	-	-	2.2	-	-	-	-	-	0.5	0.5
Ground Floor Stairs	-	-	-	-	-	-	-	-	-	-	N/A
Ground Floor WC	0.4	-	-	-	-	-	-	-	-	-	N/A
First Floor Stairs	-	-		-	-	-	-	-	-	-	N/A

Zone name		SFP [W/(l/s)]							UD #::-		
ID of system type		В	C	D	E	F	G	Н	1	HRE	efficiency
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
Mezz deck Offices	-	-	-	2.2	-	-	-	-	-	0.5	0.5
First Floor Tower office	-	-	-	-	-	-	-	-	-	-	N/A
Second Floor Tower office	-	-	-	-	-	-	-	-	-	-	N/A

General lighting and display lighting	Lumino	ous effic			
Zone name	Luminaire	Lamp	Display lamp	General lighting [W	
Standard value	60	60	22		
Basement Stairs	-	60	-	74	
Basement offices	60	-	-	7681	
Basement WC	-	60	-	231	
Ground Floor Open Plan Office	60	-	-	5023	
Ground Floor Small office	60	-	-	1278	
Ground Floor Stairs	-	60	-	102	
Ground Floor WC	-	60	-	160	
First Floor Stairs	-	60	-	68	
Mezz deck Offices	60	-	-	4258	
First Floor Tower office	60	-	-	410	
Second Floor Tower office	60	-	-	466	

# Criterion 3: The spaces in the building should have appropriate passive control measures to limit solar gains

Zone	Solar gain limit exceeded? (%)	Internal blinds used?	
Basement Stairs	N/A		
Basement offices	NO (-83.4%)	NO	
Basement WC	N/A	N/A	
Ground Floor Open Plan Office	NO (-2.6%)	NO	
Ground Floor Small office	NO (-67%)	NO	
Ground Floor Stairs	N/A	N/A	
Ground Floor WC	N/A	N/A	
First Floor Stairs	N/A	N/A	
Mezz deck Offices	NO (-2.8%)	NO	
First Floor Tower office	NO (-79%)	NO	
Second Floor Tower office	NO (-83.5%)	NO	

# Criterion 4: The performance of the building, as built, should be consistent with the calculated BER

Separate submission

Criterion 5: The necessary provisions for enabling energy-efficient operation of the building should be in place

Separate submission

### EPBD (Recast): Consideration of alternative energy systems

Were alternative energy systems considered and analysed as part of the design process?			
Is evidence of such assessment available as a separate submission?	YES		
Are any such measures included in the proposed design?	YES		

### Technical Data Sheet (Actual vs. Notional Building)

#### **Building Global Parameters**

#### **Building Use**

	Actual	Notional
Area [m²]	2066.6	2066.6
External area [m²]	3222.5	3222.5
Weather	LON	LON
Infiltration [m³/hm²@ 50Pa]	10	3
Average conductance [W/K]	721.65	1322.18
Average U-value [W/m²K]	0.22	0.41
Alpha value* [%]	15.24	13.26

<sup>\*</sup> Percentage of the building's average heat transfer coefficient which is due to thermal bridging

% Area	Building Type
	A1/A2 Retail/Financial and Professional services
	A3/A4/A5 Restaurants and Cafes/Drinking Est./Takeaways
100	B1 Offices and Workshop businesses

#### 10

B2 to B7 General Industrial and Special Industrial Groups

B8 Storage or Distribution

C1 Hotels

C2 Residential Inst.: Hospitals and Care Homes

C2 Residential Inst.: Residential schools

C2 Residential Inst.: Universities and colleges

C2A Secure Residential Inst.

Residential spaces

D1 Non-residential Inst.: Community/Day Centre

D1 Non-residential Inst.: Libraries, Museums, and Galleries

D1 Non-residential Inst.: Education

D1 Non-residential Inst.: Primary Health Care Building D1 Non-residential Inst.: Crown and County Courts

D2 General Assembly and Leisure, Night Clubs and Theatres

Others: Passenger terminals Others: Emergency services Others: Miscellaneous 24hr activities

Others: Car Parks 24 hrs

Others - Stand alone utility block

#### Energy Consumption by End Use [kWh/m2]

	Actual	Notional	
Heating	3.98	3.76	
Cooling	22.09	9.11	
Auxiliary	7.97	2.63	
Lighting	29.04	21.38	
Hot water	2.7	3.12	
Equipment*	40.12	40.12	
TOTAL**	65.77	40.01	

Energy used by equipment does not count towards the total for calculating emissions
 Total is net of any electrical energy displaced by CHP generators, if applicable.

### Energy Production by Technology [kWh/m²]

	Actual	Notional
Photovoltaic systems	0	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0

#### Energy & CO, Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m²]	181.47	150.97
Primary energy* [kWh/m²]	201.92	113.85
Total emissions [kg/m²]	34.1	19.7

<sup>\*</sup> Primary energy is net of any electrical energy displaced by CHP generators, if applicable.

H	HVAC Sys	stems Per	rformanc	е						
Sy	stem Type	Heat dem MJ/m2	Cool dem MJ/m2	Heat con kWh/m2	Cool con kWh/m2	Aux con kWh/m2	Heat SSEEF	Cool SSEER	Heat gen SEFF	Cool gen SEER
[5]	[] Split or m	ulti-split sy	stem, [HS]	Heat pump	(electric): a	air source,	[HFT] Elec	tricity, [CF7	[] Electricity	
	Actual	34.7	146.8	4	22.1	8	2.42	1.85	2.6	2.6
	Notional	32.9	118.1	3.8	9.1	2.6	2.43	3.6		_

#### Key to terms

Heat dem [MJ/m2] = Heating energy demand Cool dem [MJ/m2] = Cooling energy demand Heat con [kWh/m2] = Heating energy consumption Cool con [kWh/m2] = Cooling energy consumption Aux con [kWh/m2] = Auxiliary energy consumption Heat SSEFF = Heating system seasonal effici

= Heating system seasonal efficiency (for notional building, value depends on activity glazing class)

Cool SSEER = Cooling system seasonal energy efficiency ratio

= Heating generator seasonal efficiency = Cooling generator seasonal energy efficiency ratio Heat gen SSEFF

Cool gen SSEER

ST = System type HS = Heat source **HFT** = Heating fuel type CFT = Cooling fuel type

# **Key Features**

The BCO can give particular attention to items with specifications that are better than typically expected.

#### **Building fabric**

Element	U <sub>i-Typ</sub>	U <sub>i-Min</sub>	Surface where the minimum value occurs
Wall	0.23	0.18	Basement Stairs/nwi
Floor	0.2	0.1	Basement offices/f
Roof	0.15	0.15	Basement offices/c
Windows, roof windows, and rooflights	1.5	1.2	Basement offices/ne.1/g
Personnel doors	1.5	1.8	Basement Offices/nw/fd
Vehicle access & similar large doors	1.5	-	"No external vehicle access doors"
High usage entrance doors	1.5	-	"No external high usage entrance doors"
U+Typ = Typical individual element U-values [W/(m²l * There might be more than one surface where the	7.55	J-value oc	U <sub>i-Min</sub> = Minimum individual element U-values [W/(m²K)]

Air Permeability	Typical value	This building	
m³/(h.m²) at 50 Pa	5	10	



### **PROPOSED SOLUTION**

# **PART L2 CALCULATION**



# 



Compliance with England Building Regulations Part L 2013

**Project name** 

### Actual U values L2B Act Services LPHW

As designed

Date: Wed Aug 03 09:40:41 2016

#### Administrative information

#### **Building Details**

Address: 93-103 Drummond Street, LONDON, NW1 2HJ

#### Certification tool

Calculation engine: SBEM

Calculation engine version: v5.2.g.3

Interface to calculation engine: iSBEM Interface to calculation engine version: v5.2.g

BRUKL compliance check version: v5.2.g.3

#### Owner Details

Name: Information not provided by the user

Telephone number: Information not provided by the user Address: Information not provided by the user, Information

not provided by the user, Information not provided

by the user

#### Certifier details

Name: Tony Wood Telephone number:

Address:

#### Criterion 1: The calculated CO<sub>2</sub> emission rate for the building should not exceed the target

CO <sub>2</sub> emission rate from the notional building, kgCO <sub>2</sub> /m <sup>2</sup> .annum	16.3
Target CO <sub>2</sub> emission rate (TER), kgCO <sub>2</sub> /m <sup>2</sup> .annum	16.3
Building CO₂ emission rate (BER), kgCO₂/m².annum	14.1
Are emissions from the building less than or equal to the target?	BER =< TER
Are as built details the same as used in the BER calculations?	Separate submission

#### Criterion 2: The performance of the building fabric and the building services should achieve reasonable overall standards of energy efficiency

Values not achieving standards in the Non-Domestic Building Services Compliance Guide and Part L are displayed in red. **Building fabric** 

Element	Ua-Limit	Ua-Calc	Ui-Calc	Surface where the maximum value occurs*
Wall**	0.35	0.18	0.18	Basement Stairs/nwi
Floor	0.25	0.11	1	Ground Floor Stairs/fi.1
Roof	0.25	0.15	0.15	Basement offices/c
Windows***, roof windows, and rooflights	2.2	1.2	1.2	Basement offices/ne.1/g
Personnel doors	2.2	1.8	1.8	Basement Offices/nw/fd
Vehicle access & similar large doors	1.5	-	-	"No external vehicle access doors"
High usage entrance doors	3.5	-	-	"No external high usage entrance doors"

Ua-Limit = Limiting area-weighted average U-values [W/(m2K)]

U<sub>a-Calc</sub> = Calculated area-weighted average U-values [W/(m<sup>2</sup>K)]

U-cate = Calculated maximum individual element U-values [W/(m²K)]

N.B.: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air Permeability	Worst acceptable standard	This building	
m³/(h.m²) at 50 Pa	10	10	

<sup>\*</sup> There might be more than one surface where the maximum U-value occurs.

<sup>\*\*</sup> Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.

<sup>\*\*\*</sup> Display windows and similar glazing are excluded from the U-value check.

#### **Building services**

The standard values listed below are minimum values for efficiencies and maximum values for SFPs. Refer to the Non-Domestic Building Services Compliance Guide for details.

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	YES
Whole building electric power factor achieved by power factor correction	>0.95

#### 1- Air Conditioning

	<b>Heating efficiency</b>	Cooling efficiency	Radiant efficiency	SFP [W/(I/s)]	HR	efficiency
This system	4	4		-	-	
Standard value	2.5*	N/A	N/A	N/A	N/A	4
Automatic moni	toring & targeting w	ith alarms for out-of	-range values for th	is HVAC syster	m	YES

#### 2- Gas LPHW

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(I/s)]	HF	Refficiency
This system	0.96	-	-	-	-	
Standard value	0.91*	N/A	N/A	N/A	N/	Α
Automatic moni	toring & targeting w	ith alarms for out-of	-range values for th	is HVAC syster	m	NO

#### 1- DHW

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	1	
Standard value	1	N/A

#### Local mechanical ventilation, exhaust, and terminal units

ID	System type in Non-domestic Building Services Compliance Guide
Α	Local supply or extract ventilation units serving a single area
В	Zonal supply system where the fan is remote from the zone
С	Zonal extract system where the fan is remote from the zone
D	Zonal supply and extract ventilation units serving a single room or zone with heating and heat recovery
E	Local supply and extract ventilation system serving a single area with heating and heat recovery
F	Other local ventilation units
G	Fan-assisted terminal VAV unit
Н	Fan coil units
1	Zonal extract system where the fan is remote from the zone with grease filter

Zone name				SI	FP [W	((l/s)]				UD a	#Calaman
ID of system type	Α	В	С	D	E	F	G	Н	1	nke	fficiency
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
Basement Stairs	-	-	-	-	-	-	-	-	-	-	N/A
Basement offices	-	-	-	1.8	-	-	-	-	-	0.65	0.5
Basement WC	0.3	-	-	-	-	-	-	-	-	-	N/A
Ground Floor Open Plan Office	-	-	-	1.8	-	-	-	-	-	0.65	0.5
Ground Floor Small office	-	-	-	1.8	-	-	-	-	-	0.65	0.5
Ground Floor Stairs	-	1.8	-	-	-	-	-	-	-	-	N/A
Ground Floor WC	0.3	1.8	-	-	-	-	-	-	-	-	N/A
First Floor Stairs	-	1.8	-	-	-	-	-	-	-	-	N/A

Zone name				SI	P [W	(l/s)]				UD -	History
ID of system type	Α	В	С	D	E	F	G	Н	1	nke	efficiency
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
Mezz deck Offices	-	-	-	1.8	-	-	-	-	-	0.65	0.5
First Floor Tower office	-	-	-	-	-	-	-	-	-	-	N/A
Second Floor Tower office	-	-	-	-	-	-	-	-	-	-	N/A

General lighting and display lighting	Lumino	ous effic	acy [lm/W]	
Zone name	Luminaire	Lamp	Display lamp	General lighting [W]
Standard value	60	60	22	
Basement Stairs	-	110	-	40
Basement offices	110	-	-	4190
Basement WC	-	110	-	126
Ground Floor Open Plan Office	110	-	-	2740
Ground Floor Small office	110	-	-	697
Ground Floor Stairs	-	110	-	56
Ground Floor WC	-	110	-	87
First Floor Stairs	-	110	-	37
Mezz deck Offices	110	-	-	2323
First Floor Tower office	110	-	-	224
Second Floor Tower office	110	100	-	254

# Criterion 3: The spaces in the building should have appropriate passive control measures to limit solar gains

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Basement offices	NO (-83.4%)	NO
Ground Floor Open Plan Office	NO (-2.6%)	NO
Ground Floor Small office	NO (-67%)	NO
Mezz deck Offices	NO (-2.8%)	NO
First Floor Tower office	NO (-79%)	NO
Second Floor Tower office	NO (-83.5%)	NO

# Criterion 4: The performance of the building, as built, should be consistent with the calculated BER

Separate submission

# Criterion 5: The necessary provisions for enabling energy-efficient operation of the building should be in place

Separate submission

#### EPBD (Recast): Consideration of alternative energy systems

Were alternative energy systems considered and analysed as part of the design process?	YES
Is evidence of such assessment available as a separate submission?	YES
Are any such measures included in the proposed design?	YES

### Technical Data Sheet (Actual vs. Notional Building)

#### **Building Global Parameters**

#### **Building Use**

	Actual	Notional
Area [m²]	2066.6	2066.6
External area [m²]	3222.5	3222.5
Weather	LON	LON
Infiltration [m³/hm²@ 50Pa]	10	3
Average conductance [W/K]	721.65	1322.18
Average U-value [W/m²K]	0.22	0.41
Alpha value* [%]	15.24	13.26

<sup>\*</sup> Percentage of the building's average heat transfer coefficient which is due to thermal bridging

% Area	Building Type
	A1/A2 Retail/Financial and Professional services
	A3/A4/A5 Restaurants and Cafes/Drinking Est./Takeaways
100	R1 Offices and Workshop husinesses

#### 100

B2 to B7 General Industrial and Special Industrial Groups

**B8** Storage or Distribution

C1 Hotels

C2 Residential Inst.: Hospitals and Care Homes

C2 Residential Inst.: Residential schools

C2 Residential Inst.: Universities and colleges

C2A Secure Residential Inst.

Residential spaces

D1 Non-residential Inst.: Community/Day Centre

D1 Non-residential Inst.: Libraries, Museums, and Galleries

D1 Non-residential Inst.: Education

D1 Non-residential Inst.: Primary Health Care Building

D1 Non-residential Inst.: Crown and County Courts

D2 General Assembly and Leisure, Night Clubs and Theatres

Others: Passenger terminals Others: Emergency services

Others: Miscellaneous 24hr activities

Others: Car Parks 24 hrs

Others - Stand alone utility block

#### Energy Consumption by End Use [kWh/m2]

	Actual	Notional
Heating	12.74	11.83
Cooling	0	0
Auxiliary	8.94	3.76
Lighting	10.89	21.38
Hot water	2.7	3.12
Equipment*	40.12	40.12
TOTAL**	35.27	40.09

<sup>\*</sup> Energy used by equipment does not count towards the total for calculating emissions.
\*\* Total is net of any electrical energy displaced by CHP generators, if applicable.

### Energy Production by Technology [kWh/m²]

	Actual	Notional
Photovoltaic systems	0	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0

#### Energy & CO<sub>2</sub> Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m²]	153.15	153
Primary energy* [kWh/m²]	82.96	93.13
Total emissions [kg/m²]	14.1	16.3

<sup>\*</sup> Primary energy is net of any electrical energy displaced by CHP generators, if applicable

H	IVAC Sys	stems Per	formanc	е						
Sy	stem Type	Heat dem MJ/m2		Heat con kWh/m2	Cool con kWh/m2	Aux con kWh/m2	Heat SSEEF	Cool SSEER	Heat gen SEFF	Cool gen SEER
[S1	Central h	eating using	water: rad	iators, [HS	LTHW boi	ler, [HFT] N	latural Gas	, [CFT] Ele	ctricity	
	Actual	39.3	113.8	12.7	0	8.9	0.86	0	0.96	0
	Notional	34.9	118.1	11.8	0	3.8	0.82	0		_

#### Key to terms

Heat dem [MJ/m2] = Heating energy demand Cool dem [MJ/m2] = Cooling energy demand Heat con [kWh/m2] = Heating energy consumption Cool con [kWh/m2] = Cooling energy consumption

Aux con [kWh/m2] = Auxiliary energy consumption
Heat SSEFF = Heating system seasonal efficiency (for notional building, value depends on activity glazing class) Cool SSEER

 Cooling system seasonal energy efficiency ratio
 Heating generator seasonal efficiency
 Cooling generator seasonal energy efficiency ratio Heat gen SSEFF

Cool gen SSEER

= System type ST = Heat source HS = Heating fuel type HFT CFT = Cooling fuel type

# **Key Features**

The BCO can give particular attention to items with specifications that are better than typically expected.

#### **Building fabric**

Element	U <sub>i-Typ</sub>	U <sub>i-Min</sub>	Surface where the minimum value occurs'
Wall	0.23	0.18	Basement Stairs/nwi
Floor	0.2	0.1	Basement offices/f
Roof	0.15	0.15	Basement offices/c
Windows, roof windows, and rooflights	1.5	1.2	Basement offices/ne.1/g
Personnel doors	1.5	1.8	Basement Offices/nw/fd
Vehicle access & similar large doors	1.5	-	"No external vehicle access doors"
High usage entrance doors	1.5	-	"No external high usage entrance doors"
U <sub>FTyp</sub> = Typical individual element U-values [W/(m²	<)]	-	U <sub>I-Min</sub> = Minimum individual element U-values [W/(m²K)]
* There might be more than one surface where the	minimum (	J-value oc	curs.

Air Permeability	Typical value	This building	
m³/(h.m²) at 50 Pa	5	10	

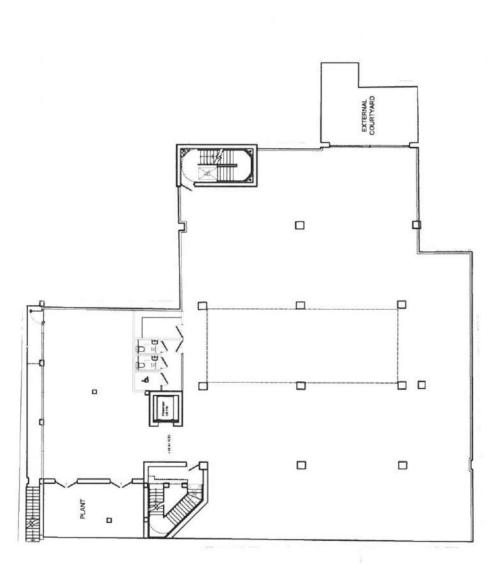
## **PROPOSED DRAWINGS**

Rev B: September 2016



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Reve DOJ. Date: 14.09.2016 DrucEF Chic LB.
Intensis Jody Dodoven revised.
Reve DOJ. Date: 15.09.2016 DrucEF Chic LB.
Ferrina sloby, intensis solois, and code revised.
Reve DOZ. Date: 15.09.2016 DrucEF Chic LB.
Joddind Sow height, Americal visit position.
Reve DOJ. Date: 15.08.2016 DrucEF Chic LB.
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Do not scale off this drawing Report all errors and omissions to the Architect Dimensions to be checked on site

SHEET INFORMATION: Picted by : E.FIGUEIREDO Plot data : 14 September 2016 14:33:36

Project: Drummond Street

Title: Office Scheme General Arrangement Plan Level -01

Drawing status: For Information

Scale @ A3 1:200

Drawing No: Rev. 2049-00-DR-0109 D04

GZWG Architects LLP 17 Bowling Green Lane London EC1R 0QB

Telephone 020 7253 2523 Fax: 020 7250 0594 mail@czwgarchitects.co.uk www.czwg.com

DRUMMOND STREET

Reve DOJ Date: 14,09,2016 Druz EF Chair LB
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Rev DOS Date: 13,08,016 Druz EF Chair LB
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Rev DOZ Date: 15,08,016 Druz EF Chair LB
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Do not scale off this drawing Report all errors and omissions to the Architect Dimensions to be checked on site SHEET INFORMATION:

Plotted by : E.HGUEIREDO Flot date : 14 September 2016 14:33:08

Client:

Project: Drummond Street

Title: Office Scheme General Arrangement Plan Level 00

Drawing status: For Information

Scale @ A3 1:200 Drawing No: Rev: 2049-00-DR-0110 D04

COURTYARD Appear ESCAPE a b -6 NOOTURE ITS NEWS 111 VOID 1:20 ramped courtyard surface

COBOURG STREET

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DRUMMOND STREET

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Client

Project: Drummond Street

Title: Office Scheme General Arrangement Plan Level 01

Drawing No: Rev: 2049-00-DR-0111 D04 Drawing status: For information Scale @ A3 1:200

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COBOURG STREET



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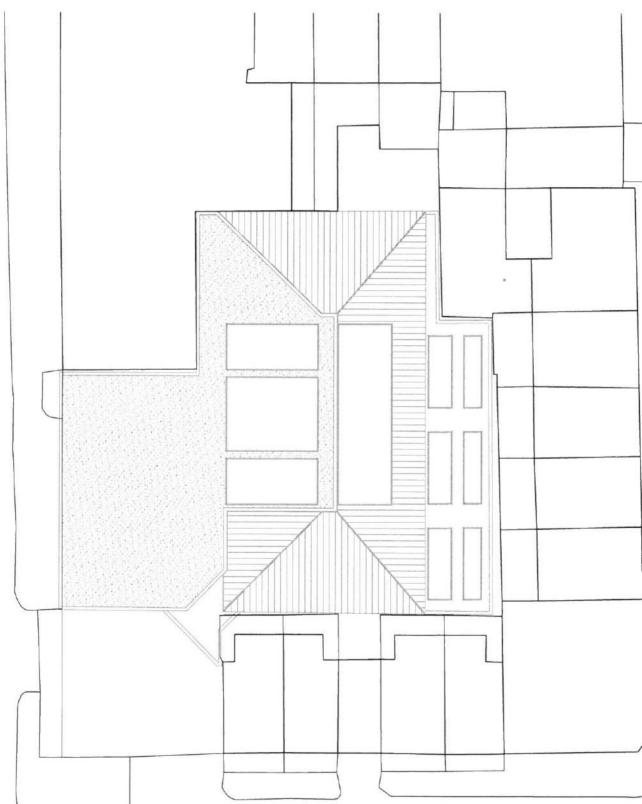
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Client:

Project: Drummond Street

Title: Office Scheme General Arrangement Plan Roof Plan

Drawing No: Rev: 2049-00-DR-0120 D03 Drawing status: For Information Scale @ A3 1:200



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Report all errors and omissions to the Architect
Unremions to be checked on site

SHEET INFORMATION:
Plotted by : E.FIGUEIREDO
Plot date : 13 September 2016 17:18:58

Client:

Project: Drummond Street

Title: Office Scheme South West Elevation

Drawing status: For Information

Scale @ A3

Drawing No: Rev: 2049-00-DR-0602 D03

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Patrice Day F. F. FOLKIERED OF Provided B The Chackies Chackies and Chackies Chackies Chackies Chackies and Chackies Chackie

Project: Drummond Street

Title: Office Scheme Section AA

Drawing status: For Information

Scale @ A3 1:200

Drawing No: Rev: 2049-00-DR-0401 D04

Roof Level +58.40 AOD ♥ Basement Level +46.54 AOD 🗨 First Level +53.90 AOD 🗸 Ground Level



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Revn DCJ Date: 14,09,2016 Drnu: EF Chibit B Infinite Incoming and end shighly facilities wheels. Rever DCJ Date: 130,800 the Drnu: EF Chibit B Infinite Injour and viola emercind. Shylighia and rold facilities and rold facilities. But DCJ Date: 15,08,0016 Drnu: EF Chibit B Updated floor Indight. Second floor omitted. Rev DCJ Date: 10,08,2016 Drnu: EF Chibit B Infinit Incom

Do not scale off this drawing Report all errors and emissions to the Architect Dimensions to be checked on site

SHEET INFORMATION:
Plotted by: E.FIGUEIREDO
Plot date: 14 September 2016 14:31:17

Client:

Project: Drummond Street

Office Scheme Section BB Title:

Drawing status: For Information

Drawing No: Scale @ A3 1.200

Drawling No: Rev. 2049-00-DR-0402 D04

Ground Level Basement Level +46.64 AOD 🛡 Roof Level +58.40 AOD 🗨 First Level

SMZD

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www.czwg.com

Client:

Project: Drummond Street

Title: Office Scheme Section AA

Drawing status: For Information

Scale @ A3 1:200

Drawing No: Rev: 2049-00-DR-0401 D04

Ground Level Roof Level +58.40 AOD ♥ Basement Level +46.64 AOD First Level +53.90 AOD



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Project: Drummond Street

Title: Office Scheme Section BB

Drawing status: For Information

Scale @ A3 1.200

Drawing No:

Drawing No: Rev. 2049-00-DR-0402 D04

Roof Level +58.40 AOD ♥ Ground Level +50.00 AOD ♥\_\_\_\_ Basement Level +46.64 AOD 🛡 First Lavel +53.90 AOD 🗨

SMZD

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Rev: D03 Date: 13.09.2016 Drn: EF Chb:: LB Internal layout and voids amended. Skylights and mod nitich revised.

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Initial Issue.

Do not seek off this drawing propert all stress and emissions to the Architect Dimensions to be checked on site SHEET INFORMATION Plotted by E-HGUIREDO Flot date - 13 Sepamber 2018 17:1927

Project: Drummond Street

Title: Office Scheme North West Elevation

Drawing status: For Information

Scale @ A3 1:200 Drawing No: Rov: 2049-00-DR-0601 D03

Client

