

# SBEM Data Reflection Report — Actual Building

Date: Thu Dec 10 19:44:22 2020

**Project name:** Case study 01 test

**Building type:** Residential spaces

**Building area [m2]:** 191

General	
Building address	Information not provided by the user  Information not provided by the user Information not provided by the user
Building area [m2]	191
Weather	MAN
Building rotation [degrees]	0
Special conservation status	YES
Project complexity	Level 3

Certifier/Energy assessor	
Name	Joe Bloggs
Telephone number	9999999999
Address	123 Any Street Any City AB1 2CD
Assessor number	ABCD000000
Qualification	NOS5
Accreditation scheme	Quidos
Employer name	<insert Employer/Trading Name>
Employer address	<insert Employer/Trading Address>

Analysis	
Compliance checked with	None
Asset rating	EPC England
Stage	As built
Shell & core building	NO

Software	
SBEM version	v5.6.b.0
Interface to SBEM	iSBEM
Interface version	v5.6.b

Envelope/Door constructions				
Name	U-value [W/m2K]	Adjusted U-value	Km [kJ/m2K]	Metal clad
External Wall sanstone	1.4	NO	135	NO
Party wall	1.4	NO	135	YES
Conservatory party wall	1.4	NO	135	YES
External drylined wall	1.3	NO	135	YES
Partition wall	0.48	NO	11.7	NO
Pantry Partition wall	0.48	NO	11.7	NO
Thick interior wall	1.4	NO	135	YES
Roof	0.42	NO	12	NO
Intermediate floor	1.4	NO	12	NO
West reception room floor	1	NO	22.5	NO
Suspended floors	2.3	NO	22.5	NO
Pantry floor	0.58	NO	36	NO
Front door	3	NO	11.25	NO
Wall with hangings	1.2	NO	135	NO

Window/Rooflight constructions			
Name	U-value [W/m2K]	Solar transmittance	Light transmittance
Original sashes with interior shutters	1.7	0.85	0.9
Original windows with secondary glazing	1.8	0.76	0.8
Double glazed windows	2.739	0.76	0.8
Mullion in pantry	4.3	0.85	0.9

Summary of objects		
Object type	Total number	Total related area [m2]
Envelope/Door constructions	14	-
Window/Rooflight constructions	4	-
HW systems	2	-
SE systems	0	0
PV systems	0	0
Wind generators	0	-
CHP generators	0	-
HVAC systems	4	-
Zones	12	190.73
Envelopes	73	820.36
Doors	1	2.8
Windows/Rooflights	10	18.51

Project building services	
Electric power factor	<0.9
Submetering and M&T for lighting systems	NO
Emission factor for district heating [kgCO2/kWh]	0.293
Primary energy factor for district heating [kWh/kWh]	1.2

Notes

Hot water systems		
Name	Default HWS	Bathroom shower
Generator Type	Using Central Heating boiler	Instantaneous hot water only
Fuel type	Oil	Grid Supplied Electricity
Seasonal efficiency	0.65	0.7
Uses CHP	NO	NO
Storage system	YES	NO
Storage volume [litres]	130	-
Insulation thickness [mm]	100 (Loose jacket)	-
Secondary circulation	NO	-
Circulation losses [W/m]	-	-
Pump power [kW]	-	-
Loop length [m]	-	-

**Notes**

Heating, ventilation, and air conditioning systems			
Name	Zones without HVAC system	Rayburn Royale	Reception room heating
Type	No Heating or Cooling	Central heating using water: radiators	Central heating using water: radiators
Heat source	-	LTHW boiler	LTHW boiler
Heating fuel type	-	Oil	Oil
Heating seasonal efficiency	-	0.65	0.65
Uses CHP	-	NO	NO
Variable speed pumping type	-	With differential sensor across pump	With differential sensor across pump
Generator radiant efficiency	-	-	-
Cooling generator type	-	-	-
Cooling fuel type	-	-	-
Cooling seasonal energy efficiency ratio	-	-	-
Cooling nominal energy efficiency ratio	-	-	-
Mixed-mode cooling operation	-	-	-
Heat recovery system	-	-	-
Heat recovery seasonal efficiency	-	-	-
Variable heat recovery efficiency	-	-	-
Specific fan power [W/(l/s)]	-	-	-
Submetering and M&T for this system	-	NO	NO
Heating - Central time control	-	YES	YES
Heating - Optimum stop/start control	-	YES	YES
Heating - Local time control	-	NO	NO
Heating - Local temperature control	-	YES	YES
Heating - Weather compensation control	-	YES	YES

Notes

**Heating, ventilation, and air conditioning systems - continued**

Name	Underfloor heating
Type	Central heating using water: floor heating
Heat source	LTHW boiler
Heating fuel type	Oil
Heating seasonal efficiency	0.65
Uses CHP	NO
Variable speed pumping type	With differential sensor across pump
Generator radiant efficiency	-
Cooling generator type	-
Cooling fuel type	-
Cooling seasonal energy efficiency ratio	-
Cooling nominal energy efficiency ratio	-
Mixed-mode cooling operation	-
Heat recovery system	-
Heat recovery seasonal efficiency	-
Variable heat recovery efficiency	-
Specific fan power [W/(l/s)]	-
Submetering and M&T for this system	NO
Heating - Central time control	YES
Heating - Optimum stop/start control	YES
Heating - Local time control	NO
Heating - Local temperature control	YES
Heating - Weather compensation control	YES

**Notes**

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<b>Zone name:</b> Pantry	<b>Activity:</b> Domestic Circulation	<b>Multiplier:</b> 1
<b>Area [m2]:</b> 16.93	<b>Height [m]:</b> 1.89	<b>Air permeability @ 50pa [m3/hm2]:</b> 12

HVAC system, ventilation, and exhaust	
Name	Zones without HVAC system
Destratification fans	NO
Ventilation type	Natural
SFP for local mechanical supply & extract [W/(l/s)]	-
Heat Recovery system	-
Heat recovery seasonal efficiency	-
Variable heat recovery efficiency	-
Local mechanical exhaust	NO
Exhaust air flow rate [l/s.m2]	-
SFP for mechanical exhaust [W/(l/s)]	-
Exhaust fans location	-
SFP for system terminal units [W/(l/s)]	-
Demand-controlled ventilation	None
Flow regulation type for ventilation control	-
Night cooling maximum hours [hours/month]	-
Night cooling maximum air flow rate [l/s.m2]	-
SFP for night cooling [W/(l/s)]	-

General Lighting and controls	
Total wattage [W]	-
Design illuminance [Lux]	-
Lamp and ballast efficacy [Lumens/W]	-
Light output ratio	-
Lamp type	Tungsten or Halogen
Air-extracting luminaires	NO
Controls	MANUAL
Type of photoelectric control	-
Different sensor for back of zone	-
Photoelectric control parasitic power [W/m2]	-
Automatic zoning for daylight	YES
Occupancy sensing	NONE
Occupancy sensing parasitic power [W/m2]	-

Display lighting	
Efficient lamps	NO
Lumens per circuit wattage	-
Time switching	NO

Thermal bridges Psi values [W/mK]		
Junction type	Metal clad	Not metal clad
Roof-wall	0.28	0.12
Wall-ground floor	1.15	0.16
Wall-wall (corner)	0.25	0.09
Wall-not ground floor	0	0.07
Lintel (window/door)	1.27	0.3
Sill (window)	1.27	0.04
Jamb (window/door)	1.27	0.05

Hot water system	
Name	Bathroom shower
Dead leg length in this zone [m]	0

Shell & core	
Shell area for fit-out	-

Envelopes							
(Multiplier) Name	(1) Pantry/ei	(1) Pantry/n	(1) Pantry/w	(1) Pantry/ce	(1) Pantry/f	(1) Panty/s/1	(1) Pantry/s/2
Type	Wall	Wall	Wall	Floor or Ceiling	Floor or Ceiling	Wall	Wall
Area [m2]	8.32	7.62	8.32	16.93	16.93	5.66	2.08
Orientation	East	North	West	Horizontal	Horizontal	South	South
Adjacent space	Conditioned	Same	Same	Same	Underground	Exterior	Unheated
Construction name	Party wall	Partition wall	Partition wall	Intermediate floor	Pantry floor	External drylined wall	Conservatory party wall

Windows & rooflights	
(Multiplier) Name	(1) Pantry/s/1/window
In envelope	Panty/s/1
Area [m2]	1.5
Glazing name	Mullion in pantry
Shading position	None (no shading)
Shading colour	-
Shading translucency	-
Transmission factor	1
Frame / Aspect ratios	0.3 / 0.3

Notes

<b>Zone name:</b> Upstairs cupboard	<b>Activity:</b> Domestic Circulation	<b>Multiplier:</b> 1
<b>Area [m2]:</b> 6.14	<b>Height [m]:</b> 2.56	<b>Air permeability @ 50pa [m3/hm2]:</b> 12

HVAC system, ventilation, and exhaust	
Name	Zones without HVAC system
Destratification fans	NO
Ventilation type	Natural
SFP for local mechanical supply & extract [W/(l/s)]	-
Heat Recovery system	-
Heat recovery seasonal efficiency	-
Variable heat recovery efficiency	-
Local mechanical exhaust	NO
Exhaust air flow rate [l/s.m2]	-
SFP for mechanical exhaust [W/(l/s)]	-
Exhaust fans location	-
SFP for system terminal units [W/(l/s)]	-
Demand-controlled ventilation	None
Flow regulation type for ventilation control	-
Night cooling maximum hours [hours/month]	-
Night cooling maximum air flow rate [l/s.m2]	-
SFP for night cooling [W/(l/s)]	-

General Lighting and controls	
Total wattage [W]	-
Design illuminance [Lux]	-
Lamp and ballast efficacy [Lumens/W]	-
Light output ratio	-
Lamp type	Tungsten or Halogen
Air-extracting luminaires	NO
Controls	MANUAL
Type of photoelectric control	-
Different sensor for back of zone	-
Photoelectric control parasitic power [W/m2]	-
Automatic zoning for daylight	YES
Occupancy sensing	NONE
Occupancy sensing parasitic power [W/m2]	-

Hot water system	
Name	Default HWS
Dead leg length in this zone [m]	0

Display lighting	
Efficient lamps	NO
Lumens per circuit wattage	-
Time switching	NO

Thermal bridges Psi values [W/mK]		
Junction type	Metal clad	Not metal clad
Roof-wall	0.28	0.12
Wall-ground floor	1.15	0.16
Wall-wall (corner)	0.25	0.09
Wall-not ground floor	0	0.07
Lintel (window/door)	1.27	0.3
Sill (window)	1.27	0.04
Jamb (window/door)	1.27	0.05

Shell & core	
Shell area for fit-out	-

Envelopes							
(Multiplier) Name	(1) Upstairs cupboard/s	(1) Upstairs cupboard/e	(1) Upstairs cupboard/n	(1) Upstairs cupboard/w/1	(1) Upstairs cupboard/c	(1) Upstairs cupboard/fe	(1) Upstairs cupboard/w/2
Type	Wall	Wall	Wall	Wall	Flat roof	Floor or Ceiling	Wall
Area [m2]	10.39	2.25	10.39	2.51	6.14	6.14	3.25
Orientation	South	East	North	West	Horizontal	Horizontal	West
Adjacent space	Same	Same	Exterior	Same	Exterior	Same	Exterior
Construction name	Partition wall	Partition wall	Thick interior wall	Partition wall	Roof	Intermediate floor	External Wall sanstone

Notes

<b>Zone name:</b> Kitchen	<b>Activity:</b> Domestic Kitchen	<b>Multiplier:</b> 1
<b>Area [m2]:</b> 17.32	<b>Height [m]:</b> 2.73	<b>Air permeability @ 50pa [m3/hm2]:</b> 12

HVAC system, ventilation, and exhaust	
Name	Rayburn Royale
Destratification fans	NO
Ventilation type	Natural
SFP for local mechanical supply & extract [W/(l/s)]	-
Heat Recovery system	-
Heat recovery seasonal efficiency	-
Variable heat recovery efficiency	-
Local mechanical exhaust	NO
Exhaust air flow rate [l/s.m2]	-
SFP for mechanical exhaust [W/(l/s)]	-
Exhaust fans location	-
SFP for system terminal units [W/(l/s)]	-
Demand-controlled ventilation	None
Flow regulation type for ventilation control	-
Night cooling maximum hours [hours/month]	-
Night cooling maximum air flow rate [l/s.m2]	-
SFP for night cooling [W/(l/s)]	-

General Lighting and controls	
Total wattage [W]	-
Design illuminance [Lux]	-
Lamp and ballast efficacy [Lumens/W]	-
Light output ratio	-
Lamp type	LED
Air-extracting luminaires	NO
Controls	MANUAL
Type of photoelectric control	-
Different sensor for back of zone	-
Photoelectric control parasitic power [W/m2]	-
Automatic zoning for daylight	YES
Occupancy sensing	NONE
Occupancy sensing parasitic power [W/m2]	-

Hot water system	
Name	Default HWS
Dead leg length in this zone [m]	0

Display lighting	
Efficient lamps	NO
Lumens per circuit wattage	-
Time switching	NO

Thermal bridges Psi values [W/mK]		
Junction type	Metal clad	Not metal clad
Roof-wall	0.28	0.12
Wall-ground floor	1.15	0.16
Wall-wall (corner)	0.25	0.09
Wall-not ground floor	0	0.07
Lintel (window/door)	1.27	0.3
Sill (window)	1.27	0.04
Jamb (window/door)	1.27	0.05

Shell & core	
Shell area for fit-out	-

Envelopes							
(Multiplier) Name	(1) Kitchen/e	(1) Kitchen/n	(1) Kitchen/w	(1) Kitchen/ce	(1) Kitchen/f	(1) Kitchen/s/1	(1) Kitchen/s/2
Type	Wall	Wall	Wall	Floor or Ceiling	Floor or Ceiling	Wall	Wall
Area [m2]	11.82	10.92	11.82	17.32	17.32	5.46	5.46
Orientation	East	North	West	Horizontal	Horizontal	South	South
Adjacent space	Same	Exterior	Exterior	Same	Underground	Unheated	Unheated
Construction name	Partition wall	Thick interior wall	External Wall sanstone	Intermediate floor	Suspended floors	Conservatory party wall	Conservatory party wall

Windows & rooflights	
(Multiplier) Name	(1) Kitchen/w/window
In envelope	Kitchen/w
Area [m2]	0.65
Glazing name	Double glazed windows
Shading position	None (no shading)
Shading colour	-
Shading translucency	-
Transmission factor	1
Frame / Aspect ratios	0.1 / 0.8

Notes

**Zone name:** South Bedroom**Activity:** Domestic Bedroom**Multiplier:** 1**Area [m2]:** 18**Height [m]:** 2.56**Air permeability @ 50pa [m3/hm2]:** 12**HVAC system, ventilation, and exhaust**

Name	Rayburn Royale
Destratification fans	NO
Ventilation type	Natural
SFP for local mechanical supply & extract [W/(l/s)]	-
Heat Recovery system	-
Heat recovery seasonal efficiency	-
Variable heat recovery efficiency	-
Local mechanical exhaust	NO
Exhaust air flow rate [l/s.m2]	-
SFP for mechanical exhaust [W/(l/s)]	-
Exhaust fans location	-
SFP for system terminal units [W/(l/s)]	-
Demand-controlled ventilation	None
Flow regulation type for ventilation control	-
Night cooling maximum hours [hours/month]	-
Night cooling maximum air flow rate [l/s.m2]	-
SFP for night cooling [W/(l/s)]	-

**General Lighting and controls**

Total wattage [W]	-
Design illuminance [Lux]	-
Lamp and ballast efficacy [Lumens/W]	-
Light output ratio	-
Lamp type	Tungsten or Halogen
Air-extracting luminaires	NO
Controls	MANUAL
Type of photoelectric control	-
Different sensor for back of zone	-
Photoelectric control parasitic power [W/m2]	-
Automatic zoning for daylight	YES
Occupancy sensing	NONE
Occupancy sensing parasitic power [W/m2]	-

**Display lighting**

Efficient lamps	NO
Lumens per circuit wattage	-
Time switching	NO

**Thermal bridges Psi values [W/mK]**

Junction type	Metal clad	Not metal clad
Roof-wall	0.28	0.12
Wall-ground floor	1.15	0.16
Wall-wall (corner)	0.25	0.09
Wall-not ground floor	0	0.07
Lintel (window/door)	1.27	0.3
Sill (window)	1.27	0.04
Jamb (window/door)	1.27	0.05

**Hot water system**

Name	Default HWS
Dead leg length in this zone [m]	0

**Shell & core**

Shell area for fit-out	-
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**Envelopes**

(Multiplier) Name	(1) South Bedroom/s	(1) South Bedroom/ei	(1) South Bedroom/n	(1) South Bedroom/w	(1) South Bedroom/c	(1) South Bedroom/fe
Type	Wall	Wall	Wall	Wall	Flat roof	Floor or Ceiling
Area [m2]	10.5	11.24	10.5	11.24	18	18
Orientation	South	East	North	West	Horizontal	Horizontal
Adjacent space	Exterior	Conditioned	Same	Same	Exterior	Same
Construction name	External Wall sanstone	Party wall	Partition wall	Partition wall	Roof	Intermediate floor

**Windows & rooflights**

(Multiplier) Name	(1) South Bedroom/s/window
In envelope	South Bedroom/s
Area [m2]	1.61
Glazing name	Double glazed windows
Shading position	None (no shading)
Shading colour	-
Shading translucency	-
Transmission factor	1
Frame / Aspect ratios	0.3 / 0.83

**Notes**



<b>Zone name:</b> Landing	<b>Activity:</b> Domestic Circulation	<b>Multiplier:</b> 1
<b>Area [m2]:</b> 15.54	<b>Height [m]:</b> 2.56	<b>Air permeability @ 50pa [m3/hm2]:</b> 12

HVAC system, ventilation, and exhaust	
Name	Rayburn Royale
Destratification fans	NO
Ventilation type	Natural
SFP for local mechanical supply & extract [W/(l/s)]	-
Heat Recovery system	-
Heat recovery seasonal efficiency	-
Variable heat recovery efficiency	-
Local mechanical exhaust	NO
Exhaust air flow rate [l/s.m2]	-
SFP for mechanical exhaust [W/(l/s)]	-
Exhaust fans location	-
SFP for system terminal units [W/(l/s)]	-
Demand-controlled ventilation	None
Flow regulation type for ventilation control	-
Night cooling maximum hours [hours/month]	-
Night cooling maximum air flow rate [l/s.m2]	-
SFP for night cooling [W/(l/s)]	-

General Lighting and controls	
Total wattage [W]	-
Design illuminance [Lux]	-
Lamp and ballast efficacy [Lumens/W]	-
Light output ratio	-
Lamp type	LED
Air-extracting luminaires	NO
Controls	MANUAL
Type of photoelectric control	-
Different sensor for back of zone	-
Photoelectric control parasitic power [W/m2]	-
Automatic zoning for daylight	YES
Occupancy sensing	NONE
Occupancy sensing parasitic power [W/m2]	-

Display lighting	
Efficient lamps	NO
Lumens per circuit wattage	-
Time switching	NO

Thermal bridges Psi values [W/mK]		
Junction type	Metal clad	Not metal clad
Roof-wall	0.28	0.12
Wall-ground floor	1.15	0.16
Wall-wall (corner)	0.25	0.09
Wall-not ground floor	0	0.07
Lintel (window/door)	1.27	0.3
Sill (window)	1.27	0.04
Jamb (window/door)	1.27	0.05

Hot water system	
Name	Default HWS
Dead leg length in this zone [m]	0

Shell & core	
Shell area for fit-out	-

Envelopes						
(Multiplier) Name	(1) Landing/s	(1) Landing/e	(1) Landing/n	(1) Landing/w	(1) Landing/c	(1) Landing/fe
Type	Wall	Wall	Wall	Wall	Flat roof	Floor or Ceiling
Area [m2]	7.12	14.31	7.12	14.31	15.54	15.54
Orientation	South	East	North	West	Horizontal	Horizontal
Adjacent space	Exterior	Same	Same	Same	Exterior	Same
Construction name	External Wall sanstone	Partition wall	Partition wall	Partition wall	Roof	Intermediate floor

Windows & rooflights	
(Multiplier) Name	(1) Landing/s/window
In envelope	Landing/s
Area [m2]	3.12
Glazing name	Original windows with sec
Shading position	None (no shading)
Shading colour	-
Shading translucency	-
Transmission factor	1
Frame / Aspect ratios	0.4 / 0.53

Notes

<b>Zone name:</b> Master bedroom	<b>Activity:</b> Domestic Bedroom	<b>Multiplier:</b> 1
<b>Area [m2]:</b> 18.32	<b>Height [m]:</b> 2.56	<b>Air permeability @ 50pa [m3/hm2]:</b> 12

HVAC system, ventilation, and exhaust	
Name	Rayburn Royale
Destratification fans	NO
Ventilation type	Natural
SFP for local mechanical supply & extract [W/(l/s)]	-
Heat Recovery system	-
Heat recovery seasonal efficiency	-
Variable heat recovery efficiency	-
Local mechanical exhaust	NO
Exhaust air flow rate [l/s.m2]	-
SFP for mechanical exhaust [W/(l/s)]	-
Exhaust fans location	-
SFP for system terminal units [W/(l/s)]	-
Demand-controlled ventilation	None
Flow regulation type for ventilation control	-
Night cooling maximum hours [hours/month]	-
Night cooling maximum air flow rate [l/s.m2]	-
SFP for night cooling [W/(l/s)]	-

General Lighting and controls	
Total wattage [W]	-
Design illuminance [Lux]	-
Lamp and ballast efficacy [Lumens/W]	-
Light output ratio	-
Lamp type	LED
Air-extracting luminaires	NO
Controls	MANUAL
Type of photoelectric control	-
Different sensor for back of zone	-
Photoelectric control parasitic power [W/m2]	-
Automatic zoning for daylight	YES
Occupancy sensing	NONE
Occupancy sensing parasitic power [W/m2]	-

Display lighting	
Efficient lamps	NO
Lumens per circuit wattage	-
Time switching	NO

Thermal bridges Psi values [W/mK]		
Junction type	Metal clad	Not metal clad
Roof-wall	0.28	0.12
Wall-ground floor	1.15	0.16
Wall-wall (corner)	0.25	0.09
Wall-not ground floor	0	0.07
Lintel (window/door)	1.27	0.3
Sill (window)	1.27	0.04
Jamb (window/door)	1.27	0.05

Hot water system	
Name	Default HWS
Dead leg length in this zone [m]	0

Shell & core	
Shell area for fit-out	-

Envelopes						
(Multiplier) Name	(1) Master bedroom/s	(1) Master bedroom/ei	(1) Master bedroom/n	(1) Master bedroom/w	(1) Master bedroom/c	(1) Master bedroom/ce
Type	Wall	Wall	Wall	Wall	Flat roof	Floor or Ceiling
Area [m2]	10.42	11.52	10.42	11.52	18.32	18.32
Orientation	South	East	North	West	Horizontal	Horizontal
Adjacent space	Same	Conditioned	Exterior	Same	Exterior	Same
Construction name	Partition wall	Party wall	External Wall sanstone	Partition wall	Roof	Intermediate floor

Windows & rooflights	
(Multiplier) Name	(1) Master bedroom/n/window
In envelope	Master bedroom/n
Area [m2]	2.3
Glazing name	Original windows with sec
Shading position	None (no shading)
Shading colour	-
Shading translucency	-
Transmission factor	1
Frame / Aspect ratios	0.3 / 0.76

Notes

<b>Zone name:</b> Northwest bedroom	<b>Activity:</b> Domestic Bedroom	<b>Multiplier:</b> 1
<b>Area [m2]:</b> 18.43	<b>Height [m]:</b> 2.56	<b>Air permeability @ 50pa [m3/hm2]:</b> 12

HVAC system, ventilation, and exhaust	
Name	Rayburn Royale
Destratification fans	NO
Ventilation type	Natural
SFP for local mechanical supply & extract [W/(l/s)]	-
Heat Recovery system	-
Heat recovery seasonal efficiency	-
Variable heat recovery efficiency	-
Local mechanical exhaust	NO
Exhaust air flow rate [l/s.m2]	-
SFP for mechanical exhaust [W/(l/s)]	-
Exhaust fans location	-
SFP for system terminal units [W/(l/s)]	-
Demand-controlled ventilation	None
Flow regulation type for ventilation control	-
Night cooling maximum hours [hours/month]	-
Night cooling maximum air flow rate [l/s.m2]	-
SFP for night cooling [W/(l/s)]	-

General Lighting and controls	
Total wattage [W]	-
Design illuminance [Lux]	-
Lamp and ballast efficacy [Lumens/W]	-
Light output ratio	-
Lamp type	Tungsten or Halogen
Air-extracting luminaires	NO
Controls	MANUAL
Type of photoelectric control	-
Different sensor for back of zone	-
Photoelectric control parasitic power [W/m2]	-
Automatic zoning for daylight	YES
Occupancy sensing	NONE
Occupancy sensing parasitic power [W/m2]	-

Display lighting	
Efficient lamps	NO
Lumens per circuit wattage	-
Time switching	NO

Thermal bridges Psi values [W/mK]		
Junction type	Metal clad	Not metal clad
Roof-wall	0.28	0.12
Wall-ground floor	1.15	0.16
Wall-wall (corner)	0.25	0.09
Wall-not ground floor	0	0.07
Lintel (window/door)	1.27	0.3
Sill (window)	1.27	0.04
Jamb (window/door)	1.27	0.05

Hot water system	
Name	Default HWS
Dead leg length in this zone [m]	0

Shell & core	
Shell area for fit-out	-

Envelopes						
(Multiplier) Name	(1) Northwest bedroom/s	(1) Northwest bedroom/e	(1) Northwest bedroom/n	(1) Northwest bedroom/w	(1) Northwest bedroom/c	(1) Northwest bedroom/fe
Type	Wall	Wall	Wall	Wall	Flat roof	Floor or Ceiling
Area [m2]	10.39	11.62	10.39	11.62	18.32	18.32
Orientation	South	East	North	West	Horizontal	Horizontal
Adjacent space	Exterior	Same	Exterior	Exterior	Exterior	Same
Construction name	Thick interior wall	Partition wall	External Wall sanstone	External Wall sanstone	Roof	Intermediate floor

Windows & rooflights	
(Multiplier) Name	(1) Northwest bedroom/n/win
In envelope	Northwest bedroom/n
Area [m2]	2.31
Glazing name	Original windows with sec
Shading position	None (no shading)
Shading colour	-
Shading translucency	-
Transmission factor	1
Frame / Aspect ratios	0.3 / 0.76

Notes

**Zone name:** Small North bedroom**Activity:** Domestic Bedroom**Multiplier:** 1**Area [m2]:** 9.17**Height [m]:** 2.56**Air permeability @ 50pa [m3/hm2]:** 12**HVAC system, ventilation, and exhaust**

Name	Rayburn Royale
Destratification fans	NO
Ventilation type	Natural
SFP for local mechanical supply & extract [W/(l/s)]	-
Heat Recovery system	-
Heat recovery seasonal efficiency	-
Variable heat recovery efficiency	-
Local mechanical exhaust	NO
Exhaust air flow rate [l/s.m2]	-
SFP for mechanical exhaust [W/(l/s)]	-
Exhaust fans location	-
SFP for system terminal units [W/(l/s)]	-
Demand-controlled ventilation	None
Flow regulation type for ventilation control	-
Night cooling maximum hours [hours/month]	-
Night cooling maximum air flow rate [l/s.m2]	-
SFP for night cooling [W/(l/s)]	-

**General Lighting and controls**

Total wattage [W]	-
Design illuminance [Lux]	-
Lamp and ballast efficacy [Lumens/W]	-
Light output ratio	-
Lamp type	Tungsten or Halogen
Air-extracting luminaires	NO
Controls	MANUAL
Type of photoelectric control	-
Different sensor for back of zone	-
Photoelectric control parasitic power [W/m2]	-
Automatic zoning for daylight	YES
Occupancy sensing	NONE
Occupancy sensing parasitic power [W/m2]	-

**Display lighting**

Efficient lamps	NO
Lumens per circuit wattage	-
Time switching	NO

**Thermal bridges Psi values [W/mK]**

Junction type	Metal clad	Not metal clad
Roof-wall	0.28	0.12
Wall-ground floor	1.15	0.16
Wall-wall (corner)	0.25	0.09
Wall-not ground floor	0	0.07
Lintel (window/door)	1.27	0.3
Sill (window)	1.27	0.04
Jamb (window/door)	1.27	0.05

**Hot water system**

Name	Default HWS
Dead leg length in this zone [m]	0

**Shell & core**

Shell area for fit-out	-
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**Envelopes**

(Multiplier) Name	(1) Small North bedroom/s	(1) Small North bedroom/e	(1) Small North bedroom/n	(1) Small North bedroom/w	(1) Small North bedroom/c	(1) Small North bedroom/fe
Type	Wall	Wall	Wall	Wall	Flat roof	Floor or Ceiling
Area [m2]	7.12	8.45	7.12	8.45	9.17	9.17
Orientation	South	East	North	West	Horizontal	Horizontal
Adjacent space	Same	Same	Exterior	Same	Exterior	Same
Construction name	Partition wall	Partition wall	External Wall sanstone	Partition wall	Roof	Intermediate floor

**Windows & rooflights**

(Multiplier) Name	(1) Small North bedroom/n/w
In envelope	Small North bedroom/n
Area [m2]	2.35
Glazing name	Original windows with sec
Shading position	None (no shading)
Shading colour	-
Shading translucency	-
Transmission factor	1
Frame / Aspect ratios	0.3 / 0.76

**Notes**

<b>Zone name:</b> Bathroom	<b>Activity:</b> Domestic Bathroom	<b>Multiplier:</b> 1
<b>Area [m2]:</b> 11.69	<b>Height [m]:</b> 2.56	<b>Air permeability @ 50pa [m3/hm2]:</b> 12

HVAC system, ventilation, and exhaust	
Name	Rayburn Royale
Destratification fans	NO
Ventilation type	Natural
SFP for local mechanical supply & extract [W/(l/s)]	-
Heat Recovery system	-
Heat recovery seasonal efficiency	-
Variable heat recovery efficiency	-
Local mechanical exhaust	NO
Exhaust air flow rate [l/s.m2]	-
SFP for mechanical exhaust [W/(l/s)]	-
Exhaust fans location	-
SFP for system terminal units [W/(l/s)]	-
Demand-controlled ventilation	None
Flow regulation type for ventilation control	-
Night cooling maximum hours [hours/month]	-
Night cooling maximum air flow rate [l/s.m2]	-
SFP for night cooling [W/(l/s)]	-

General Lighting and controls	
Total wattage [W]	-
Design illuminance [Lux]	-
Lamp and ballast efficacy [Lumens/W]	-
Light output ratio	-
Lamp type	LED
Air-extracting luminaires	NO
Controls	MANUAL
Type of photoelectric control	-
Different sensor for back of zone	-
Photoelectric control parasitic power [W/m2]	-
Automatic zoning for daylight	YES
Occupancy sensing	NONE
Occupancy sensing parasitic power [W/m2]	-

Display lighting	
Efficient lamps	NO
Lumens per circuit wattage	-
Time switching	NO

Thermal bridges Psi values [W/mK]		
Junction type	Metal clad	Not metal clad
Roof-wall	0.28	0.12
Wall-ground floor	1.15	0.16
Wall-wall (corner)	0.25	0.09
Wall-not ground floor	0	0.07
Lintel (window/door)	1.27	0.3
Sill (window)	1.27	0.04
Jamb (window/door)	1.27	0.05

Hot water system	
Name	Default HWS
Dead leg length in this zone [m]	0

Shell & core	
Shell area for fit-out	-

Envelopes						
(Multiplier) Name	(1) Bathroom/s	(1) Bathroom/e	(1) Bathroom/n	(1) Bathroom/w	(1) Bathroom/c	(1) Bathroom/fe
Type	Wall	Wall	Wall	Wall	Flat roof	Floor or Ceiling
Area [m2]	10.93	7.88	10.93	7.88	11.69	11.69
Orientation	South	East	North	West	Horizontal	Horizontal
Adjacent space	Exterior	Same	Same	Exterior	Exterior	Same
Construction name	External Wall sanstone	Partition wall	Partition wall	External drylined wall	Roof	Intermediate floor

Windows & rooflights	
(Multiplier) Name	(1) Bathroom/s/window
In envelope	Bathroom/s
Area [m2]	0.3
Glazing name	Double glazed windows
Shading position	None (no shading)
Shading colour	-
Shading translucency	-
Transmission factor	1
Frame / Aspect ratios	0.3 / 0.64

Notes

<b>Zone name:</b> West Reception room	<b>Activity:</b> Domestic Lounge	<b>Multiplier:</b> 1
<b>Area [m2]:</b> 19.45	<b>Height [m]:</b> 2.73	<b>Air permeability @ 50pa [m3/hm2]:</b> 12

HVAC system, ventilation, and exhaust	
Name	Reception room heating
Destratification fans	NO
Ventilation type	Natural
SFP for local mechanical supply & extract [W/(l/s)]	-
Heat Recovery system	-
Heat recovery seasonal efficiency	-
Variable heat recovery efficiency	-
Local mechanical exhaust	NO
Exhaust air flow rate [l/s.m2]	-
SFP for mechanical exhaust [W/(l/s)]	-
Exhaust fans location	-
SFP for system terminal units [W/(l/s)]	-
Demand-controlled ventilation	None
Flow regulation type for ventilation control	-
Night cooling maximum hours [hours/month]	-
Night cooling maximum air flow rate [l/s.m2]	-
SFP for night cooling [W/(l/s)]	-

General Lighting and controls	
Total wattage [W]	-
Design illuminance [Lux]	-
Lamp and ballast efficacy [Lumens/W]	-
Light output ratio	-
Lamp type	Tungsten or Halogen
Air-extracting luminaires	NO
Controls	MANUAL
Type of photoelectric control	-
Different sensor for back of zone	-
Photoelectric control parasitic power [W/m2]	-
Automatic zoning for daylight	YES
Occupancy sensing	NONE
Occupancy sensing parasitic power [W/m2]	-

Display lighting	
Efficient lamps	NO
Lumens per circuit wattage	-
Time switching	NO

Thermal bridges Psi values [W/mK]		
Junction type	Metal clad	Not metal clad
Roof-wall	0.28	0.12
Wall-ground floor	1.15	0.16
Wall-wall (corner)	0.25	0.09
Wall-not ground floor	0	0.07
Lintel (window/door)	1.27	0.3
Sill (window)	1.27	0.04
Jamb (window/door)	1.27	0.05

Hot water system	
Name	Default HWS
Dead leg length in this zone [m]	0

Shell & core	
Shell area for fit-out	-

Envelopes						
(Multiplier) Name	(1) West Reception room/n	(1) West Reception room/n	(1) West Reception room/n	(1) West Reception room/n	(1) West Reception room/n	(1) West Reception room/n
Type	Wall	Wall	Wall	Wall	Floor or Ceiling	Floor or Ceiling
Area [m2]	12.29	12.09	12.29	12.09	19.45	19.45
Orientation	South	East	North	West	Horizontal	Horizontal
Adjacent space	Exterior	Same	Exterior	Exterior	Same	Underground
Construction name	Thick interior wall	Partition wall	External Wall sanstone	Wall with hangings	Intermediate floor	West reception room floor

Windows & rooflights	
(Multiplier) Name	(1) West Reception room/n/w
In envelope	West Reception room/n
Area [m2]	2.14
Glazing name	Original sashes with inte
Shading position	None (no shading)
Shading colour	-
Shading translucency	-
Transmission factor	1
Frame / Aspect ratios	0.3 / 0.7

Notes

<b>Zone name:</b> East Reception room	<b>Activity:</b> Domestic Lounge	<b>Multiplier:</b> 1
<b>Area [m2]:</b> 19.8	<b>Height [m]:</b> 2.73	<b>Air permeability @ 50pa [m3/hm2]:</b> 12

HVAC system, ventilation, and exhaust	
Name	Reception room heating
Destratification fans	NO
Ventilation type	Natural
SFP for local mechanical supply & extract [W/(l/s)]	-
Heat Recovery system	-
Heat recovery seasonal efficiency	-
Variable heat recovery efficiency	-
Local mechanical exhaust	NO
Exhaust air flow rate [l/s.m2]	-
SFP for mechanical exhaust [W/(l/s)]	-
Exhaust fans location	-
SFP for system terminal units [W/(l/s)]	-
Demand-controlled ventilation	None
Flow regulation type for ventilation control	-
Night cooling maximum hours [hours/month]	-
Night cooling maximum air flow rate [l/s.m2]	-
SFP for night cooling [W/(l/s)]	-

General Lighting and controls	
Total wattage [W]	-
Design illuminance [Lux]	-
Lamp and ballast efficacy [Lumens/W]	-
Light output ratio	-
Lamp type	LED
Air-extracting luminaires	NO
Controls	MANUAL
Type of photoelectric control	-
Different sensor for back of zone	-
Photoelectric control parasitic power [W/m2]	-
Automatic zoning for daylight	YES
Occupancy sensing	NONE
Occupancy sensing parasitic power [W/m2]	-

Display lighting	
Efficient lamps	NO
Lumens per circuit wattage	-
Time switching	NO

Thermal bridges Psi values [W/mK]		
Junction type	Metal clad	Not metal clad
Roof-wall	0.28	0.12
Wall-ground floor	1.15	0.16
Wall-wall (corner)	0.25	0.09
Wall-not ground floor	0	0.07
Lintel (window/door)	1.27	0.3
Sill (window)	1.27	0.04
Jamb (window/door)	1.27	0.05

Hot water system	
Name	Default HWS
Dead leg length in this zone [m]	0

Shell & core	
Shell area for fit-out	-

Envelopes						
(Multiplier) Name	(1) East Reception room/s	(1) East Reception room/e	(1) East Reception room/n	(1) East Reception room/w	(1) East Reception room/c	(1) East Reception room/f
Type	Wall	Wall	Wall	Wall	Floor or Ceiling	Floor or Ceiling
Area [m2]	12.18	12.12	12.18	12.12	19.8	19.8
Orientation	South	East	North	West	Horizontal	Horizontal
Adjacent space	Unheated	Conditioned	Exterior	Same	Same	Underground
Construction name	Pantry Partition wall	Party wall	Wall with hangings	Partition wall	Intermediate floor	Suspended floors

Windows & rooflights	
(Multiplier) Name	(1) East Reception room/n/w
In envelope	East Reception room/n
Area [m2]	2.23
Glazing name	Original sashes with inte
Shading position	None (no shading)
Shading colour	-
Shading translucency	-
Transmission factor	1
Frame / Aspect ratios	0.3 / 0.7

Notes

<b>Zone name:</b> Hall	<b>Activity:</b> Domestic Circulation	<b>Multiplier:</b> 1
<b>Area [m2]:</b> 19.94	<b>Height [m]:</b> 2.82	<b>Air permeability @ 50pa [m3/hm2]:</b> 12

HVAC system, ventilation, and exhaust	
Name	Underfloor heating
Destratification fans	NO
Ventilation type	Natural
SFP for local mechanical supply & extract [W/(l/s)]	-
Heat Recovery system	-
Heat recovery seasonal efficiency	-
Variable heat recovery efficiency	-
Local mechanical exhaust	NO
Exhaust air flow rate [l/s.m2]	-
SFP for mechanical exhaust [W/(l/s)]	-
Exhaust fans location	-
SFP for system terminal units [W/(l/s)]	-
Demand-controlled ventilation	None
Flow regulation type for ventilation control	-
Night cooling maximum hours [hours/month]	-
Night cooling maximum air flow rate [l/s.m2]	-
SFP for night cooling [W/(l/s)]	-

General Lighting and controls	
Total wattage [W]	-
Design illuminance [Lux]	-
Lamp and ballast efficacy [Lumens/W]	-
Light output ratio	-
Lamp type	LED
Air-extracting luminaires	NO
Controls	MANUAL
Type of photoelectric control	-
Different sensor for back of zone	-
Photoelectric control parasitic power [W/m2]	-
Automatic zoning for daylight	YES
Occupancy sensing	NONE
Occupancy sensing parasitic power [W/m2]	-

Display lighting	
Efficient lamps	NO
Lumens per circuit wattage	-
Time switching	NO

Thermal bridges Psi values [W/mK]		
Junction type	Metal clad	Not metal clad
Roof-wall	0.28	0.12
Wall-ground floor	1.15	0.16
Wall-wall (corner)	0.25	0.09
Wall-not ground floor	0	0.07
Lintel (window/door)	1.27	0.3
Sill (window)	1.27	0.04
Jamb (window/door)	1.27	0.05

Hot water system	
Name	Default HWS
Dead leg length in this zone [m]	0

Shell & core	
Shell area for fit-out	-

Envelopes				
(Multiplier) Name	(1) Hall/N/1	(1) Hall/n/2	(1) Hall/e/1	(1) Hall/e/2
Type	Wall	Wall	Wall	Wall
Area [m2]	5.5	2.45	11.93	12.49
Orientation	North	North	East	East
Adjacent space	Exterior	Same	Unheated	Same
Construction name	External Wall sanstone	Partition wall	Pantry Partition wall	Partition wall

Doors	
(Multiplier) Name	(1) Front door
In envelope	Hall/N/1
Area [m2]	2.8
Type	Personnel
Construction name	Front door

Notes