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DOC SUMMARY 12.01.21

TYRONE HOUSE, NORTON LANE, NORTON, ALDINGBOURNE, PO20 3NH

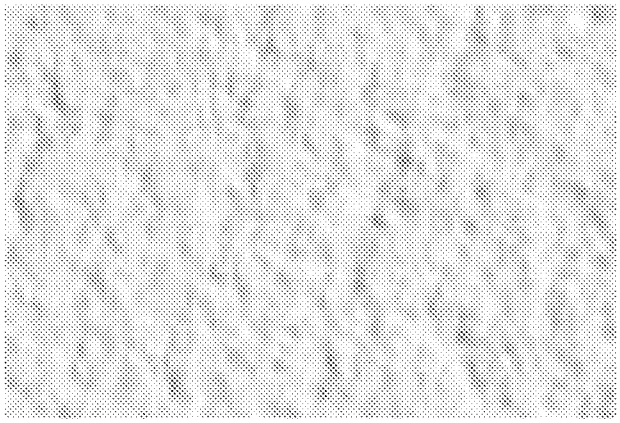
TYRONE HOUSE, NORTON LANE, NORTON, ALDINGBOURNE, PO20 3NH

AL/51/20/PL DEMOLITION OF EXISITNG HOUSE AND OUTBUILDINGS AND ERECTION OF 1 No DWELLING AND GARAGE

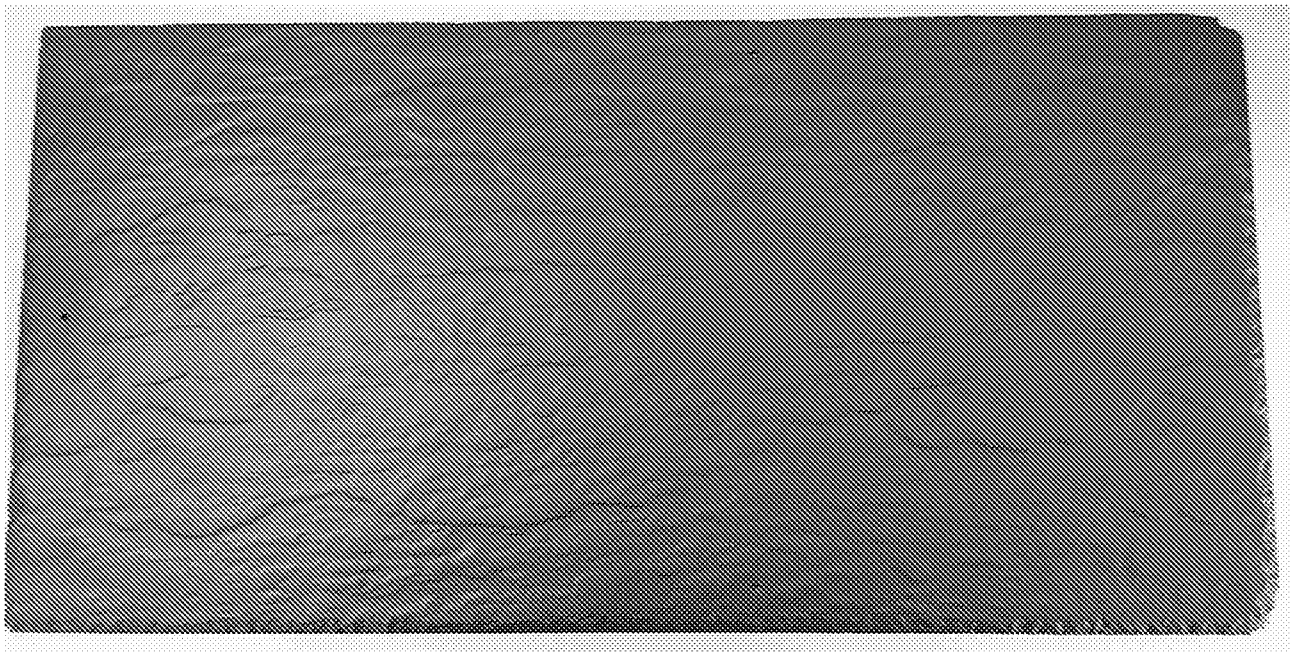
CONDITIONS 3, 5, 7 & 14

3. SCHEDULE OF MATERIALS:

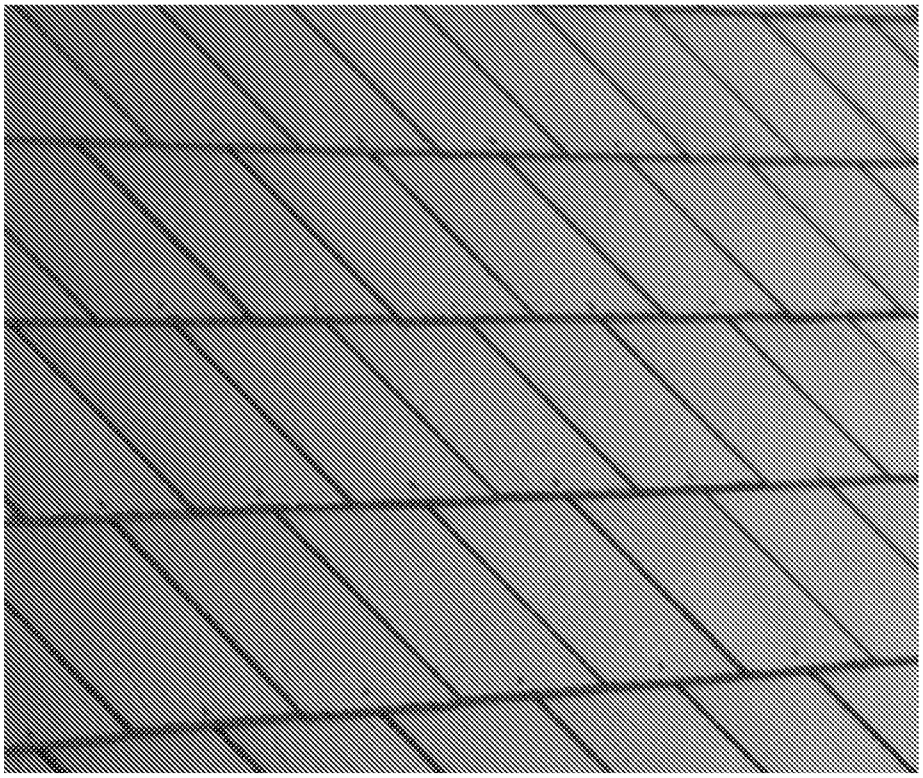
External Walls: Through colour monocouche render by Weberpral M - colour `Chalk`



Roof: Cembrit Westerland Slate



Smith Simmons & Partners
15 West Pallant, Chichester, West Sussex, PO19 1TB

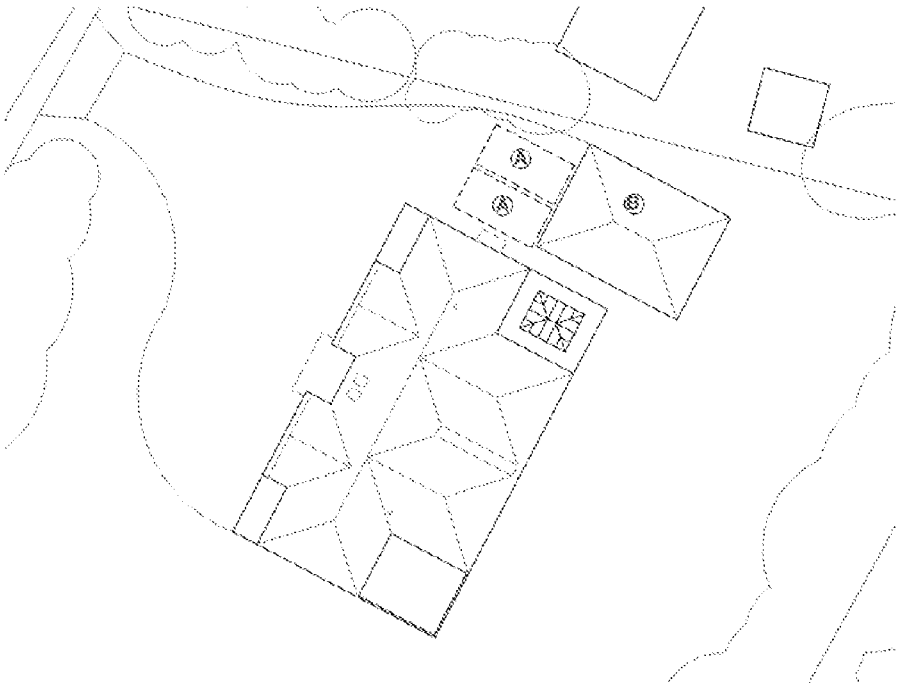


5. SUSTAINABILITY:

A 47.8% reduction in CO2 over current building regulations is proposed, achieved by improvements to the fabric of the building and the use of BioLPG Calor Gas (a renewable and sustainable gas made from waste). Please refer to the SAP calculations at the end of this statement.

7. Car Parking Spaces

Please refer to Figure 1 below.

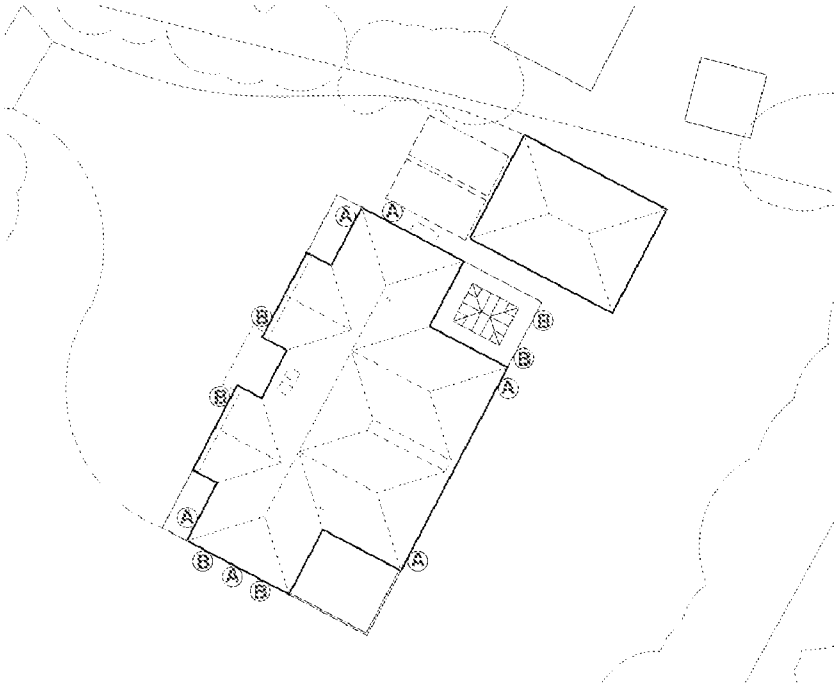


Ⓐ 2 No 2.4 x 4.8 parking spaces
Ⓑ 2 No spaces within garage

FIGURE 1 - PROPOSED PARKING

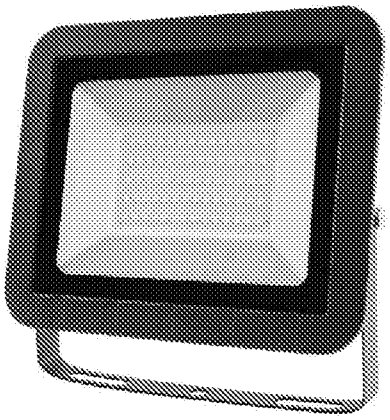
14. External lighting

Please refer to Figure 2 below.



Ⓐ Floodlight
Ⓑ Wall light

FIGURE 2 - PROPOSED EXTERNAL LIGHTING



Luxmo

Slim Floodlight LED 50W 5000K 4000Lm IP65 Body - Black

Part Code: LXSFL50WB

£33.45 Excl. VAT

Stock Availability

Choose a branch to view stock levels

1789 available for delivery

1 − + Add To Basket

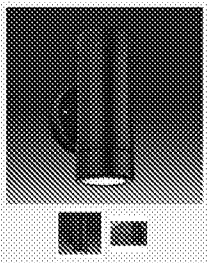
Product Description

Part Code: LXSFL50WB

- Black die cast aluminium housing, toughened glass cover
- Corrosion resistant fixing bolts and cable gland
- Pre-fitted cable: 600mm
- Beam spread: 110°
- Life hours: 20,000

A. FLOODLIGHT – SWITCHED BY PIR MOTION SENSOR WITH MANUAL OVERIDE SWITCH

Ravel 2 Light LED Wall Light - Black Resin



Ravel 2 Light LED Wall Light
Black Resin

Resin wall light.

Ideal for use in coastal areas or areas where corrosion may be a concern.

Twin lights output which may be mounted in any desired direction.

15 years anti-corrosion guarantee.

- IP44 rated.
- Supplied with 2 x 4w LED GU10 lamp. (Max 7w)
- Total: 308 lumens.
- Colour: 3000K.

Dimensions:
Height: 160mm.
Projection: 90mm.
Width: 80mm.

Product Code	Description	Price ex VAT	Quantity
FL 4904BK	Ravel 2 Light LED Wall Light - Black Resin	EACH £19.85	1 Add

B. WALL LIGHT – MANUAL SWITCH

Client : Kieran Napthine
C/o Smith Simmons & Partners

Calculation : Thermal Check in Accordance with Approved Document L1A (2013)

Calculation Ref : SAP/2020/022/01

Thermal Solutions
www.thermalsolutions.biz

Dwelling Address or House Type :

New Dwelling at Tyrone House, Norton Lane, Norton, Chichester, PO20 3NH

Building Regulation L1(a)(i) Compliance

Target Emissions Rate (CO_2)	**14.50**
Dwelling Emissions Rate (CO_2)	**7.57**
Dwelling Emissions ≤ Target Emissions, therefore :	**PASS**
Percentage Reduction of CO_2 from insulation and biogas fuel	**47.8%**

Target Fabric Energy Efficiency	**59.30**
Actual Fabric Energy Efficiency	**53.20**
Actual ≤ Target, therefore :	**PASS**

SAP Energy Rating	**73**

The risk of solar over heating has been assessed as : and therefore complies with ADL1A, paragraph 2.40	**Slight**

Calculation By : Ian Sheppard (QUID207615)
Thermal Solutions
21 Lincoln Avenue, Rose Green, Bognor Regis, West Sussex, PO21 3EJ

Quidos Accredited

Dwelling Address/House Type : New Dwelling at Tyrone House, Norton Lane, Norton, Chichester, PO20 3NH

Calculation Reference : SAP/2020/022/01

CONSTRUCTION & INSULATION	U-Value
External wall 1 External render, 100mm Hemelite Standard block, 51mm clear cavity, 9mm OSB, 140 x 38mm timber stud with 125mm Actis Hybris insulation between, 25mm battens over studs, 12.5mm plasterboard - U value from supplier Parnell Homes Heat capacity = 0.0125 x 700 = 8.75	0.22
External wall 2 - stud closing off loft voids Tiles, battens, felt, rafters, vented void, nominal 100 x 50mm timber studs with 150mm Celotex XR4000 between, 15mm plasterboard finish - U value includes Ru = 0.50 m² K/W - Heat Capacity = 0.015 x 700 = 10.50	0.22
Stud Partitions Timber studs with 9mm OSB and 15mm plasterboard both sides Heat Capacity = (0.015 x 700) + (0.009 x 500 x 1.6) = 17.70	0.00
Roof 1 - vaulted ceiling over first floor Tiles, battens, felt, nominal 200 x 50mm rafters at 400mm centres with 150mm Celotex XR4000 between rafters, 52.5mm Celotex PL4000 (40mm insulation + 12.5mm plasterboard) to sloping soffit - Heat Capacity = 0.0125 x 700 = 8.75	0.16
Roof 2 Tiles, battens, felt, rafters, vented loft void, nominal 200 x 50mm timber joists with 100mm Knauf Loft Roll 40 between and 2 x 150mm Loft Roll 40 cross laid over joists, 15mm plasterboard - Heat capacity = 10.50	0.10
Roof 3 - flat roof Waterproofing, 18mm OSB, 150mm Celotex XR4000, 18mm OSB, firrings on 170 x 47mm timber joists, 15mm plasterboard Heat Capacity = 10.50	0.14
Ground Floor 75mm screed, 150mm Celotex XR4000 over beam and block floor with dense concrete infill blocks Heat capacity = 0.075 x 1200 = 90	0.12
First Floor 22mm floorboards on suspended composit joists with insulation between, with 15mm plasterboard to soffit Heat Capacities: as ceiling = 10.50 as floor = 0.022 x 1.6 x 500 = 17.6	0.00
Windows Timber frame, double glazed with low "E" glass etc.... To achieve average U value as shown	1.40
French Doors Timber frame, double glazed with low "E" glass etc.... To achieve average U value as shown	1.20
Patio Doors Aluminium frame, double glazed with low "E" glass etc.... To achieve average U value as shown	1.80
Entrance Door Solid door and frame to achieve U value as shown	0.90
Single Side Door Solid door and frame to achieve U value as shown	1.20
Roof Lights Keylite Hi-Therm WCP05HT double glazed units	1.30
Lantern Timber or UPVc frame, double glazed with low "E" glass etc.... To achieve average U value as shown	1.20
The above notes may not include all elements, such as membranes or vapour barriers	

Dwelling Address/House Type : New Dwelling at Tyrone House, Norton Lane, Norton, Chichester, PO20 3NH

Calculation Reference : SAP/2020/022/01

Heating, Orientation & Ventilation	
Space Heating Condensing boiler with automatic ignition using Biogas fuel, serving underfloor heating on ground floor, radiators at first floor and domestic hot water - Minimum boiler SEDBUK rating as shown (2009 definition)	SEDBUK 89%
Heating Controls : Full time and temperature zone controls & boiler interlock device	
Domestic Hot Water By the above boiler, utilising 2 x 250 litre Megaflo Eco indirect storage cylinders with separate timer, thermostat and fully insulated primary pipework - Cylinders have factory fitted foam insulation each with 1.61 kW.h/day storage losses	
Secondary Heater Closed wood burning stove - HETAS approved appliance	
Low Energy Internal Lighting 100% of fixed light fittings include Low Energy Lamps	
Orientation and Shading : Front elevation faces North West with zero sides sheltered with average overshading.	
Air Permeability & Ventilation Air permeability taken as 5.0 $m^3/hr/m^2$. Decentralised continuous mechanical ventilation using iCONstant by Airflow Ltd to kitchen and wet rooms - and one chimney	

Dwelling Address/House Type : New Dwelling at Tyrone House, Norton Lane, Norton, Chichester, PO20 3NH

Calculation Reference : SAP/2020/022/01

Thermal Bridging

Thermal bridging at openings and junctions of external walls with roofs & floors etc, are assumed to comply with details below. An appropriate system will be set in place by the builder to monitor and confirm their implimentation - this system to be agreed with Building Control
The application of the details must also be co-ordinated by a responsible person

Thermal bridging at the following junctions will comply with current Accredited Construction Details (2006)

Item	Junction in or with external wall	ψ value
E2	lintels - details TFW - WD - 01	0.300
E3	Cills - Detail TFW - WD - 02	0.040
E4	Reveal - Detail TFW - WD - 03	0.050
E5	Ground floor - detail TFW - GF - 02	0.160
E6	First floor - detail TFW - IF - 01	0.070
E10	Eaves - ins at joist level - detail TFW - RE - 01	0.060
E11	Eaves - insulated at rafter level - detail TFW - RE - 06	0.040
E13	Gable - insulation at rafter level - detail TFW - RG - 03	0.040
E16	External corners - detail TFW - EW - 01	0.09

The Accredited Details may be found on the link below

http://www.planningportal.gov.uk/buildingregulations/approveddocuments/partl/bcassociateddocuments9/acd

The following junctions have no accredited details or those available have been deemed unpractical, and so a default heat loss will be used, in accordance with Table K

Item	Junctions	ψ value
E1	lintels over patio doors	1.000
E14	Wall and flat roof	0.080
E16	Corner between patio doors	0.180
E17	Internal corners	0.000

Where no details are available, the principles of sealing and minimising thermal bridging should be adhered to

Dwelling Address/House Type : New Dwelling at Tyrone House, Norton Lane, Norton, Chichester, PO20 3NH

Calculation Reference : SAP/2020/022/01

ACTUAL ELEMENT AREAS

GROUND FLOOR	(19.49 x 11.74) - (3.58 x 1.46)	= 223.59	m²
U PERIMETRE	19.49 + 13.20 + 32.69	= 65.38	m
GROUND FLOOR AVH	((6.41 x 3.16) + (217.18 x 2.55)) / 223.59	= 2.57	m
FIRST FLOOR	(11.82 x 4.70) + (19.51 x 5.56) + (8.90 x 1.46)	= 177.02	m²
FIRST FLOOR AVH	((3.31 x 3.37) + (21.11 x 3.98) + (152.60 x 2.72)) / 177.02	= 2.88	m
ROOFS	**Roof 1 - vaulted**		
	[(1.56 x 1.18) + (1.00 x 21.11) / Cos 44] - 1.84	= 30.07	m²
	Roof 2 - loft void		
	223.59 - 21.11 - (1.56 x 2.12)	= 199.17	m²
	Roof 3 - flat		
	(7.68 x 4.70) + (7.04 x 1.46) - 6.41	= 39.96	m²
WINDOWS	**In GF wall 1**		
	(4.80 x 1.73) + (8.04 x 1.53) + (1.60 x 1.49) + (1.60 x 1.30)	= 25.07	m²
	In FF wall 1 - including bullseye windows		
	(17.60 x 1.32) + (2.00 x 0.43)	= 24.09	m²
	Total	= **49.16**	**m²**
	Facing front		
	(8.04 x 1.53) + (8.00 x 1.32) + (2.00 x 0.43)	= 23.72	m²
	Facing rear		
	(4.80 x 1.73) + (6.40 x 1.32)	= 16.75	m²
	Facing left		
	(1.60 x 1.49) + (2.40 x 1.32)	= 5.55	m²
	Facing right		
	(1.60 x 1.30) + (0.80 x 1.32)	= 3.14	m²
	Total	= **49.16**	**m²**
PATIO DOORS	**Facing rear in GF wall 1**		
	4.99 x 2.30	= 11.48	m²
	Facing left in GF wall 1		
	4.34 x 2.30	= 9.98	m²
FRENCH DOORS	**Facing rear in GF wall 1**		
	1.60 x 2.30	= 3.68	m²
	Facing rear in FF wall 1		
	1.60 x 2.00	= 3.20	m²
	Total facing rear	= **6.88**	**m²**
	Facing left in FF wall 1		
	1.61 x 2.00	= 3.22	m²

Dwelling Address/House Type : New Dwelling at Tyrone House, Norton Lane, Norton, Chichester, PO20 3NH

Calculation Reference : SAP/2020/022/01

OTHER DOORS	**Entrance**			
	2.10 x 2.26	=	4.75	m²
	Single side doors - facing right			
	1.01 x 2.26	=	2.28	m²
ROOF LIGHTS	**Velux facing front**			
	(0.78 x 1.18) + (0.78 x 1.18)	=	1.84	m²
	Lantern			
	2.34 x 2.74	=	6.41	m²
NETT EXTERNAL WALLS	**GF wall 1**			
	(65.38 x 2.55) - 25.07 - 11.48 - 9.98 - 3.68 - 4.75 - 2.28	=	109.48	m²
	FF wall 1			
	(65.38 x 2.72) + (4.45 x 2.16) + (14.74 x 0.18) - 24.09 - 3.20			
	- 3.22	=	156.94	m²
	Total wall 1	=	**266.42**	**m²**
	FF wall 2			
	(4.45 x 2.16) + (1.72 x 0.30) + (3.44 x 0.47) + (1.72 x 0.38) +			
	(2.51 x 1.56) + (2.12 x 1.27) + (2.12 x 1.27)	=	21.70	m²
PARTITIONS	**GF stud**			
	55.85 x 2.00 x 2.55	=	284.84	m²
	FF Stud wall			
	64.58 x 2.00 x 2.43	=	313.86	m²
ZONE 1	(12.86 x 4.51) + (2.00 x 0.18) + (7.51 x 7.05) + (0.26 x 1.28)	=	111.64	m²

THERMAL BRIDGING - COMPLIANT JUNCTIONS WITH EXTERNAL WALL

timber lintels	1.60 + 1.60 + 1.60 + 1.60 + 1.01 + 1.60 + 1.60 + 1.60			
	0.82 + 2.10 + 0.82 + 1.60 + 1.60 + 3.20 + 16.00 + 4.80	=	43.15	E2
Cills	43.15 - 1.60 - 1.01 - 2.10 - 1.60 - 1.60 - 1.60	=	33.64	E3
Jambs	(4.00 x 2.30) + (4.00 x 2.26) + (4.00 x 2.00) + (6.00 x 1.73)			
	(12.00 x 1.53) + (2.00 x 1.30) + (24.00 x 1.32)	=	89.26	E4
Ground floor		=	65.38	E5
First floor		=	65.38	E6
Eaves - ins at joist level	65.38 - 5.84 - 4.45 - 4.45	=	50.64	E10
Eaves - ins at rafter level	1.46 x 4.00	=	5.84	E11
Gable - ins at rafter level	8.90 x 1.390	=	12.37	E13
Corners (external)	(5.00 x 2.55) + (10.00 x 2.72)	=	39.95	E16

THERMAL BRIDGING - DEFAULT JUNCTIONS

lintels over patio doors	4.99 + 4.34	=	9.33	E1
Flat roof	3.85 + 4.70 + 3.85 + 4.70 + 3.52 + 1.46 + 3.52 + 1.46	=	27.06	E14
Corner tween patio doors	1.00 x 2.55	=	2.55	E16
Corners (internal)	(2.00 x 2.55) + (6.00 x 2.72)	=	21.42	E17

Project Information

Building type	Detached house		
Reference	SAP/2020/022/01		
Date	18 December 2020		
Client	Kieran Napthine C/o Smith Simmons & Partners	Project	Tyrone House Norton Lane Norton Chichester PO20 3NH

REGULATION COMPLIANCE REPORT - Approved Document L1A, 2012 Edition, England
assessed by program JPA Designer version 6.05.046, printed on 22/12/2020 at 19:50:20

New dwelling as designed

1 TER and DER

Fuel for main heating system: biogas (including anaerobic digestion) (fuel factor = 1.06)

Target Carbon Dioxide Emission Rate	TER = 14.50	
Dwelling Carbon Dioxide Emission Rate	DER = 7.57	OK

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	TFEE = 59.3	
Dwelling Fabric Energy Efficiency (DFEE)	DFEE = 53.2	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

2b Fabric U-values

Element	Average	Highest	
Wall	0.22 (max. 0.30)	0.22 (max. 0.70)	OK
Floor	0.12 (max. 0.25)	0.12 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.16 (max. 0.35)	OK
Openings	1.42 (max. 2.00)	1.80 (max. 3.30)	OK

3 Air permeability

Air permeability at 50 pascals:	5.00	OK
Maximum :	10.00	

JPA Designer Version 6.03x , SAP Version 9.92
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C:\Users\Ian Sheppard\Documents\JPA calculations\SAPs 2020\SAP_2020_022.JDP SAP/2020/022/01
Approval of JPA Designer by BRE applies only to the software, data is not subject to quality control procedures, users are themselves responsible for the accuracy of the data. The results of the calculation should not be accepted without first checking the input data.
ARUN DISTRICT COUNCIL RECEIVED

4 Heating efficiency

Main heating system:

Boiler and underfloor heating, biogas

Source of efficiency: from manufacturer

Efficiency: 89.0% SEDBUK2009
Minimum: 88.0% OK

Main heating system 2:

Boiler and radiators, biogas

Source of efficiency: from manufacturer

Efficiency: 89.0% SEDBUK2009
Minimum: 88.0% OK

Secondary heating system:

Room heater systems - Solid fuel
Closed room heater
Efficiency: 65.00%
Minimum: 65.00% OK

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5 Cylinder insulation

Hot water storage

Manufacturer's declared cylinder loss factor (kWh/day)		3.22	
Permitted by DBSCG		3.92	OK
Primary pipework insulated	Yes		OK

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6 Controls

(Also refer to "Domestic Building Services Compliance Guide" by the DCLG)

Space heating controls	Time and temperature zone control	OK
	Cylinderstat - Yes	OK
	Independent timer for DHW - Yes	OK
Boiler Interlock	Yes	OK

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7 Low energy lights

Percentage of fixed lights with low-energy fittings: 100.0%
Minimum: 75.0% OK

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8 Mechanical ventilation

Worst case specific fan power : 0.19
Maximum : 0.7W/(litre/sec) for each fan OK

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9 Summertime temperature

Overheating risk (South East England): OK

Slight OK

Based on:

Thermal mass parameter :	102.54
Overshading :	Average or unknown (20-60 % sky blocked)

Orientation : NorthWest

Ventilation rate :	4.00

Blinds/curtains :

None with blinds/shutters closed 0.00% of daylight hours

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ARUN DISTRICT COUNCIL Approved

10 Key features

Ground floors U-value 0.12 W/m²K
Pitched roofs insulated between joists U-value 0.10 W/m²K
Solid door U-value 0.90 W/m²K
Low-carbon or renewable for secondary heating fuel.
Wood logs

JPA Designer Version 6.03x , SAP Version 9.92
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C:\Users\Ian Sheppard\Documents\JPA calculations\SAPs 2020\SAP_2020_022.JDP SAP/2020/022/01
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ARUN DISTRICT COUNCIL 2020/2021