Professionals delivering value

CNC Consultancy Services

Energy Consultancy

Little Grove Boxworth

Design Stage Report

Standard Assessment Procedure (SAP) &
Predicated Energy Assessment (PEA)

CNC CS
Project Ref:
EC600

RICS

Professionals delivering value

CNC Consultancy Services Limited
Thorpe Lodge, 1 Yarmouth Road,
Norwich NR7 0DU
T: 01603 430149 F: 01603 430541
E: enquiries@cncconsultancy.co.uk
W: www.cncconsultancy.co.uk

Clients Name:
Mr & Mrs M Jenkins

CNC CS Project Number:
EC600

Project Address:
Little Grove, Boxworth

Project Description:
New Dwelling

Energy Consultant:
Marco Valori
(NHER Membership No. 4544)

Service:
Assessment, Calculation and Recommendations Report using NHER accredited SAP 2009 software to produce the Standard Assessment Procedure (SAP) and Energy Performance Certificate (EPC)

Date: 12th March 2012

Contents

1.0 Introduction

We have been engaged by Beattie Passive to carry out a Standard Assessment Procedure (SAP) and Energy Performance Certificate (EPC) for the proposed new dwelling at Little Grove, Boxworth.

The purpose of this report is to advise the client on the energy performance of the new dwelling and to demonstrate compliance with Approved Document L1A of the Building Regulations 2000 (as amended).

Our terms of reference relate to our quotation dated 11.01.2012 and the Terms and Conditions contract dated 09.03.2012.

2.0 Information provided to carry out the assessments

Our assessment is based on the following information supplied by our client's agent Beattie Passive:

Drawings: 232-A3-WD10 e, 232-A1-WD 2d, 232-A1-WD 3d, 232-A1-WD 4d, 232-A3-WD 14

3.0 Clients Brief

The client requires the standard service to show compliance with Approved Document L1A of the Building Regulations 2000 (as amended) and to provide an Energy Performance Certificate (EPC) on completion.

4.0 Assumptions made

We have assumed the following when carrying out the CO_2 Emissions Report:

- 100% internal lights will be dedicated energy efficient.
- The proposed wood burners will be at least 75% efficient.
- The proposed hot water cylinder will have a declared heat loss factor of 1.63Kwh/day (eg Santon)

5.0 Assessment Methodology

The Standard Assessment Procedure (SAP) 2009 has been adopted by government as part of the UK national methodology for the calculation of the energy performance of new buildings. It is used to demonstrate compliance with building regulations for dwellings - Part L (England and Wales) and to provide energy ratings for dwellings.

The program calculates the annual energy costs for space and water heating, and lighting. These depend on the insulation and air tightness of the house and the efficiency and control of the heating system. The calculation uses the Building Research Establishment's Domestic Energy Model (BREDEM). Also the program can calculate the total CO_2 emissions generated if this is part of the clients brief and T+C Contract.

6.0 Conclusion

The design information pertaining to the design stage SAP is contained in the enclosed SAP data sheets within this report.

We have been able to demonstrate that the proposed dwelling complies with the requirements of Approved Document L1A of the Building Regulations 2000 (as amended) based on the modelling of the proposed building, the information supplied and the assumptions and summary of assessments as stated above.

The results of our assessment are as follows:

Dwelling Emission Rating (DER)	-13.42KgCO_2/m^2.annum
Target Emission Rating (TER)	22.81KgCO_2/m^2.annum

Compliance is achieved because the Dwelling Emission Rating (DER) is lower than the Target Emission Rating (TER).

7.0 As-Built Stage

It is important that you agree with the design parameters and assumptions made, as changes to the design parameters during the construction of the dwelling may effect the overall as-built SAP assessment. The proposed changes could result in enhancements having to be made to bring the as-built SAP back into compliance and may delay the issuing of a completion certificate from the building control body. *Therefore, it is important that any changes are reported to us so we can model the overall effect on the assessment and relay our comments back to the design team and contractor.*

Upon completion of the works an as-built SAP will be required, taking into account the as-built construction and any changes or modifications on site. We will ask you to confirm in writing that the as-built status is as per our original assessment, assumptions and design parameters or confirm in writing what changes have been made so we can re-calculate these changes. Assuming any changes do not affect the overall compliance status an Energy Performance Certificate will be formally issued to you.

There is certain documentary evidence required prior to completion and before we can formally issue the final Energy Performance Certificate. These include;

- Completed air test certificate
- Fully completed/satisfactory benchmark log book/commissioning certificate for the heating system,
- Full postal address agreed with Royal Mail or the local authority and
- Declaration that the construction conforms to the design stage SAP assessment.

Without the above we will not be able to formally issue the as-built SAP assessment and Energy Performance Certificate. We recommend that you contact us at least 4 weeks before handover so we are able to produce the as-built SAP and Energy Performance Certificate.

Report Prepared by:

Marco Valori
Energy Consultant

Design Stage
L1A 2010 Regulation Analysis

L1A 2010 - Regulations Compliance Report

This design final submission provides evidence towards compliance with Part L of the Building Regulations, in accordance with Appendix A of AD L1A. It has been carried out by an Authorised SAP Assessor and can be accepted for Building Control purposes without further checking. It has been prepared from plans and specifications and may not reflect the 'as built' property.This report covers only items included within the SAP and is not a complete report of regulations compliance.

Assessor name	Mr Marco Valori	Assessor number	4544
Client	Mr & Mrs M Jenkins	Last modified	12/03/2012
Address	Plot 1 Little Grove, Boxworth, Cambridge, Cambridgeshire, CB23		

Check	Evidence	Produced by	OK?
Criterion 1: predicted carbon dioxide emission from proposed dwelling does not exceed the target			
TER (kg $CO_2/m^2.a$)	Fuel = Electricity Fuel factor = 1.47 TER = 22.81	Authorised SAP Assessor	
DER for dwelling as designed (kg $CO_2/m^2.a$)	DER = -13.42	Authorised SAP Assessor	
Are emissions from dwelling as designed less than or equal to the target?	DER -13.42 < TER 22.81	Authorised SAP Assessor	Passed
Criterion 2: the performance of the building fabric and the heating, hot water and fixed lighting systems should be no worse than the design limits			
Fabric U-values			
Are all U-values better than the design limits in Table 2?	**Element** / **Weighted average** / **Highest** Wall: 0.12 (max 0.30) / 0.12 (max 0.70) Party wall: (no party wall) Floor: 0.08 (max 0.25) / 0.08 (max 0.70) Roof: 0.12 (max 0.20) / 0.12 (max 0.35) Openings: 0.97 (max 2.00) / 1.20 (max 3.30)	Authorised SAP Assessor	Passed
Heating and hot water systems			
Does the efficiency of the heating systems meet the minimum value set out in the Domestic Heating Compliance Guide?	Main heating system: Electricity, Heat pump - wet system Air-to-water Secondary heating system: Room heaters - Dual fuel (mineral and wood) Data from manufacturer, tested to BS EN 13240 Proposed wood burner Efficiency = 75.00% Minimum = 65.00%	Authorised SAP Assessor	Passed
Does the insulation of the hot water cylinder meet the standards set out in the Domestic Heating Compliance Guide?	Cylinder volume = 185.00 litres Declared cylinder loss = 1.63kWh/day Maximum permitted cylinder loss = 2.13kWh/day Primary hot water pipes are insulated	Authorised SAP Assessor	Passed
Do controls meet the minimum controls provision set out in the Domestic Heating Compliance Guide?	Space heating control: Time and temperature zone control Hot water control: No boiler interlock (main system 1) Cylinder thermostat Separate water control	Authorised SAP Assessor	Passed
Fixed internal lighting			

Check	Evidence	Produced by	OK?
Does fixed internal lighting comply with paragraphs 42 to 44?	Schedule of installed fixed internal lighting Standard lights = 0 Low energy lights = 40 Percentage of low energy lights = 100 % Minimum = 75 %	Authorised SAP Assessor	Passed
Criterion 3: the dwelling has appropriate passive control measures to limit solar gains			
Does the dwelling have a strong tendency to high summertime temperatures?	Overheating risk (June) = Not significant Overheating risk (July) = Slight Overheating risk (August) = Slight Region = East Anglia Thermal mass parameter = 100.00 Ventilation rate in hot weather = 4.00 ach Blinds/curtains = None	Authorised SAP Assessor	Passed
Criterion 4: the performance of the dwelling, as designed, is consistent with the DER			
Design air permeability ($m^3/(h.m^2)$ at 50Pa)	Design air permeability = 1.00 Max air permeability = 10.00	Authorised SAP Assessor	Passed
Mechanical ventilation system Specific fan power (SFP)	Mechanical ventilation with heat recovery: SFP = 0.81 W/(litre/sec) Max SFP = 1.5 W/(litre/sec) Heat recovery efficiency = 91.00 % Min heat recovery efficiency = 70.00 %	Authorised SAP Assessor	Passed

Check	Evidence	Produced by	OK?
Have the key features of the design been included (or bettered) in practice?	The following walls/wall have a U-value less than 0.2W/m²K: • Wall 1 (0.12) The following floors/floor have a U-value less than 0.2W/m²K: • Floor 1 (0.08) The following roofs/roof have a U-value less than 0.13W/m²K: • Roof 1 (0.12) The following openings have a U-value less than 1.5W/m²K: • Window reference 18 (0.90) • Window reference 19 (0.90) • Window reference 20 (0.90) • Window reference 21 (0.90) • Window reference 22 (0.90) • Window reference 23 (0.90) • Window reference 24 (0.90) • Window reference 25 (0.90) • Window reference 26 (0.90) • Window reference 27 (0.90) • Window reference 28 (0.90) • Window reference 29 (0.90) • Window reference 30 (0.90) • Window reference 31 (0.90) • Window reference 32 (0.90) • Window reference 33 (0.90) • Window reference 34 (0.90) • Window reference 35 (0.90) • Window reference 36 (0.90) • Window reference 37 (0.90) • Window reference 38 (0.90) • Window reference 39 (0.90) • Window reference 40 (0.90) • Window reference 41 (1.20) • Rooflight reference 42 (1.20) • Rooflight reference 43 (1.20) • Rooflight reference 44 (1.20) • Rooflight reference 45 (1.20) • Half glazed door reference 1 (0.90) • Half glazed door reference 2 (0.90) • Window reference 3 (0.90) • Window reference 4 (0.90) • Window reference 5 (0.90) • Window reference 6 (0.90) • Window reference 7 (0.90) • Window reference 8 (0.90) • Window reference 9 (0.90) • Window reference 10 (0.90) • Window reference 11 (0.90) • Window reference 12 (0.90) • Window reference 13 (0.90) • Window reference 14 (0.90) • Window reference 15 (0.90) • Window reference 16 (0.90) • Window reference 17 (0.90) • Rooflight reference 46 (1.20) Design air permeability of 1 m³/(h.m²) is less than 5 m³/(h.m²) at 50 Pa Secondary heating system present - Dual fuel (mineral and wood) Use of the following low carbon or renewable technologies: • Photovoltaic array	Authorised SAP Assessor	

Design Stage
SAP Data Sheet

Data Input Report

This design submission has been carried out by an Authorised SAP Assessor. It has been prepared from plans and specifications and may not reflect the property as constructed.

Assessor name	Mr Marco Valori	Assessor number	4544
Client	Mr & Mrs M Jenkins	Last modified	12/03/2012
Address	Plot 1 Little Grove, Boxworth, Cambridge, Cambridgeshire, CB23		

Dwelling

Property type:	House		
Built form:	Detached	Year built:	2012
Tariff:	Standard	Assess summer overheating:	Yes
Thermal mass:	Low	Thermal mass parameter:	100.00
Separated heated conservatory:	No	Degree day region:	East Anglia
Sheltered sides:	2	Terrain:	Rural

Storeys:

Name	Area (m²)	Height (m)
Lowest occupied	317.70	3.90
+1	241.87	2.69
+2	189.40	2.20

Floors

Name	Type	Construction	Storey Location	Living Area (m²)	Area (m²)	U-value (W/m²K)
Floor 1	Ground	Suspended timber sealed	Lowest occupied	48.23	317.70	0.08

Living area that has no heat loss: 0.00

Walls

Name	Type	Construction	Gross Area (m²)	U-value (W/m²K)
Wall 1	External	Cavity	520.19	0.12

Roofs

Name	Construction	Gross Area (m²)	U-value (W/m²K)
Roof 1	Pitched (rafters)	389.30	0.12

Openings

Opening Ref: 18 Window, Double glazed (low-E), ' WG20', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	North
Overshading:	Average / Unknown	Width (m):	0.68	Height (m):	0.80
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 19 Window, Double glazed (low-E), ' WG21', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	North
Overshading:	Average / Unknown	Width (m):	1.81	Height (m):	1.50
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 20 Window, Double glazed (low-E), ' WG22', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	East
Overshading:	Average / Unknown	Width (m):	1.81	Height (m):	1.50
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 21 Window, Double glazed (low-E), ' WF1', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	East

Overshading:	Average / Unknown	Width (m):	3.09	Height (m):	2.60
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 22 Window, Double glazed (low-E), ' WF2', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	East
Overshading:	Average / Unknown	Width (m):	2.30	Height (m):	1.40
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 23 Window, Double glazed (low-E), ' WF3', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	North
Overshading:	Average / Unknown	Width (m):	1.10	Height (m):	2.10
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 24 Window, Double glazed (low-E), ' WF4', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	East
Overshading:	Average / Unknown	Width (m):	1.10	Height (m):	2.10
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 25 Window, Double glazed (low-E), ' WF5', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	North
Overshading:	Average / Unknown	Width (m):	1.14	Height (m):	2.10
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 26 Window, Double glazed (low-E), ' WF6', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	North
Overshading:	Average / Unknown	Width (m):	1.81	Height (m):	1.10
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 27 Window, Double glazed (low-E), ' WF7', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	South
Overshading:	Average / Unknown	Width (m):	1.81	Height (m):	1.10
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 28 Window, Double glazed (low-E), ' WF8', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	South
Overshading:	Average / Unknown	Width (m):	1.36	Height (m):	0.70
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 29 Window, Double glazed (low-E), ' WF9', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	South
Overshading:	Average / Unknown	Width (m):	1.36	Height (m):	0.70
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 30 Window, Double glazed (low-E), ' WF10', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	South
Overshading:	Average / Unknown	Width (m):	1.81	Height (m):	1.35
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 31 Window, Double glazed (low-E), ' WF11', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	West
Overshading:	Average / Unknown	Width (m):	1.81	Height (m):	1.40
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 32 Window, Double glazed (low-E), ' WF12', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	South
Overshading:	Average / Unknown	Width (m):	1.60	Height (m):	0.80
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 33 Window, Double glazed (low-E), ' WF16', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	South
Overshading:	Average / Unknown	Width (m):	0.91	Height (m):	1.20
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 34 Window, Double glazed (low-E), ' WF17', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	South
Overshading:	Average / Unknown	Width (m):	2.26	Height (m):	1.10

Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 35 Window, Double glazed (low-E), ' WF18', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	West
Overshading:	Average / Unknown	Width (m):	3.84	Height (m):	2.10
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 36 Window, Double glazed (low-E), ' WF19', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	North
Overshading:	Average / Unknown	Width (m):	2.26	Height (m):	1.10
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 37 Window, Double glazed (low-E), ' WF20', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	North
Overshading:	Average / Unknown	Width (m):	1.81	Height (m):	0.70
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 38 Window, Double glazed (low-E), ' WF21', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	North
Overshading:	Average / Unknown	Width (m):	1.81	Height (m):	0.70
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 39 Window, Double glazed (low-E), ' WF22', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	North
Overshading:	Average / Unknown	Width (m):	1.81	Height (m):	1.50
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 40 Window, Double glazed (low-E), ' WF23', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	East
Overshading:	Average / Unknown	Width (m):	1.80	Height (m):	1.30
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 41 Window, Double glazed (low-E), ' WG13/14', master: Yes, linked to: 0

Location:	Wall 1	Source:	From Manufacturer	Orientation:	East
Overshading:	Average / Unknown	Width (m):	9.01	Height (m):	2.30
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	1.20

Opening Ref: 42 Rooflight, Double glazed (low-E), ' RW1', master: Yes, linked to: 0

Location:	Roof 1	Source:	From Manufacturer	Orientation:	West
Overshading:	None / Very little	Width (m):	2.40	Height (m):	2.40
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	1.20

Opening Ref: 43 Rooflight, Double glazed (low-E), ' RW2', master: No, linked to: 42

Location:	Roof 1	Source:	From Manufacturer	Orientation:	West
Overshading:	None / Very little	Width (m):	2.40	Height (m):	2.40
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	1.20

Opening Ref: 44 Rooflight, Double glazed (low-E), ' RW3', master: No, linked to: 42

Location:	Roof 1	Source:	From Manufacturer	Orientation:	East
Overshading:	None / Very little	Width (m):	0.78	Height (m):	1.18
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	1.20

Opening Ref: 45 Rooflight, Double glazed (low-E), ' RW4', master: No, linked to: 42

Location:	Roof 1	Source:	From Manufacturer	Orientation:	East
Overshading:	None / Very little	Width (m):	0.78	Height (m):	1.18
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	1.20

Opening Ref: 1 Half glazed door, Double glazed (low-E), ' DG1', master: Yes, linked to: 0

Location:	Wall 1	Source:	From Manufacturer	Orientation:	N/A
Overshading:	N/A	Width (m):	3.16	Height (m):	2.30
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 2 Half glazed door, Double glazed (low-E), ' DG2', master: No, linked to: 1

Location:	Wall 1	Source:	From Manufacturer	Orientation:	N/A
Overshading:	N/A	Width (m):	1.36	Height (m):	2.10
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 3 Window, Double glazed (low-E), ' WG2', master: Yes, linked to: 0

Location:	Wall 1	Source:	From Manufacturer	Orientation:	East
Overshading:	Average / Unknown	Width (m):	3.61	Height (m):	1.50
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 4 Window, Double glazed (low-E), ' WG3', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	North
Overshading:	Average / Unknown	Width (m):	1.14	Height (m):	2.00
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 5 Window, Double glazed (low-E), ' WG4', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	North
Overshading:	Average / Unknown	Width (m):	1.81	Height (m):	1.20
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 6 Window, Double glazed (low-E), ' WG5', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	East
Overshading:	Average / Unknown	Width (m):	1.80	Height (m):	1.30
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 7 Window, Double glazed (low-E), ' WG6', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	South
Overshading:	Average / Unknown	Width (m):	2.30	Height (m):	1.50
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 8 Window, Double glazed (low-E), ' WG7', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	South
Overshading:	Average / Unknown	Width (m):	1.80	Height (m):	1.30
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 9 Window, Double glazed (low-E), ' WG9', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	South
Overshading:	Average / Unknown	Width (m):	1.36	Height (m):	0.60
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 10 Window, Double glazed (low-E), ' WG10', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	South
Overshading:	Average / Unknown	Width (m):	2.70	Height (m):	1.50
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 11 Window, Double glazed (low-E), ' WG11', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	West
Overshading:	Average / Unknown	Width (m):	1.80	Height (m):	1.50
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 12 Window, Double glazed (low-E), ' WG15', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	South
Overshading:	Average / Unknown	Width (m):	3.16	Height (m):	2.30
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 13 Window, Double glazed (low-E), ' WG16', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	South
Overshading:	Average / Unknown	Width (m):	1.00	Height (m):	1.60
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 14 Window, Double glazed (low-E), ' WG17', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	West
Overshading:	Average / Unknown	Width (m):	3.80	Height (m):	1.60
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 15 Window, Double glazed (low-E), ' WG18', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	North
Overshading:	Average / Unknown	Width (m):	1.00	Height (m):	1.60
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 16 Window, Double glazed (low-E), ' WG19', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	North
Overshading:	Average / Unknown	Width (m):	3.16	Height (m):	1.60
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 17 Window, Double glazed (low-E), ' WG12', master: No, linked to: 3

Location:	Wall 1	Source:	From Manufacturer	Orientation:	South
Overshading:	Average / Unknown	Width (m):	2.59	Height (m):	2.30
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	0.90

Opening Ref: 46 Rooflight, Double glazed (low-E), ' RW5', master: No, linked to: 42

Location:	Roof 1	Source:	From Manufacturer	Orientation:	South
Overshading:	None / Very little	Width (m):	1.88	Height (m):	0.94
Frame:	Wood	Transmittance factor:	0.63	U-value (W/m²K):	1.20

Ventilation

Air permeability entered:	Yes	Seek exemption (<3 dwellings):	No
Design air permeability rate:	1.00		

Number of...	Open fireplaces	Open flues	Flueless gas fires	Extract fans	Passive vents
	0	0	0	0	0

Mechanical ventilation:	Balanced (with heat recovery)	Values from:	Product database
Approved installer:	Yes		
Number of wet rooms:	Kitchen + 1 additional wet room	Duct insulation:	Insulated ductwork
Product name:	Genvex GES Energy BP DS LG	Duct type:	Rigid ductwork
SFP:	0.81	Heat exchange efficiency:	91.00

Space heating

Main heating category:	Individual system/s	Number of systems:	1
Secondary heating:	Yes	Smoke control area:	No
Type:	Heat pump - wet system	Efficiency source:	SAP table
Fuel:	Electricity		
System:	Air-to-water		
Controls:	Time and temperature zone control		
Compensation:	Weather compensator		
Emitter:	Underfloor (timber)	Pump in heated space:	Yes
Efficiency (%):	250.00		

Secondary heating:

Efficiency source:	Manufacturer declared	Fuel:	Dual fuel (mineral and wood)
System:	Closed room heater		
Flue type:	Open		
Manufacturer description:	Proposed wood burner		
Test method:	BS EN 13240		
HETAS approved:	N/A	Efficiency:	75.00

Water heating

Type:	From main	Fuel:	Electricity
Water separately timed:	Yes	Water use ≤125 litres/person/day:	Yes
Heat pump uses immersion:	Yes	Summer immersion:	N/A
Thermal store type:	None		

Store details:

Heat loss source:	Manufacturer	Declared loss factor:	1.63
Cylinder volume (litres):	185.00		
Thermostat:	Yes	In heated space:	Yes
Primary pipework insulated:	Yes		

Renewables

Photovoltaic panels system 1

Installed power peak (kWp):	20.00	Collector orientation:	South

Collector tilt:	45°	Overshading:	None or Very Little < 20%

Photovoltaic panels system 2

Installed power peak (kWp):	16.00	Collector orientation:	South
Collector tilt:	45°	Overshading:	None or Very Little < 20%

Other

Thermal Bridging

Thermal bridge specification:	Enter y value	y-value:	0.04
y-value description:	ECD		

Internal lighting

Standard fittings:	0	Low energy fittings:	40	Total fittings:	40

Summer overheating

Thermal mass parameter (TMP):	100.00		
User defined air change rate:	N/A	Air change rate (ach):	N/A
Cross ventilation on most floors:	N/A	Window ventilation:	N/A
Source of user defined values:			
Curtains closed in daylight hours:	N/A	Fraction curtains closed:	N/A
Blind/curtain type:	N/A		

Special features (Appendix Q)

No Appendix Q special features present

Cooling details

No space cooling present

Predicated Energy Assessment

Predicted Energy Assessment

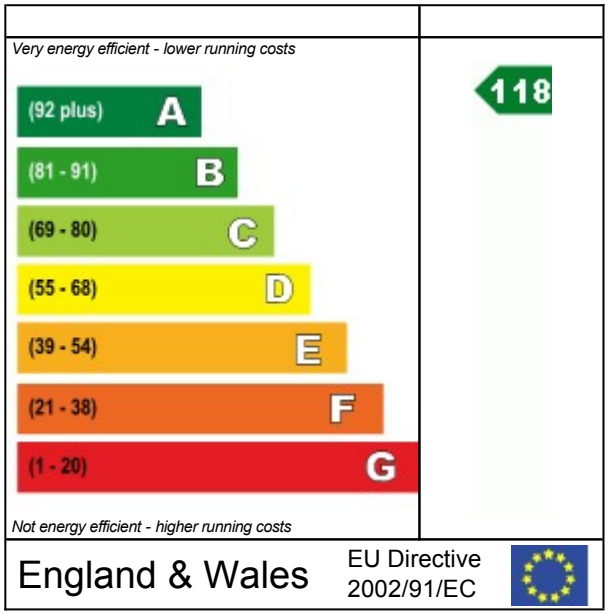
Plot 1
Little Grove
Boxworth
Cambridge
CB23

Dwelling type: Detached house
Date of assessment: 12-Mar-2012
Produced by: Mr Marco Valori
Total floor area: 749 m²

This is a Predicted Energy Assessment for a property which is not yet complete. It includes a predicted energy rating which might not represent the final energy rating of the property on completion. Once the property is completed, an Energy Performance Certificate is required providing information about the energy performance of the completed property.

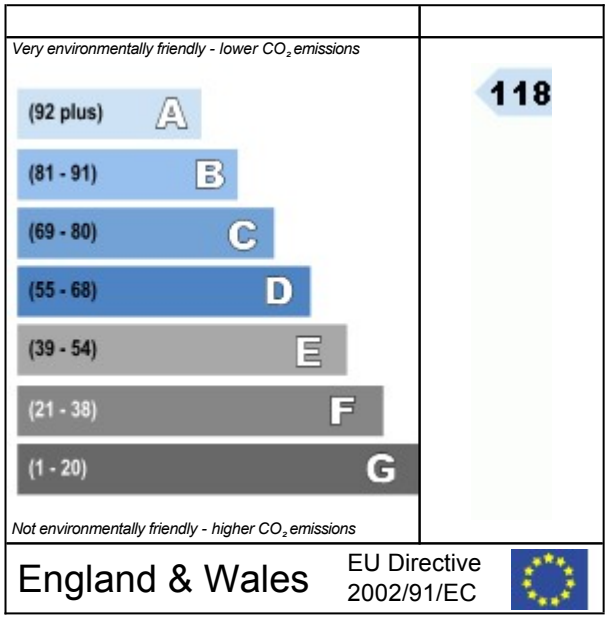
Energy performance has been assessed using the SAP 2009 methodology and is rated in terms of the energy use per square metre of floor area, energy efficiency based on fuel costs and environmental impact based on carbon dioxide (CO_2) emissions.

Energy Efficiency Rating



The energy efficiency rating is a measure of the overall efficiency of a home. The higher the rating the more energy efficient the home is and the lower the fuel bills are likely to be.

Environmental Impact (CO_2) Rating



The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide (CO_2) emissions. The higher the rating, the less impact it has on the environment.

Predicted Energy Assessment

CNC Consultancy Services Limited
Thorpe Lodge, 1 Yarmouth Road,
Norwich NR7 0DU
T: 01603 430149 F: 01603 430541
W: www.cncconsultancy.co.uk

RICS

Professionals delivering value