

# PREDICTED ENERGY ASSESSMENT

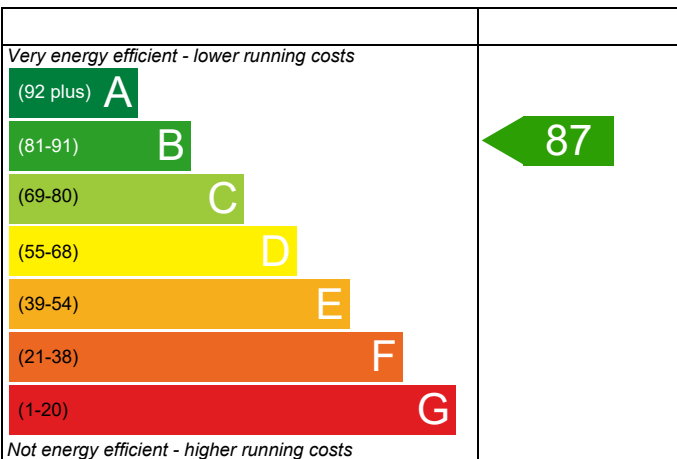
Plot 11

Dwelling type: House, Mid-Terrace  
 Date of assessment: 07/09/2020  
 Produced by: Abacus Energy (UK) Ltd  
 Total floor area: 83.52 m<sup>2</sup>  
 DRRN: 7241-2707-9004

This document is a Predicted Energy Assessment for properties marketed when they are incomplete. It includes a predicted energy rating which might not represent the final energy rating of the property on completion. Once the property is completed, this rating will be updated and an official Energy Performance Certificate will be created for the property. This will include more detailed information about the energy performance of the completed property.

The energy performance has been assessed using the Government approved SAP2012 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO<sub>2</sub>) emissions.

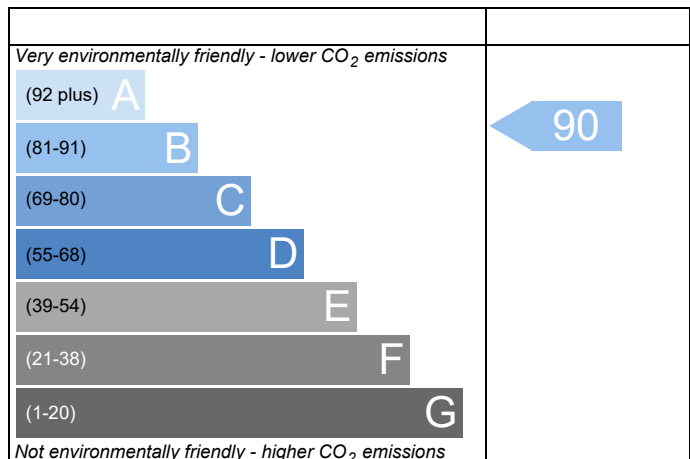
## Energy Efficiency Rating



**England** EU Directive 2002/91/EC

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<sub>2</sub>) Rating



**England** EU Directive 2002/91/EC

The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide (CO<sub>2</sub>) emissions. The higher the rating the less impact it has on the environment.

This report has been produced by an accredited Elmhurst member whose work is subject to quality assurance audits. The data used to produce the report has been verified by the Elmhurst members' portal.



# BUILDING REGULATION COMPLIANCE

## Calculation Type: New Build (As Designed)

Property Reference	SAP 0645 Plot 11	Issued on Date	07/09/2020
Assessment Reference	Rev C	Prop Type Ref	Block B
Property	Plot 11		

SAP Rating	87 B	DER	13.76	TER	17.09
Environmental	90 B	% DER<TER	19.48		
CO <sub>2</sub> Emissions (t/year)	0.86	DFEE	35.77	TFEE	45.32
General Requirements Compliance	Pass	% DFEE<TFEE	21.08		

Assessor Details	Mr. Tobias Whiting, Abacus Energy (UK) Ltd, Tel: 01329 313079, tobiaswhiting26@gmail.com	Assessor ID	E477-0001
Client	Foreman Homes, FORE		

### SUMMARY FOR INPUT DATA FOR New Build (As Designed)

#### Criterion 1 – Achieving the TER and TFEE rate

##### 1a TER and DER

Fuel for main heating	Mains gas		
Fuel factor	1.00 (mains gas)		
Target Carbon Dioxide Emission Rate (TER)	17.09	kgCO <sub>2</sub> /m <sup>2</sup>	
Dwelling Carbon Dioxide Emission Rate (DER)	13.76	kgCO <sub>2</sub> /m <sup>2</sup>	Pass
	-3.33 (-19.5%)	kgCO <sub>2</sub> /m <sup>2</sup>	

##### 1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	45.32	kWh/m <sup>2</sup> /yr	
Dwelling Fabric Energy Efficiency (DFEE)	35.77	kWh/m <sup>2</sup> /yr	
	-9.5 (-21.0%)	kWh/m <sup>2</sup> /yr	Pass

#### Criterion 2 – Limits on design flexibility

##### Limiting Fabric Standards

##### 2 Fabric U-values

Element	Average	Highest	
External wall	0.24 (max. 0.30)	0.24 (max. 0.70)	Pass
Party wall	0.00 (max. 0.20)	-	Pass
Floor	0.10 (max. 0.25)	0.10 (max. 0.70)	Pass
Roof	0.10 (max. 0.20)	0.10 (max. 0.35)	Pass
Openings	1.18 (max. 2.00)	1.20 (max. 3.30)	Pass

##### 2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

##### 3 Air permeability

Air permeability at 50 pascals	5.00 (design value)	m <sup>3</sup> /(h.m <sup>2</sup> ) @ 50 Pa	
Maximum	10.0	m <sup>3</sup> /(h.m <sup>2</sup> ) @ 50 Pa	Pass

##### Limiting System Efficiencies

##### 4 Heating efficiency

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# BUILDING REGULATION COMPLIANCE

## Calculation Type: New Build (As Designed)

Main heating system

Boiler system with radiators or underfloor - Mains gas  
Data from database  
Worcester Greenstar 30i ErP  
Combi boiler  
Efficiency: 89.6% SEDBUK2009  
Minimum: 88.0%

Pass

Secondary heating system

None

### 5 Cylinder insulation

Hot water storage

No cylinder

### 6 Controls

Space heating controls

Programmer, room thermostat and TRVs

Pass

Hot water controls

No cylinder

Boiler interlock

Yes

Pass

### 7 Low energy lights

Percentage of fixed lights with low-energy fittings

100 %

Minimum

75 %

Pass

### 8 Mechanical ventilation

Not applicable

## Criterion 3 – Limiting the effects of heat gains in summer

### 9 Summertime temperature

Overheating risk (Southern England)

Slight

Pass

Based on:

Overshading

Average

Windows facing North

7.49 m<sup>2</sup>, No overhang

Windows facing South

3.81 m<sup>2</sup>, No overhang

Windows facing West

0.66 m<sup>2</sup>, No overhang

Air change rate

4.00 ach

Blinds/curtains

None

## Criterion 4 – Building performance consistent with DER and DFEE rate

### Party Walls

Type

U-value

Filled Cavity with Edge Sealing

0.00 W/m<sup>2</sup>K

Pass

### Air permeability and pressure testing

#### 3 Air permeability

Air permeability at 50 pascals

5.00 (design value) m<sup>3</sup>/(h.m<sup>2</sup>) @ 50 Pa

Maximum

10.0 m<sup>3</sup>/(h.m<sup>2</sup>) @ 50 Pa

Pass

### 10 Key features

Party wall U-value

0.00 W/m<sup>2</sup>K

Roof U-value

0.10 W/m<sup>2</sup>K

Floor U-value

0.10 W/m<sup>2</sup>K

Door U-value

1.10 W/m<sup>2</sup>K

Photovoltaic array

0.45 kW

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# RECOMMENDATIONS

	Typical cost	Typical savings per year	Energy efficiency	Environmental impact	Result
Low energy lights			0	0	Already installed
Solar water heating	£4,000 - £6,000	£31	B 88	A 92	Recommended
Photovoltaic			0	0	Already installed
Wind turbine			0	0	Not applicable
<b>Totals</b>	<b>£4,000 - £6,000</b>	<b>£31</b>	<b>B 88</b>	<b>A 92</b>	

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