

# BASIC COMPLIANCE REPORT

## Calculation Type: New Build (As Designed)

|                             |  |                       |            |
|-----------------------------|--|-----------------------|------------|
| <b>Property Reference</b>   | 6395-0001-4066-22-02                         | <b>Issued on Date</b> | 31/07/2022 |
| <b>Assessment Reference</b> | 001  | <b>Prop Type Ref</b>  |            |
| <b>Property</b>             | Unit 2, 24, Hampton Road, Twickenham, London |                       |            |

|  |      |                       |       |             |       |
|--|------|-----------------------|-------|-------------|-------|
| <b>SAP Rating</b>                        | 90 B | <b>DER</b>            | 10.94 | <b>TER</b>  | 16.91 |
| <b>Environmental</b>                     | 91 B | <b>% DER&lt;TER</b>   | 35.31 |             |       |
| <b>CO<sub>2</sub> Emissions (t/year)</b> | 0.99 | <b>DFEE</b>           | 48.32 | <b>TFEE</b> | 53.97 |
| <b>General Requirements Compliance</b>   | Pass | <b>% DFEE&lt;TFEE</b> | 10.48 |             |       |

|                         |  |                    |           |
|-------------------------|--|--------------------|-----------|
| <b>Assessor Details</b> | Mr. Christopher Bills, Premi-Air Testing and energy assessment services, Tel: 07751 824354, chris@premi-airtesting.co.uk | <b>Assessor ID</b> | 6395-0001 |
|-------------------------|--|--------------------|-----------|

|               |  |
|---------------|--|
| <b>Client</b> |  |
|---------------|--|

### 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)   | 16.91            | kgCO <sub>2</sub> /m <sup>2</sup> |      |
| Dwelling Carbon Dioxide Emission Rate (DER) | 10.94            | kgCO <sub>2</sub> /m <sup>2</sup> | Pass |
|   | -5.97 (-35.3%)   | kgCO <sub>2</sub> /m <sup>2</sup> |      |

##### 1b TFEE and DFEE

|  |               |                        |      |
|--|---------------|------------------------|------|
| Target Fabric Energy Efficiency (TFEE)   | 53.97         | kWh/m <sup>2</sup> /yr |      |
| Dwelling Fabric Energy Efficiency (DFEE) | 48.32         | kWh/m <sup>2</sup> /yr |      |
|  | -5.7 (-10.6%) | 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 | 0.23 (max. 0.30) | 0.23 (max. 0.70) | Pass |
| Party wall    | 0.00 (max. 0.20) | -                | Pass |
| Floor         | 0.11 (max. 0.25) | 0.11 (max. 0.70) | Pass |
| Roof          | 0.10 (max. 0.20) | 0.14 (max. 0.35) | Pass |
| Openings      | 1.47 (max. 2.00) | 1.70 (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) |      |
| Maximum                        | 10.0                | Pass |

##### Limiting System Efficiencies

##### 4 Heating efficiency

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Main heating system

Boiler system with radiators or underfloor - Mains gas  
Data from database  
Vaillant ecoTEC sustain 28 VUW 286/7-2 (H-GB)  
Combi boiler  
Efficiency: 89.1% SEDBUK2009  
Minimum: 88.0%

Pass

Secondary heating system

None

### 5 Cylinder insulation

Hot water storage

No cylinder

### 6 Controls

Space heating controls

Time and temperature zone control

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 (Thames Valley)

Not significant

Pass

Based on:

Overshading

Average

Windows facing North East

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

Windows facing South East

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

Windows facing South West

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

Windows facing North West

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

Air change rate

8.00 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)

Maximum

10.0

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

0.11

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

Photovoltaic array

1.50

kW

**BASIC COMPLIANCE REPORT**  
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*This report has not been submitted through the Elmhurst Energy members' portal, therefore results are subject to change when the dwelling is completed.*

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

|                       |                      |
|-----------------------|----------------------|
| Orientation           | North West           |
| Property Tenure       | Unknown              |
| Transaction Type      | New dwelling         |
| Terrain Type          | Urban                |
| 1.0 Property Type     | House, Semi-Detached |
| 2.0 Number of Storeys | 2                    |
| 3.0 Date Built        | 2022                 |
| 4.0 Sheltered Sides   | 1                    |
| 5.0 Sunlight/Shade    | Average or unknown   |

| 6.0 Measurements | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------------|----------------------|-----------------------|
| Ground Floor:    | 23.84 m             | 60.51 m <sup>2</sup> | 2.35 m                |
| 1st Storey:      | 22.36 m             | 58.66 m <sup>2</sup> | 2.60 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 7.0 Living Area | 20.52 | m <sup>2</sup> |
|-----------------|-------|----------------|

|                            |                          |                     |
|----------------------------|--------------------------|---------------------|
| 8.0 Thermal Mass Parameter | Simple calculation - Low |                     |
| Thermal Mass               | 100.00                   | kJ/m <sup>2</sup> K |

| 9.0 External Walls | Description         | Type         | U-Value (W/m <sup>2</sup> K) | Gross Area (m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) |
|--------------------|---------------------|--------------|------------------------------|------------------------------|-----------------------------|
|                    | External Wall Brick | Timber Frame | 0.23                         | 114.16                       | 95.93                       |

| 9.1 Party Walls | Description | Type                            | Construction | U-Value (W/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-----------------|-------------|---------------------------------|--------------|------------------------------|------------------------|
|                 | Party Wall  | Filled Cavity with Edge Sealing |              | 0.00                         | 49.50                  |

| 10.0 External Roofs | Description        | Type                | U-Value (W/m <sup>2</sup> K) | Gross Area (m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) |
|---------------------|--------------------|---------------------|------------------------------|------------------------------|-----------------------------|
|                     | External Roof Main | External Plane Roof | 0.10                         | 58.66                        | 58.66                       |
|                     | Bay Window Roof    | External Plane Roof | 0.14                         | 1.85                         | 1.85                        |

| 11.0 Heat Loss Floors | Description  | Type                 | Construction | U-Value (W/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-----------------------|--------------|----------------------|--------------|------------------------------|------------------------|
|                       | Ground Floor | Ground Floor - Solid |              | 0.11                         | 60.51                  |

# SUMMARY FOR INPUT DATA

## Calculation Type: New Build (As Designed)

### 12.0 Opening Types

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Argon Filled | G-value | Frame Type | Frame Factor | U Value (W/m <sup>2</sup> K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|------------------------------|
| Entrance Door | Manufacturer | Solid Door |                        |             |              |         |            |              | 1.70                         |
| Patio Door    | Manufacturer | Window     | Double Low-E Soft 0.1  |             |              | 0.63    |            | 0.70         | 1.60                         |
| Windows       | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.40                         |

### 13.0 Openings

| Name            | Opening Type | Location                | Orientation | Curtain Type | Overhang Ratio | Wide Overhang | Width (m) | Height (m) | Count | Area (m <sup>2</sup> ) | Curtain Closed |
|-----------------|--------------|-------------------------|-------------|--------------|----------------|---------------|-----------|------------|-------|------------------------|----------------|
| Side Elevation  | Solid Door   | [1] External Wall Brick | North West  |              |                |               |           |            |       | 2.00                   |                |
| Side Elevation  | Window       | [1] External Wall Brick | North West  | None         | 0.00           |               |           |            |       | 2.55                   |                |
| Side Elevation  | Window       | [1] External Wall Brick | South East  | None         | 0.00           |               |           |            |       | 0.55                   |                |
| Front Elevation | Window       | [1] External Wall Brick | South West  | None         | 0.00           |               |           |            |       | 4.41                   |                |
| Rear Elevation  | Window       | [1] External Wall Brick | North East  | None         | 0.00           |               |           |            |       | 2.94                   |                |
| Rear Elevation  | Window       | [1] External Wall Brick | North East  | None         | 0.00           |               |           |            |       | 5.78                   |                |

### 14.0 Conservatory

### 15.0 Draught Proofing

 %

### 16.0 Draught Lobby

### 17.0 Thermal Bridging

### 17.1 List of Bridges

| Source Type            | Bridge Type  | Length | Psi   | Imported | Reference: |
|------------------------|--|--------|-------|----------|------------|
| Independently assessed | E2 Other lintels (including other steel lintels)                 | 14.62  | 0.024 | Yes      | ECD TF01   |
| Table K1 - Approved    | E3 Sill  | 13.67  | 0.040 | Yes      | TFW-WD-02  |
| Table K1 - Approved    | E4 Jamb  | 40.80  | 0.050 | Yes      | TFW-WD-03  |
| Table K1 - Approved    | E5 Ground floor (normal)   | 33.84  | 0.160 | Yes      | TFW-GF-01  |
| Table K1 - Approved    | E6 Intermediate floor within a dwelling                          | 32.36  | 0.070 | Yes      | TFW-IF-01  |
| Table K1 - Approved    | E10 Eaves (insulation at ceiling level)                          | 36.34  | 0.060 | No       | TFW-RE-01  |
| Table K1 - Default     | E24 Eaves (insulation at ceiling level - inverted)               | 2.50   | 0.240 | No       |            |
| Table K1 - Default     | E16 Corner (normal)  | 15.00  | 0.180 | No       |            |
| Table K1 - Default     | E17 Corner (inverted – internal area greater than external area) | 5.00   | 0.000 | No       |            |
| Table K1 - Default     | E18 Party wall between dwellings                                 | 10.00  | 0.120 | Yes      |            |
| Table K1 - Default     | P1 Party wall - Ground floor                                     | 10.00  | 0.160 | No       |            |
| Table K1 - Default     | P2 Party wall - Intermediate floor within a dwelling             | 10.00  | 0.000 | No       |            |
| Table K1 - Default     | P4 Party wall - Roof (insulation at ceiling level)               | 10.00  | 0.240 | No       |            |

Y-value  W/m<sup>2</sup>K

### 18.0 Pressure Testing

Designed AP<sub>50</sub>  m<sup>3</sup>/(h.m<sup>2</sup>) @ 50 Pa

Property Tested ?

As Built AP<sub>50</sub>  m<sup>3</sup>/(h.m<sup>2</sup>) @ 50 Pa

### 19.0 Mechanical Ventilation

#### Summer Overheating

Windows open in hot weather

Cross ventilation possible

Night Ventilation

Air change rate

#### Mechanical Ventilation

Mechanical Ventilation System Present

### 20.0 Fans, Open Fireplaces, Flues

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|  | MHS  | SHS | Other | Total |
|--|--|-----|-------|-------|
| Number of Chimneys                               | 0  |     | 0     | 0     |
| Number of open flues                             | 0  |     | 0     | 0     |
| Number of intermittent fans                      |  |     |       | 3     |
| Number of passive vents                          |  |     |       | 0     |
| Number of flueless gas fires                     |  |     |       | 0     |
| <hr/>  |  |     |       |       |
| <b>21.0 Fixed Cooling System</b>                 | <input type="text" value="No"/>                                    |     |       |       |
| <hr/>  |  |     |       |       |
| <b>22.0 Lighting</b>                             |  |     |       |       |
| <b>Internal</b>                                  |  |     |       |       |
| Total number of light fittings                   | <input type="text" value="12"/>                                    |     |       |       |
| Total number of L.E.L. fittings                  | <input type="text" value="12"/>                                    |     |       |       |
| Percentage of L.E.L. fittings                    | <input type="text" value="100.00"/> %                              |     |       |       |
| <b>External</b>                                  |  |     |       |       |
| External lights fitted                           | <input type="text" value="No"/>                                    |     |       |       |
| <hr/>  |  |     |       |       |
| <b>23.0 Electricity Tariff</b>                   | <input type="text" value="Standard"/>                              |     |       |       |
| <hr/>  |  |     |       |       |
| <b>24.0 Main Heating 1</b>                       | <input type="text" value="Database"/>                              |     |       |       |
| Description                                      | <input type="text" value="Gas Combi Boiler"/>                      |     |       |       |
| Percentage of Heat                               | <input type="text" value="100"/> %                                 |     |       |       |
| Database Ref. No.                                | <input type="text" value="18119"/>                                 |     |       |       |
| Fuel Type  | <input type="text" value="Mains gas"/>                             |     |       |       |
| Main Heating                                     | <input type="text" value="BGW"/>                                   |     |       |       |
| SAP Code   | <input type="text" value="104"/>                                   |     |       |       |
| In Winter  | <input type="text" value="90.0"/>                                  |     |       |       |
| In Summer  | <input type="text" value="87.0"/>                                  |     |       |       |
| Controls   | <input type="text" value="CBI Time and temperature zone control"/> |     |       |       |
| PCDF Controls                                    | <input type="text" value="0"/>                                     |     |       |       |
| Delayed Start Stat                               | <input type="text" value="Yes"/>                                   |     |       |       |
| Sap Code   | <input type="text" value="2110"/>                                  |     |       |       |
| Flue Type  | <input type="text" value="Balanced"/>                              |     |       |       |
| Fan Assisted Flue                                | <input type="text" value="Yes"/>                                   |     |       |       |
| Is MHS Pumped                                    | <input type="text" value="Pump in heated space"/>                  |     |       |       |
| Heat Emitter                                     | <input type="text" value="Radiators"/>                             |     |       |       |
| Flow Temperature                                 | <input type="text" value="Normal (&gt; 45°C)"/>                    |     |       |       |
| Combi boiler type                                | <input type="text" value="Standard Combi"/>                        |     |       |       |
| Combi keep hot type                              | <input type="text" value="None"/>                                  |     |       |       |
| <hr/>  |  |     |       |       |
| <b>25.0 Main Heating 2</b>                       | <input type="text" value="None"/>                                  |     |       |       |
| <hr/>  |  |     |       |       |
| Community Heating                                | <input type="text" value="None"/>                                  |     |       |       |
| <b>28.0 Water Heating</b>                        | <input type="text" value="HWP From main heating 1"/>               |     |       |       |
| Water Heating                                    | <input type="text" value="Main Heating 1"/>                        |     |       |       |
| Flue Gas Heat Recovery System                    | <input type="text" value="Yes"/>                                   |     |       |       |
| Waste Water Heat Recovery Instantaneous System 1 | <input type="text" value="No"/>                                    |     |       |       |
| Waste Water Heat Recovery Instantaneous System 2 | <input type="text" value="No"/>                                    |     |       |       |
| Waste Water Heat Recovery                        | <input type="text" value="No"/>                                    |     |       |       |

# SUMMARY FOR INPUT DATA

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Storage System

|                                    |     |
|------------------------------------|-----|
| Solar Panel                        | No  |
| Water use <= 125 litres/person/day | Yes |
| SAP Code                           | 901 |

**28.1 Flue Gas Heat Recovery System**

|             |  |
|-------------|--|
| Database ID | 60076  |
| Brand Model | Vaillant, PFGHRD/1   |
| Details     | Year: 2013 + current<br>Applicable Fuel: 1<br>Boiler Types: RCSK<br>Heat Store Volume: 0<br>PV module: 0 |

**29.0 Hot Water Cylinder**

None

**32.0 Photovoltaic Unit**

One Dwelling

| PV Cells kWp | Orientation | Elevation | Overshading | Connected to Dwelling |
|--------------|-------------|-----------|-------------|-----------------------|
| 1.50         | South West  | 30°       | Modest      | Yes                   |

**Recommendations**

**Lower cost measures**

None

**Further measures to achieve even higher standards**

None

# U-VALUE CALCULATOR REPORT

|                      |  |               |                |            |  |
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## Building Elements

### Roof 000002 - Pitched roof - insulated at ceiling

Roof Type: Pitched Roof, insulated flat ceiling

| Layer       | Description  | Thickness (mm) | Conductivity (W/m <sup>2</sup> K) | Resistance (m <sup>2</sup> K/W) | Fraction (%) |
|-------------|--|----------------|-----------------------------------|---------------------------------|--------------|
| Ext surface |  |                |                                   | 0.0400                          |              |
| Layer 1     | <b>Roof space</b>  |                |                                   |                                 |              |
|             | Main construction  | 0              | 0.2000                            | 0.2000                          | 100.00       |
| Layer 2     | <b>Mineral wool</b>  |                |                                   |                                 |              |
|             | Main construction  | 250            | 0.0400                            | 6.2500                          | 100.00       |
|             | Corrections - Air Gap: Level 0, Fasteners: None or plastic |                |                                   |                                 |              |
| Layer 3     | <b>Mineral wool quilt</b>                                  |                |                                   |                                 |              |
|             | Main construction  | 150            | 0.0400                            | 3.7500                          | 87.50        |
|             | Main construction  | 150            | 0.1300                            | 1.1538                          | 12.50        |
|             | Corrections - Air Gap: Level 0, Fasteners: None or plastic |                |                                   |                                 |              |
| Layer 4     | <b>Plasterboard, standard</b>                              |                |                                   |                                 |              |
|             | Main construction  | 15             | 0.2100                            | 0.0714                          | 100.00       |
| Int surface |  |                |                                   | 0.1000                          |              |

Total resistance: Upper limit = 9.996 m<sup>2</sup> K/W      Lower limit = 9.588 m<sup>2</sup> K/W      Average = 9.792 m<sup>2</sup> K/W  
 Total correction = 0.0030 m<sup>2</sup> K/W      U-value (unrounded) = 0.1 W/m<sup>2</sup> K

Unheated space: None

**Total thickness: 415 mm**

**U-value: 0.10 W/m<sup>2</sup> K**

**Kappa: n/a**



# U-VALUE CALCULATOR REPORT

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## Building Elements

### Roof 000003 - Pitched roof - insulated at ceiling

#### Roof Type: Pitched Roof, insulated flat ceiling

| Layer       | Description  | Thickness (mm) | Conductivity (W/m <sup>2</sup> K) | Resistance (m <sup>2</sup> K/W) | Fraction (%) |
|-------------|--|----------------|-----------------------------------|---------------------------------|--------------|
| Ext surface |  |                |                                   | 0.0400                          |              |
| Layer 1     | <b>Roof space</b>  |                |                                   |                                 |              |
|             | Main construction  | 0              | 0.2000                            | 0.2000                          | 100.00       |
| Layer 2     | <b>Mineral wool</b>  |                |                                   |                                 |              |
|             | Main construction  | 150            | 0.0400                            | 3.7500                          | 100.00       |
|             | Corrections - Air Gap: Level 0, Fasteners: None or plastic |                |                                   |                                 |              |
| Layer 3     | <b>Mineral wool quilt</b>                                  |                |                                   |                                 |              |
|             | Main construction  | 150            | 0.0400                            | 3.7500                          | 87.50        |
|             | Main construction  | 150            | 0.1300                            | 1.1538                          | 12.50        |
|             | Corrections - Air Gap: Level 0, Fasteners: None or plastic |                |                                   |                                 |              |
| Layer 4     | <b>Plasterboard, standard</b>                              |                |                                   |                                 |              |
|             | Main construction  | 15             | 0.2100                            | 0.0714                          | 100.00       |
| Int surface |  |                |                                   | 0.1000                          |              |

Total resistance: Upper limit = 7.456 m<sup>2</sup> K/W Lower limit = 7.088 m<sup>2</sup> K/W Average = 7.272 m<sup>2</sup> K/W  
 Total correction = 0.0030 m<sup>2</sup> K/W U-value (unrounded) = 0.14 W/m<sup>2</sup> K

Unheated space: None

Total thickness: 315 mm

U-value: 0.14 W/m<sup>2</sup> K

Kappa: n/a

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|                                    |      |             |       |      |       |
|------------------------------------|------|-------------|-------|------|-------|
| SAP Rating                         | 90 B | DER         | 10.94 | TER  | 16.91 |
| Environmental                      | 91 B | % DER<TER   | 35.31 |      |       |
| CO <sub>2</sub> Emissions (t/year) | 0.99 | DFEE        | 48.32 | TFEE | 53.97 |
| General Requirements Compliance    | Pass | % DFEE<TFEE | 10.48 |      |       |

|                  |  |             |           |
|------------------|--|-------------|-----------|
| Assessor Details | Mr. Christopher Bills, Premi-Air Testing and energy assessment services, Tel: 07751 824354, chris@premi-airtesting.co.uk | Assessor ID | 6395-0001 |
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## Building Elements

### Wall 000001 - Timber Framed warm frame or hybrid

#### Wall Type: Timber framed Wall with I-beams

| Layer       | Description  | Thickness (mm) | Conductivity (W/m <sup>2</sup> K) | Resistance (m <sup>2</sup> K/W) | Fraction (%) |
|-------------|--|----------------|-----------------------------------|---------------------------------|--------------|
| Ext surface |  |                |                                   | 0.0400                          |              |
| Layer 1     | <b>Brick, outer leaf</b>                                   |                |                                   |                                 |              |
|             | Main construction  | 103            | 0.7700                            | 0.1338                          | 100.00       |
| Layer 2     | <b>Standard cavity</b>                                     |                |                                   |                                 |              |
|             | Main construction  | 52             | 0.2889                            | 0.1800                          | 100.00       |
|             | Corrections - Cavity Unventilated, Emissivity: Normal      |                |                                   |                                 |              |
| Layer 3     | <b>Breather membrane</b>                                   |                |                                   |                                 |              |
|             | Main construction  | 1              | 0.0000                            | 0.0000                          | 100.00       |
| Layer 4     | <b>Orientated Strand Board</b>                             |                |                                   |                                 |              |
|             | Main construction  | 9              | 0.1300                            | 0.0692                          | 100.00       |
| Layer 5     | <b>Standard cavity</b>                                     |                |                                   |                                 |              |
|             | Main construction  | 20             | 0.1143                            | 0.1750                          | 91.67        |
|             | Main construction  | 20             | 0.1300                            | 0.1538                          | 8.33         |
|             | Corrections - Cavity Unventilated, Emissivity: Normal      |                |                                   |                                 |              |
| Layer 6     | <b>Thermawall TW50 zero ODP</b>                            |                |                                   |                                 |              |
|             | Main construction  | 100            | 0.0220                            | 4.5455                          | 91.67        |
|             | Main construction  | 100            | 0.1300                            | 0.7692                          | 8.33         |
|             | Corrections - Air Gap: Level 1, Fasteners: None or plastic |                |                                   |                                 |              |
| Layer 7     | <b>Standard cavity</b>                                     |                |                                   |                                 |              |
|             | Main construction  | 20             | 0.1143                            | 0.1750                          | 91.67        |
|             | Main construction  | 20             | 0.1300                            | 0.1538                          | 8.33         |
|             | Corrections - Cavity Unventilated, Emissivity: Normal      |                |                                   |                                 |              |
| Layer 8     | <b>Vapour control layer</b>                                |                |                                   |                                 |              |
|             | Main construction  | 1              | 0.0000                            | 0.0000                          | 100.00       |
| Layer 9     | <b>Plasterboard,</b>                                       |                |                                   |                                 |              |
|             | Main construction  | 12.5           | 0.2100                            | 0.0595                          | 100.00       |
| Int surface |  |                |                                   | 0.1300                          |              |

|                          |   |  |   |
|--------------------------|---|--|---|
| <b>Total resistance:</b> | <b>Upper limit =</b> 4.657 m <sup>2</sup> K/W       | <b>Lower limit =</b> 4.184 m <sup>2</sup> K/W        | <b>Average =</b> 4.420 m <sup>2</sup> K/W |
|                          | <b>Total correction =</b> 0.0053 m <sup>2</sup> K/W | <b>U-value (unrounded) =</b> 0.23 W/m <sup>2</sup> K |   |

# U-VALUE CALCULATOR REPORT

Unheated space: None

**Total thickness: 319 mm**

**U-value: 0.23 W/m<sup>2</sup> K**

**Kappa: n/a**

# U-VALUE CALCULATOR REPORT

|                      |  |               |                |            |
|----------------------|--|---------------|----------------|------------|
| Property Reference   | 6395-0001-4066-22-02                         |               | Issued on Date | 31/07/2022 |
| Assessment Reference | 001  | Prop Type Ref |                |            |
| Project              | Unit 2, 24, Hampton Road, Twickenham, London |               |                |            |
| Calculation Type     | New Build (As Designed)                      |               |                |            |

|                                    |      |             |       |      |       |
|------------------------------------|------|-------------|-------|------|-------|
| SAP Rating                         | 90 B | DER         | 10.94 | TER  | 16.91 |
| Environmental                      | 91 B | % DER<TER   | 35.31 |      |       |
| CO <sub>2</sub> Emissions (t/year) | 0.99 | DFEE        | 48.32 | TFEE | 53.97 |
| General Requirements Compliance    | Pass | % DFEE<TFEE | 10.48 |      |       |

|                  |  |             |           |
|------------------|--|-------------|-----------|
| Assessor Details | Mr. Christopher Bills, Premi-Air Testing and energy assessment services, Tel: 07751 824354, chris@premi-airtesting.co.uk | Assessor ID | 6395-0001 |
|------------------|--|-------------|-----------|

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## Building Elements

### Floor 000004 - Floor - suspended beam-and-block floor

Floor Type: Suspended Floor

Area = 60.50 m<sup>2</sup>, Perimeter = 33.84 m, Wall thickness = 300.00 mm, Soil: Clay

Depth of underfloor space below ground: 0.200 m Floor wind shielding: Average (suburban)

Floor height above ground: h = 0.000 m

U-value of walls above ground: U<sub>w</sub> = 1.500 m

Ventilation openings per perimeter length: e = 0.0015 %

Mean wind speed: v = 5.000 m/s

Resistance on solum: R<sub>g</sub> = 0.000 m<sup>2</sup>K/W

| Layer       | Description  | Thickness (mm) | Conductivity (W/m <sup>2</sup> K) | Resistance (m <sup>2</sup> K/W) | Fraction (%) |
|-------------|--|----------------|-----------------------------------|---------------------------------|--------------|
| Ext surface |  |                |                                   | 0.1700                          |              |
| Layer 1     | <b>AAC (600 kg/m<sup>3</sup>)/ concrete</b>                |                |                                   |                                 |              |
|             | Main construction  | 100            | 0.1800                            | 0.5556                          | 86.30        |
|             | Main construction  | 100            | 1.3500                            | 0.0741                          | 13.70        |
| Layer 2     | <b>Polythene, 1000 gauge</b>                               |                |                                   |                                 |              |
|             | Main construction  | 2              | 0.0000                            | 0.0000                          | 100.00       |
| Layer 3     | <b>Thermafloor TF70 zero ODP</b>                           |                |                                   |                                 |              |
|             | Main construction  | 150            | 0.0220                            | 6.8182                          | 100.00       |
|             | Corrections - Air Gap: Level 1, Fasteners: None or plastic |                |                                   |                                 |              |
| Layer 4     | <b>Screed</b>  |                |                                   |                                 |              |
|             | Main construction  | 75             | 1.1500                            | 0.0652                          | 100.00       |
| Int surface |  |                |                                   | 0.1700                          |              |

Total resistance: Upper limit = 7.709 m<sup>2</sup> K/W Lower limit = 7.517 m<sup>2</sup> K/W Average = 7.613 m<sup>2</sup> K/W

Total correction = 0.0080 m<sup>2</sup> K/W

U-value (unrounded) = 0.11 W/m<sup>2</sup> K

Unheated space: None

**Total thickness: 327 mm**

**U-value: 0.11 W/m<sup>2</sup> K**

**Kappa: n/a**

# THERMAL BRIDGING

## Calculation Type: New Build (As Designed)

|                      |  |               |                |            |
|----------------------|--|---------------|----------------|------------|
| Property Reference   | 6395-0001-4066-22-02                         |               | Issued on Date | 31/07/2022 |
| Assessment Reference | 001  | Prop Type Ref |                |            |
| Property             | Unit 2, 24, Hampton Road, Twickenham, London |               |                |            |

|                                    |      |             |       |      |       |
|------------------------------------|------|-------------|-------|------|-------|
| SAP Rating                         | 90 B | DER         | 10.94 | TER  | 16.91 |
| Environmental                      | 91 B | % DER<TER   | 35.31 |      |       |
| CO <sub>2</sub> Emissions (t/year) | 0.99 | DFEE        | 48.32 | TFEE | 53.97 |
| General Requirements Compliance    | Pass | % DFEE<TFEE | 10.48 |      |       |

|                  |  |             |           |
|------------------|--|-------------|-----------|
| Assessor Details | Mr. Christopher Bills, Premi-Air Testing and energy assessment services, Tel: 07751 824354, chris@premi-airtesting.co.uk | Assessor ID | 6395-0001 |
|------------------|--|-------------|-----------|

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| Client |  |
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|               | Junction detail  | Source Type            | Psi (W/mK) | Length (m) | Result | Reference |
|---------------|--|------------------------|------------|------------|--------|-----------|
| External wall | E2 Other lintels (including other steel lintels)                 | Independently assessed | 0.024      | 14.62      | 0.35   | ECD TF01  |
| External wall | E3 Sill  | Table K1 - Approved    | 0.040      | 13.67      | 0.55   | TFW-WD-02 |
| External wall | E4 Jamb  | Table K1 - Approved    | 0.050      | 40.80      | 2.04   | TFW-WD-03 |
| External wall | E5 Ground floor (normal)   | Table K1 - Approved    | 0.160      | 33.84      | 5.41   | TFW-GF-01 |
| External wall | E6 Intermediate floor within a dwelling                          | Table K1 - Approved    | 0.070      | 32.36      | 2.27   | TFW-IF-01 |
| External wall | E10 Eaves (insulation at ceiling level)                          | Table K1 - Approved    | 0.060      | 36.34      | 2.18   | TFW-RE-01 |
| External wall | E24 Eaves (insulation at ceiling level - inverted)               | Table K1 - Default     | 0.240      | 2.50       | 0.60   |           |
| External wall | E16 Corner (normal)  | Table K1 - Default     | 0.180      | 15.00      | 2.70   |           |
| External wall | E17 Corner (inverted – internal area greater than external area) | Table K1 - Default     | 0.000      | 5.00       | 0.00   |           |
| External wall | E18 Party wall between dwellings                                 | Table K1 - Default     | 0.120      | 10.00      | 1.20   |           |
| Party wall    | P1 Party wall - Ground floor                                     | Table K1 - Default     | 0.160      | 10.00      | 1.60   |           |
| Party wall    | P2 Party wall - Intermediate floor within a dwelling             | Table K1 - Default     | 0.000      | 10.00      | 0.00   |           |
| Party wall    | P4 Party wall - Roof (insulation at ceiling level)               | Table K1 - Default     | 0.240      | 10.00      | 2.40   |           |

Total: **21.30** W/mK:  
 Y-Value: **0.091** W/m<sup>2</sup>K:

# PREDICTED ENERGY ASSESSMENT

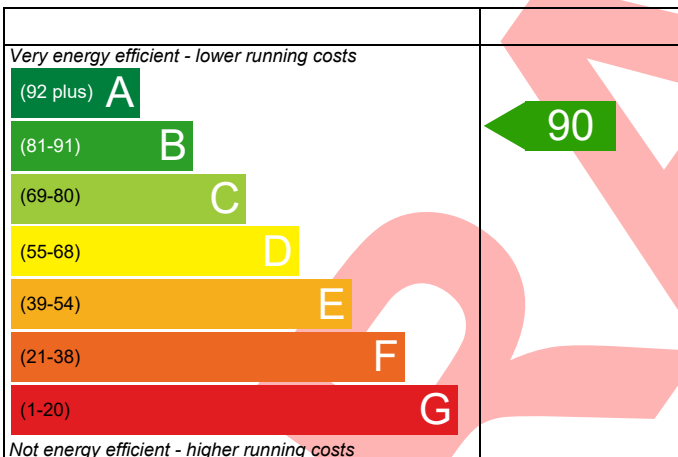
Unit 2, 24, Hampton Road,  
Twickenham,  
London

Dwelling type: House, Semi-Detached  
Date of assessment: 31/07/2022  
Produced by: Christopher Bills  
Total floor area: 119.17 m<sup>2</sup>

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.

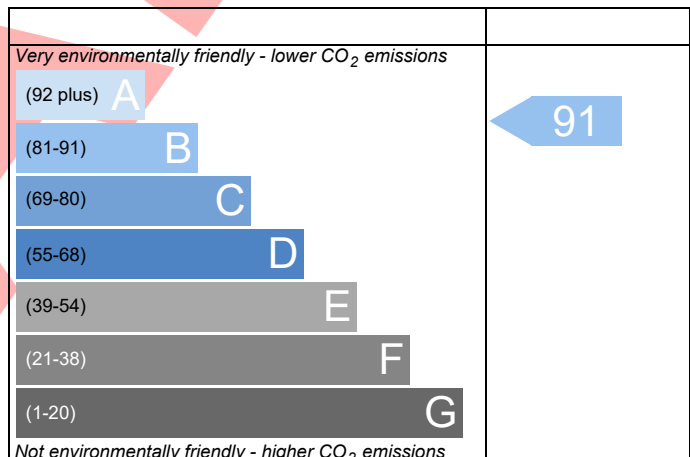
## Energy Efficiency Rating



**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 not been submitted through the Elmhurst Energy members' portal, therefore results are subject to change when the dwelling is completed.