



Aaron Hewitt
Ascot Design Ltd
Berkshire House
39-51 High Street
Ascot
SL5 7HY

Therm Energy Limited
1 Tarrant Street
Arundel
West Sussex
BN18 9AZ

TEL : 01903 884357

E : info@thermenergy.co.uk

Our Reference : TJ-34

Sent By : E-Mail

3 November 2015

Dear Aaron

ENERGY STATEMENT (PLANNING)

Statement By :	Joe Solti Accredited SAP Assessor
----------------	--------------------------------------

Thank you for sending the drawings. We are pleased to present our report as follows.

Development Details

Site Location :	59 Ham Street, Richmond TW10 7HR
Development :	4 x New 3 Bedroom Semi-Detached Houses
Local Authority :	London Borough of Richmond
Key Principles :	<u>Carbon Emissions</u> 35% Reduction in CO2 (Part L 2013) <u>Water Use</u> 105 Litres/Person/Day (internal use)

Energy Statement :	TJ-34 (Therm Energy Ltd)
Site Location :	59 Ham Street, Richmond TW10 7HR

Carbon Emissions (CO2)

TER (Part L 2013) :	21.03 kg/m ² /year
DER (Part L 2013) :	13.65 kg/m ² /year
Improvement :	$(\text{TER}-\text{DER})/\text{TER} = (21.03 - 13.65) / 21.03 = 35.09\%$
Summary (CO2) :	> 35% Improvement

Note : See thermal (SAP) calculation TJ3401

Note : Calculations are based on SAP 2012 (Part L Building Regulations 2013)

Water Use

Part G (2010) :	125 Litres/Person/Day
Actual Water Use :	< 105 Litres/Person/Day
Summary :	Code for Sustainable Homes Level 4 (equivalent)

Note : See water use calculations TJ3401G

Note : Calculations are based on Part G Building Regulations 2010

Energy Statement :	TJ-34 (Therm Energy Ltd)
Site Location :	59 Ham Street, Richmond TW10 7HR

Design

Energy & CO₂ Emissions

- > Fabric insulation standards (including glazing), and air-tightness, will meet or exceed current (2013) Building Regulations Part L standards.
- > Air source heat pump + wet underfloor heating (MCS certified installer).
- > Attention to be paid to minimise thermal bridging and air leakage at junctions.
- > 100% of new internal fixed lighting and external lighting will be low-energy.
- > Advanced heating controls
- > Where supplied, white goods will be energy efficient (A+ or A rated or better).

Materials

- > Consideration will be given to using materials and construction that have a low environmental impact, such as those achieving an A+ or A rated under BRE's Green Guide.
- > Where possible, materials will be chosen that are responsibly sourced (such as FSC timber), recycled or reclaimed.
- > All insulation materials will have a GWP (Global Warming Potential) of 5 or less.

Water Use

- > Indoor water use will be restricted by use of fittings with lower flow rates, baths with smaller capacity (if applicable), dual-flush toilets, and (where applicable) washing machines and dishwashers with low water usage.

Surface Water & Flood Risk

- > Where possible, Sustainable Drainage Systems will be used to avoid, reduce, and delay the discharge of rain-fall run-off to public watercourses and sewers.
- > Measures are to be undertaken to reduce the risk of flooding where developments are in medium or high risk flood zones.

Waste

- > Construction site waste is to be minimised (diverted from landfill) by re-using materials on site (or to/from other sites), returning to the supplier where possible/practical, recovery/recycling, and composting

- > Hazardous waste will be avoided (or minimised where unavoidable).
- > If available, the kitchen design will incorporate fixed bin(s) in the kitchen cupboards to encourage recycling.

Health & Wellbeing

- > Key rooms have very good levels of daylighting, and décor will enhance this (the need for artificial lighting will also be reduced).
- > Sound insulation (between dwelling and adjoining buildings, where applicable), and within the dwellings, will meet or exceed current Building Regulation standards.
- > To ensure the dwellings are usable/adaptable for all potential existing and future owners or occupiers, as many as possible/practical of the 16 no Lifetime Homes criteria will be incorporated into the design and construction of the dwelling.

Management

- > Guidance will be provided to the end owner/occupier of the dwellings, providing information on the correct and efficient use of their home.
- > Security measures will be incorporated into the design and construction of the dwellings.

Summary/Conclusion

The dwellings will be designed to high levels of fabric insulation and air tightness, in line with current thinking, with air source heat pumps, to reduce energy use and CO2 emissions.

Therefore the proposal meets the requirements of London Borough of Richmond's Core Strategy for Sustainable Construction.

I trust this is satisfactory. Should you have any queries, or would like to discuss anything, please do not hesitate to contact me.

Yours sincerely

Joe Solti (Project Director) joe@thermenergy.co.uk

Energy Statement :	TJ-34 (Therm Energy Ltd)
Site Location :	59 Ham Street, Richmond TW10 7HR

SPECIFICATION (DRAFT)

<u>Construction and Insulation</u>	
<u>Element</u>	<u>U-Value</u> (W/m ² K)
<u>Exposed Wall</u> 102.5mm facing brick + 50mm residual cavity + 60mm Celotex CG5000 cavity insulation + 100mm Celcon block inner leaf + plaster or plasterboard on dabs internal finish.	0.25
<u>Basement Floor</u> Screed + 100mm Celotex FF4000 insulation + solid concrete slab.	0.16
<u>Roof (voids)</u> 400mm mineral wool quilt (100mm between joists + 300mm cross-laid).	0.11
<u>Roof (skellings)</u> 100mm Celotex FR5000 insulation (between raftres) + 50mm Celotex FR5000 insulation (under rafters).	0.16
<u>Windows/Doors</u> PVC-u or timber or thermally-broken metal or composite frame double-glazed + 16mm cavity (argon gas fill) + soft coat low-E glass, or similar to achieve U-value of 1.40W/m ² K - typically Window Energy Rating (WER) Band A.	1.40

<u>Heating, Ventilation & Renewables</u>
<u>Main Heating System</u> Air source heat pump (ASHP) + wet underfloor heating (MCS installer) = Daikin Altherma (or equal). No back-up gas boilers. Wood-burning stoves (wood only).
<u>Water Heating</u> From air source heat pump + electric immersion boost. Hot water cylinder highly insulated with factory-applied PU foam.
<u>Heating Controls</u> Time and temperature zone controls.
<u>Ventilation</u> Background ventilators & intermittent extract fans, or passive stack ventilation (Approved Document F1, 2010, amended 2013).

<u>Other</u>
<u>Detailing</u> Accredited Construction/Constructive Details (ACDs) - dwelling must be designed and constructed to this standard.
<u>Lighting</u> 100% of light fittings are dedicated low-energy (lamp luminous efficacy > 45 lumens/circuit watt, total output > 400 lamp lumens).
<u>Air Tightness</u> Design air permeability is 5m ³ /h/m ² at 50 Pa - to be achieved by air pressure test.