

Energy Statement

Trenchard Drive, Wythenshawe

Galliford Try Partnerships North West

February 2016

Prepared by AES Southern Ltd



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1 Introduction

Preface

- 1.1 Written by AES Southern Limited on behalf of Galliford Try Partnerships North West, this Statement has been prepared to detail the proposed approach to sustainable construction with respect to the development of the site at Trenchard Drive, Wythenshawe.

Purpose and Scope of the Statement

- 1.2 This primary purpose of this Statement is to demonstrate the sustainable construction proposals to accompany an application to vary a condition under the provisions of Section 73 of the Town and Country Planning Act 1990.
- 1.3 The Statement will detail changes in national policy since permission ref. 106943/FO/2014/S2 was granted which have implications for the continued enforcement of the Condition requiring Code for Sustainable Homes certification. It will demonstrate that sustainable development will be delivered through consideration of energy demand and CO₂ emissions, internal water use, surface water run-off, sustainable and environmentally responsible materials choices and the minimisation of construction and household waste.

Development Description

- 1.4 The proposed development is located approximately 8 miles south of Manchester City Centre, within the district of Wythenshaw. The site is in a principally residential area bordering countryside, and is classified as brownfield, with the existing mainly two storey building having previously been used a hotel.
- 1.5 The development will consist of 15 dwellings comprising a mix of 5 semi-detached pairs, 2 detached properties and a 3 dwelling terrace. Vehicular access is provided from Emerald Road to the south, with an additional access road from Trenchard Drive serving the central and eastern portion of the site.

2 Planning Conditions & Policy

- 2.1 The primary purpose of this Statement is to address Condition 5 of the permission for development ref 106943/FO/2014/S2, which states:

5. The development hereby approved shall achieve a post-construction Building Research Establishment Environmental Assessment Method (BREEAM) rating of at least four star sustainability rating under the code for sustainable homes for those elements of the development which are residential in nature. A post construction review certificate shall be submitted to and approved in writing by the City Council as local planning authority before any of the buildings hereby approved are first occupied.

Reason - In order to minimise the environmental impact of the development pursuant to policies SP1, T1-T3, EN4-EN7 and DM1 of the Core Strategy.

Code for Sustainable Homes

- 2.2 Condition 5 references the requirement for the dwellings to achieve Code for Sustainable Homes Level 4 certification. The Code for Sustainable Homes was a scheme sponsored by the government intended to promote and support the transition to more sustainable homes. It is the government's view that the Code has successfully achieved this aim, with updates to the Building Regulations now the appropriate mechanism to be used to drive standards further. The Code was therefore withdrawn following the conclusion of the Housing Standards Review on 25th March 2015.
- 2.3 The ministerial statement to Parliament¹ advised:
- "From the date the Deregulation Bill 2015 is given Royal Assent, local planning authorities...should not set... any additional local technical standards relating to the construction, internal layout or performance of new dwellings. This includes any policy requiring any level of the Code for Sustainable Homes to be achieved by new development; the government has now withdrawn the Code, aside from the management of legacy cases."*
- 2.4 This change is required to be reflected through amendments to all Local Plans, neighborhood plans and supplementary planning documents. It is therefore anticipated that Core Strategy Policy DM1 will be updated accordingly in due course to remove the requirement mandating certification of new development to Code standards, and planning obligations relating to this certification should not now be applied.
- 2.5 In light of these policy changes at a national level, assessing and certifying all dwellings against the Code for Sustainable Homes is therefore not considered appropriate for this development.

¹ DCLG, Planning update March 2015 - written Ministerial Statement, 25th March 2015

- 2.6 It should not be assumed however that the move away from Code for Sustainable Homes certification equates to a move away from high quality, sustainably designed and constructed homes.
- 2.7 Galliford Try's commitment to sustainable construction will ensure that the guiding principles of the Code for Sustainable Homes will continue to be applied to the development, as detailed in the following sections of this report, addressing the following key areas:
- Energy use & CO₂ emissions
 - Internal water consumption
 - Household waste & recycling
 - Construction site impacts and waste management
 - Sustainable and environmentally responsible materials
 - Protecting and enhancing the ecology of the site

3 Energy & CO₂ Reduction Strategy – Fabric First

- 3.1 In order to reduce energy demand and carbon dioxide emissions from the dwellings, it is proposed that the development at Trenchard Drive follows the Energy Hierarchy approach (Figure 1) associated with truly sustainable development.

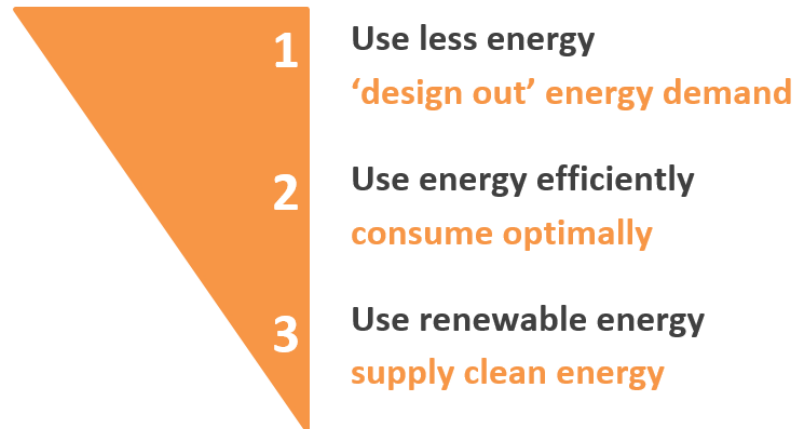


Figure 1. The Energy Hierarchy

- 3.2 As this hierarchy demonstrates, designing out energy use is weighted much more highly than the generation of low-carbon or renewable energy to offset unnecessary demand. Applied to the development of new housing, this approach is referred to as 'fabric first' and concentrates finance and efforts on improving U-values, reducing thermal bridging, improving airtightness, and installing energy efficient ventilation and heating services.
- 3.3 This approach has been widely supported by industry and government for some time, with the Zero Carbon Hub² and Energy Savings Trust³ having both stressed the importance of prioritising energy demand as a key factor in delivering resilient, low energy homes.
- 3.4 There is further explicit acknowledgement of the benefits of this approach through the introduction of Fabric Energy Efficiency Standards into Part L of the Building Regulations 2013, which is intended to "discourage excessive and inappropriate trade-offs... for example... poor insulation standards being offset by renewable energy systems with uncertain service lives."⁴
- 3.5 The benefits to prospective homeowners of following the Fabric First approach are summarised in Table 1.

² Zero Carbon Hub, Zero Carbon Strategies for tomorrow's new homes, Feb 2013.

³ Energy Saving Trust, Fabric first: Focus on fabric and services improvements to increase energy performance in new homes, 2010

⁴ The Building Regulations 2010, Approved Document L1A, 2013 Edition

Table 1. Benefits of the Fabric First approach

	Fabric energy efficiency measures	Bolt-on renewable energy technologies
Energy/CO ₂ /fuel bill savings applied to all dwellings	✓	✗
Savings built-in for life of dwelling	✓	✗
Highly cost-effective	✓	✗
Increases thermal comfort	✓	✗
Potential to promote energy conservation	✓	✓
Minimal ongoing maintenance / replacement costs	✓	✗
Minimal disruption to retrofit post occupation	✓	✗

Improved fabric specification

- 3.6 In order to ensure that the energy demand of the development is reduced, the dwellings will be designed to minimise heat loss through the fabric wherever possible. Table 2 details the design fabric specification, with the first column in this table setting out the Part L1A limiting fabric parameters in order to demonstrate the improvements that have been made.

Table 2. Proposed construction specification

	Part L1a Limiting Fabric Parameters	Indicative Proposed Fabric Specification
U value - external wall	0.30 W/m ² K	0.21 W/m ² K
U value - party wall	0.20 W/m ² K	0.0 W/m ² K
U value - plane roof	0.20 W/m ² K	0.11 W/m ² K
U value - ground floor	0.25 W/m ² K	≤ 0.14 W/m ² K
U value - windows	2.00 W/m ² K	1.4 W/m ² K
U value - doors	2.00 W/m ² K	1.3 W/m ² K
Air Permeability	10 m ³ /h.m ² at 50 Pa	4 m ³ /h.m ² at 50 Pa
Thermal Bridging	Default γ-value of 0.150	Junctions optimised to reduce bridging. Heat losses calculated.

Passive and active design measures

- 3.7 In order to further reduce energy demand, where practical dwellings will be designed with regard to the principles of passive design, including consideration of building orientation and site placement to maximise the potential for solar gain.
- 3.8 Passive and active design measures to reduce energy demand and balance internal and external heat gains include:
- Specifying glazing with a solar transmittance value (g-value) that has been carefully considered to strike the balance between useful solar gain in the winter and unwanted solar gain in the summer;
 - Minimising overshadowing from adjacent dwellings and vegetation;
 - Specifying highly insulated hot water cylinders with low heat loss values;
 - Installing high efficiency combi boilers to properties with one bathroom to eliminate the need for hot water cylinders;
 - Fully insulating all primary pipework;
 - Installing energy efficient lighting.
- 3.9 Due to the measures described to reduce internal heat gain, natural ventilation provided through window openings will allow sufficient air exchange rates to purge any heat build-up. Active cooling systems are therefore not proposed.

Site-wide CO₂ Reductions

- 3.10 CO₂ compliance standards were first introduced in the Building Regulations through Part L1A in 2006. Since then, successive updates raised this standard by 25% in 2010 and approximately a further 6% in 2013. The consequent improvement over Part L 2006 standards is demonstrated in Table 3.

Table 3. Site-wide CO₂ reductions to be achieved

	% Reduction over Part L 2006
Part L 2006	-
Part L 2010	25%
Proposed fabric specification	> 30%

- 3.11 The measures presented within this statement will ensure that site-wide carbon dioxide emissions are reduced to meet or exceed the requirements of Part L 2013. By delivering these reductions through improving the building fabric and specifying efficient building services, these reductions are built in to the lifetime of the dwellings, with minimal ongoing maintenance or replacement requirements.

4 Sustainable Design Principles

- 4.1 Table 4 sets out details of the Sustainable Design Principles to be applied at the development in lieu of achieving Code for Sustainable Homes certification. The commitments cover the majority of areas within a Code for Sustainable Homes assessment and additionally address further guidance contained within the Manchester Core Strategy, including Policy DM1.

Table 4. Sustainable design principles

Principle	Comment
Minimising energy consumption & CO₂ emissions	All dwellings will be constructed to meet and exceed the requirements of Building Regulations Part L1A 2013 through the approach described within the preceding sections of this strategy. Carbon dioxide emissions will be reduced through prioritising high levels of thermal insulation and minimising heat loss through thermal bridging.
Passive solar design	Dwellings will be designed with regard to the principles of passive design, including consideration of building orientation and site placement to maximise the potential for solar gain. Through this design process all dwellings will additionally benefit from high levels of daylight.
Moderating internal temperatures	Traditional brick & block construction will ensure that thermal mass will contribute to moderation of internal temperature profiles. Measures to limit unwanted internal heat gain include the specification of glazing with a solar transmittance value (g-value) that has been carefully considered to strike the balance between useful solar gain in the winter and unwanted solar gain in the summer. Hot water cylinders and primary heating pipework will be insulated to minimise heat loss to the dwellings.
Water saving measures	Dual flush toilets and low flow fixtures and fittings will be installed to limit internal water use to 125 litres/person/day. Water softeners, waste disposal units and bidets will not be installed.
Sustainable drainage	SuDs principles are to be applied at the site, including limiting hard surfaces and minimising impermeable areas.

Principle	Comment
Materials	All materials used will be responsibly sourced, with certification obtained wherever possible. Materials with a low environmental impact as per the BRE Green Guide will be specified.
Global Warming Potential (GWP) of insulants	All insulating materials will have a GWP of < 5 in manufacture and installation.
NO_x emissions	All heating systems to houses will produce dry NO _x levels of <40mg/kWh.
Household waste	All dwellings will be provided with suitable internal and external spaces to sort and store household waste for recycling as appropriate to local household waste collection services.
Construction waste	The development will be designed to effectively and appropriately monitor and manage construction site waste. Target benchmarks for resource efficiency will be set in accordance with best practice - eg. m³ of waste per 100m² / tonnes waste per m². Wherever possible materials will be diverted from landfill through re-use on site, reclamation for re-use, returned to the supplier where a 'take-back' scheme is in place or recovered and recycled using an approved waste management contractor. A target to divert 85% by weight/volume of non-hazardous construction waste will be applied.
Ecology	The principally brownfield nature of the site means that ecological impact will be minimal. Trees to the south western corner of the site are to be retained, with additional planting proposed to the north eastern corner between the development and Styal Road. An Arboricultural Impact Assessment has been undertaken by TBA Landscape Architects. An Extended Phase 1 Habitat Survey and Bat Inspection report has additionally been undertaken by REC Ltd and can be referred to for further details of ecological management proposals.
External lighting	All external lighting will be designed for energy efficiency and supplied with daylight sensors / PIR control where appropriate.

5 Conclusions

- 5.1 This primary purpose of this Statement is to demonstrate Galliford Try's proposed approach to sustainable construction in developing the site at Trenchard Drive, Wythenshawe.
- 5.2 Recent changes to national policy have been identified, and it is considered that these changes have an impact on the continued application of Condition 5 of permission ref 106943/FO/2014/S2. Following the DCLG announcement concerning the discontinuation of the Code for Sustainable Homes in March 2015, it is considered that seeking certification against this standard is now inappropriate.
- 5.3 In lieu of this certification and in order to demonstrate Galliford Try's commitment to sustainable development, the developer will seek to incorporate a wide range of sustainable design principles as set out within this statement. Key areas which would have been previously considered within a Code assessment are addressed, including:
- Energy use & CO₂ emissions
 - Internal water consumption
 - Household waste & recycling
 - Sustainable and environmentally responsible materials
 - Construction site impacts and waste management
 - Protection and enhancement of ecological value
- 5.4 With respect to the key area of energy use and CO₂ emissions, it is proposed that the development follows the widely-supported 'fabric first' approach to sustainable construction. The fabric and services specification has been detailed, demonstrating high levels of thermal insulation, low air leakage and a minimisation of thermal bridging. This approach will reduce energy demand and CO₂ emissions and secure numerous additional benefits - including improved thermal comfort and reduced energy bills - whilst building these benefits in to the lifetime of the dwellings.