

**ENERGY STRATEGY
FOR Rose of York**

DOCUMENT ISSUE STATUS

Issue	Description	Date	Author	Checked by
I	Draft Issue for comment	02/09/21	OT	SG
I.1	Areas updated	21/01/22	OT	

Executive Summary

Climate Integrated solutions have been tasked by Cunnane Town Planning an initial energy assessment for the proposed re-development of Rose Of York Hotel to assess the likely achievable BREEAM score and carbon outcomes.

This report investigates how the Rose of York development can meet Building Regulations 2013 (plus 2016 Amendments) while coming as close as possible to meeting local and London carbon targets.

The scope of the assessment is a pub and hotel. The total area of the building being assessed is 1250.7m², with approximately 161m² consisting of a new build including a side and rear extension with additional bedrooms and about 1,089m² making up the existing building to be renovated into a modernised pub and bedrooms.

The usual 15% be lean and 35% on site carbon savings cannot be achieved primarily due to the developments nature as a renovation of an existing building. It is generally the case that lower in use savings are accepted in renovations due to the restraints of working with the existing fabric and because insisting the same standards were met would act as a powerful disincentive to reusing existing building stock which has a massive upfront carbon saving compared to demolition and new build – not to mention conservation benefits.

On top of these considerations Hotel developments in general struggle to achieve good carbon ratings, this is due to the number of bath/showers making the expected hot water use a major factor in the energy calculations combined with current non-domestic calculation methodology not having ways to reduce this.

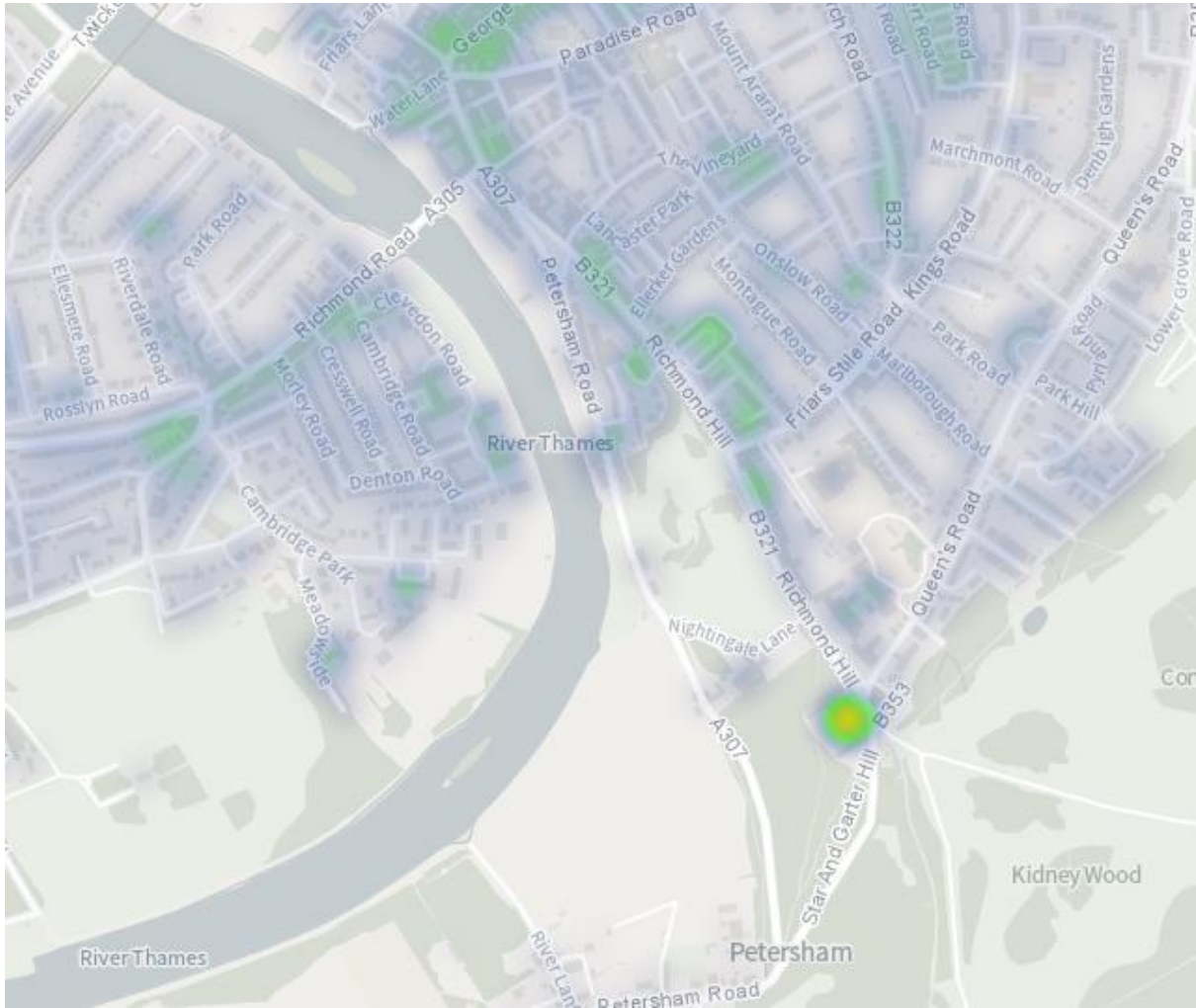
Additionally, conservation considerations place restrictions on the ability to achieve carbon reductions as the building is locally listed as a Building of Townscape Merit, having been designated as such by the London Borough of Richmond upon Thames this is expected to limit options to upgrade the thermal performance of the existing building, limit material choices for new elements and limit the renewable technologies that will be allowed.

Be Lean

Due to the early stage of the design and restraints that will be placed upon it by the existing building and by conservation requirements leading to reduced material choices default fabric values have been assumed for new elements at this stage. Therefore the Be Lean results for the new build match that of the notional building with no improvement over Part L. The existing elements do not meet the default values in Part L therefore overall the building exceeds new build Part L standards.

Be Clean

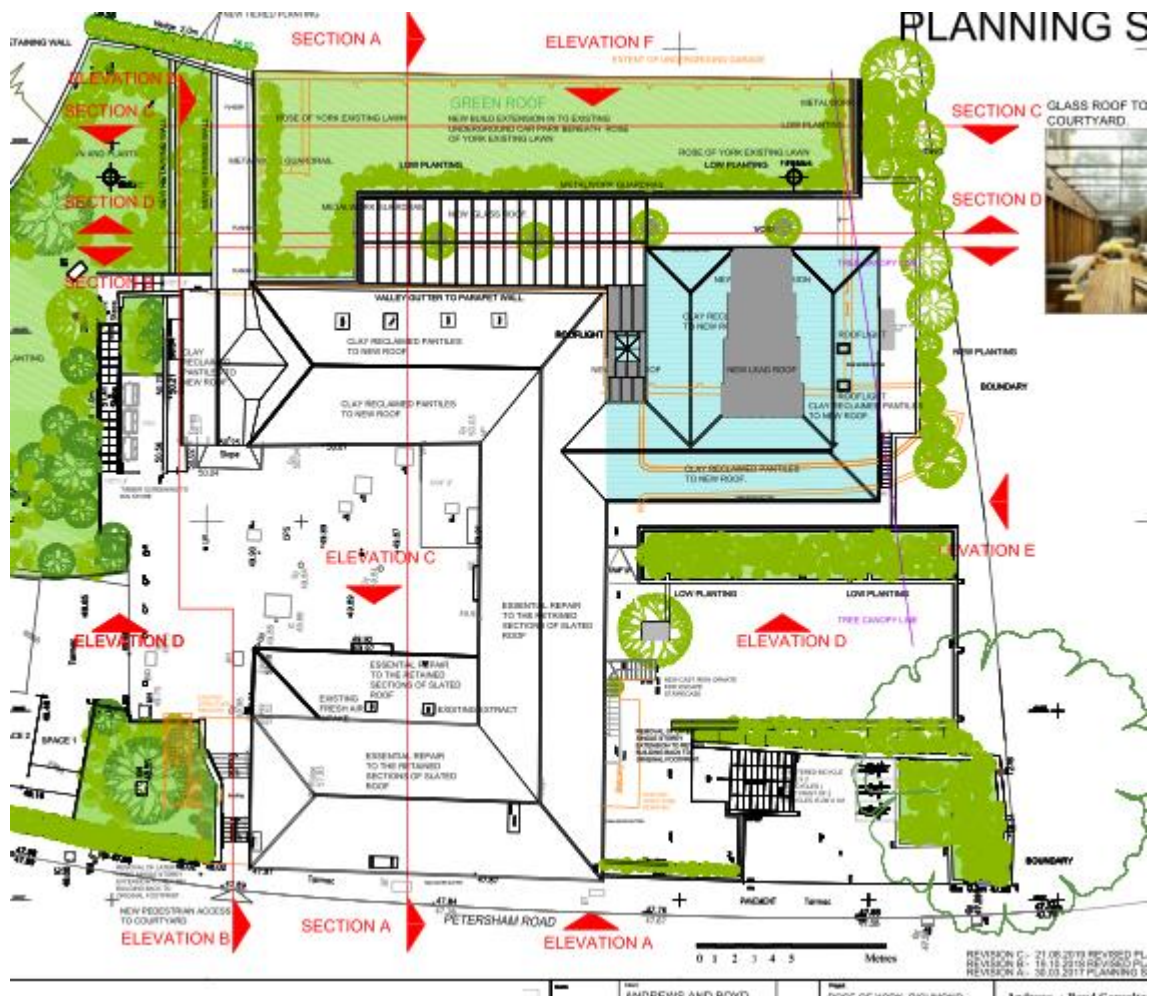
There is no nearby developed or proposed community heating network as shown in the London Heatmap extract below. The development is well below the size to justify initiating one. As the site is just one building no site wide network is applicable with a building wide distribution system from an efficient heat pump proposed. Therefore no improvements falling under the Be Clean category are included.



Be green

An air source heat pump (ASHP) is proposed as the space heating system, this technology generates a coefficient of performance (COP) of around 2.5 to 3.5 meaning it will produce approximately two and a half to three and a half units of heat for each kWh of electricity consumed. The technology is considered a renewable and low carbon technology so the gains from this highly efficient heating system are counted under the Be Lean category.

Roof plans below (bottom of the page is South) show that all south facing roof that's not overshadowed is either on the existing Building of Merit or on roof space connected to it and also road facing. It has therefore been assumed at this time that conservation concerns will prohibit the use of solar thermal and solar PV.



Other forms of renewable technology in the form of wind and water are not appropriate for this site.

The use of ASHP results in a 14.96% savings over the Be Lean for an overall 6.86% carbon saving over part L despite the fabric issues. For the newbuild parts of the building only a 17.73% carbon saving over part L is achieved.

Offset.

As a renovation most of the development is exempt from the requirement to meet net-zero carbon by offsetting carbon that can't be eliminated on site. However, the new build elements will be expected to achieve net-zero carbon. To this end a separate BRUKL assessment has been carried out which considers only the newbuild parts of the proposal. The outputs of this have been fed into the GLA Carbon Reporting tool to convert the results into SAPI0 carbon factors as required by the GLA Energy Assessment Guidelines with the results below:

	Total regulated emissions (Tonnes CO2 / year)	CO2 savings (Tonnes CO2 / year)	Percentage savings (%)
Part L 2013 baseline	30		
Be lean	29	1	3%
Be clean	29	0	0%
Be green	26	3	9%

After all Of the suggested site measures have been incorporated 26 tonnes of CO2 are produce pa
Over the notional lifetime of the development of 30 years this comes to 780 tonnes which at the usual
£95/tonne comes to a £74,100 offset payment expected at this stage. However, it is hoped that this
can reduce significantly as the design develops further.