Matrix to Assess Climate Change Impacts - Marlowe Road Estate – Increase in Density

Aim is to reduce Carbon Emissions (CO2) by 80% by 2050	Positive impact	Negative impact	Mitigation measure	Effect on CO2 emissions (+ or - tonnes of CO2)	Opportunity to promote
Water Water Use and Flooding	Enhanced water efficiency in the new homes – as required under CfSH or its equivalent. Rain gardens to be included to reduce risk of flooding. Sustainable water management is promoted through the use of the roofscape, permeable paving (including to highway areas), SuDs features such as swales and rain gardens,	Increased housing numbers and density	Redesigned public realm and road layouts Water use within the development will be reduced through the use of efficient sanitary-ware to achieve the 105 litres per person per day target for all residential properties as set by LBWF and GLA Policy.	Not known – will be identified as detailed plans are worked up.	Reinforce with new occupants. Stakeholder events At handover of new properties including technical demonstration of appliances and user manuals

Aim is to reduce Carbon Emissions (CO2) by 80% by 2050	Positive impact	Negative impact	Mitigation measure	Effect on CO2 emissions (+ or - tonnes of CO2)	Opportunity to promote
	together with general soft landscaping. The value of the green infrastructure measures will be determined using the Greater London Authority's Urban Greening Factor				

Aim is to reduce Carbon Emissions (CO2) by 80% by 2050	Positive impact	Negative impact	Mitigation measure	Effect on CO2 emissions (+ or - tonnes of CO2)	Opportunity to promote
Energy Energy efficiency and energy saving in buildings, including opportunities for installation of renewable energy generation	Buildings will be a minimum of level 4 - Code for Sustainable Homes (CfSH) or its equivalent The development will incorporate a high standard of energy efficiency measures, including enhanced insulation, mechanical ventilation with heat recovery and low energy lighting. The scheme is targeting a 10% improvement over Part L 2013 from energy efficiency measures.	Increase in unit numbers is mitigated in part by having a more efficient energy standard.	Redesign of the homes and estate with more ambitious and efficient energy efficiency. An energy strategy and plan to be developed through the construction of the development. Solar photovoltaic (PV) panels will be installed on the roofs of the apartment blocks to provide the development with renewable electricity generation and to meet the London Plan Policy SI2 target of a 35%	Code for Sustainable Homes (CfSH) level 4 or its equivalent. Meet a 35% carbon reduction below building regulation standards. Reduction of 225 tonnes per annum achieved	Inclusion of district heat network and energy centre greatly assists in meeting the required planning policy carbon reduction targets.

Aim is to reduce Carbon Emissions (CO2) by 80% by 2050	Positive impact	Negative impact	Mitigation measure	Effect on CO2 emissions (+ or - tonnes of CO2)	Opportunity to promote
	In line with GLA policy SI3 and LBWF Policy 89 all dwellings will be provided with heating and hot water through connection to the site wide district heating system with the energy centre located in Phase 1 of the development.		on-site improvement over Part L 2013. To achieve the London Plan SI2 Policy requirement of net zero regulated emission the residual emissions will be met through payment to the LBWF's offset fund.		

Aim is to reduce Carbon Emissions (CO2) by 80% by 2050	**Positive impact**	**Negative impact**	**Mitigation measure**	**Effect on CO2 emissions (+ or - tonnes of CO2)**	**Opportunity to promote**
Air Air quality, pollution	Discouraging car use and encouraging walking, cycling and use of public transport	5 year project development period may see short term drops.	Phases 2B / 3 of the Marlowe Road scheme will be car free. An air quality assessment was required as part of the planning process	Not known – will be identified as detailed plans are worked up.	Reinforce with new occupants.
Waste – reducing, reusing and recycling waste	Efficient and up to date waste management and recycling both within the demolition and construction processes through a waste strategy, but also in terms of the facilities provided for the residents once the development is completed to	Increased housing density Demolition of existing homes.	Redesign of the estate with more ambitious and efficient waste management and recycling proposals Waste strategy and plan to be required and agreed through the Construction process. All homes will be	Not known – will be identified as detailed plans are worked up.	Reinforce with new occupants.

Aim is to reduce Carbon Emissions (CO2) by 80% by 2050	Positive impact	Negative impact	Mitigation measure	Effect on CO2 emissions (+ or - tonnes of CO2)	Opportunity to promote
	enable and encourage the recycling of household waste such as composting facilities		provided with facilities will also be provided for houses.		
Land Use of brown-field and green-field sites	The proposed development is on an existing brownfield residential site.	Increased housing density	Community space increased on current provision and enhanced. Better use of land. More private gardens.	Not known – will be identified as detailed plans are worked up.	Redevelopment of brownfield sites, minimises impact on green field land and improves upon existing standard of housing.
Bio-diversity Effects on bio-diversity including green space, trees, rivers and streams	Landscaping proposals will incorporate a planting mix designed to provide high levels of ecological value on the site and incorporate native species. Inclusion of biodiverse	Temporary interruption during construction phases	Bio-diversity management plan will be required and agreed as detailed plans are worked up.	Not known – will be identified as detailed plans are worked up.	The redevelopment of will provide new public realm and increased open space available to all local residents

Aim is to reduce Carbon Emissions (CO2) by 80% by 2050	Positive impact	Negative impact	Mitigation measure	Effect on CO2 emissions (+ or - tonnes of CO2)	Opportunity to promote
	roofs will also seek to enhance the biodiversity of the site. The landscape proposals incorporate urban greening principles, with living roofs, tree planting and a diverse range of habitat and planting types. Greening features are balanced against functional requirements and local highway adoption guidance.				

Aim is to reduce Carbon Emissions (CO2) by 80% by 2050	Positive impact	Negative impact	Mitigation measure	Effect on CO2 emissions (+ or - tonnes of CO2)	Opportunity to promote
Transport Travelling to deliver service. Discouraging car use and encouraging walking, cycling and use of public transport	In line with standards in the Local Plan and Development Management DPD, car parking for the proposed development will be dependant on the following criteria: • The PTAL score of the development zone. • Number of bedrooms per dwelling (residential developments only). • The CPZ. Wood Street study area falls within three different PTAL ranges from	5 year project development period will see short term interruptions.	Phases 2b / 3 will be car free. The estate will have a low car usage strategy for the area. The development is located close to public transport. Cycle parking and safe routes are incorporated into the design of the development. A high level of secure and accessible cycle parking facilities will be provided. A provision of electric vehicle (EV) charging points will be	Not known – will be identified as detailed plans are worked up with developer. A 10% reduction in car ownership would equate to travelling 55 miles less by vehicle (balanced by increase in car sharing, cycling, walking or public transport) saving 0.01 tonnes of CO2 on average per person.	Reinforce with new occupants.

Aim is to reduce Carbon Emissions (CO2) by 80% by 2050	Positive impact	Negative impact	Mitigation measure	Effect on CO2 emissions (+ or - tonnes of CO2)	Opportunity to promote
	levels 2 to 4.		provided.		
Buildings Adaptability of buildings to heat or flooding. Use of green roofs, rainwater harvesting etc.	Buildings will be a minimum of level Code level 4 equivalent for Sustainable Homes (CfSH)	Minimal	The Good Homes Alliance and CIBSE TM59 overheating assessments will be used to determine appropriate mitigation measures to reduce the heat risk to occupants. The risk of overheating in dwellings is expected to be minimised through the incorporation of stacked balconies to provide shading, reasonably sized	- And meet a 40% carbon reduction below building regulation standards.	As the design process evolves, aspects of the redevelopment could be showcased. Increased insulation levels required under CfSH will ensure greater adaptability to heat.. meets reduction targets.

Aim is to reduce Carbon Emissions (CO2) by 80% by 2050	Positive impact	Negative impact	Mitigation measure	Effect on CO2 emissions (+ or - tonnes of CO2)	Opportunity to promote
			openings, solar control glazing, and designing dwelling layouts to be dual aspect where possible.		

Commentary on any differences in financial costings for climate change mitigation / adaptation measures including energy efficiency and potential external grant sources
Not known – will be identified as detailed plans are worked up.
Potential "whole life costing" savings ie: increased installation costs will achieve running cost savings over lifetime; including reduced use of resources eg: water saving devices
Not known – will be identified as detailed plans are worked up.
Explanation of Proposal chosen in context of results matrix assessment, including what mitigating steps can and have been taken

The option chosen for delivery of the regeneration programme will give the Council more control and influence over final design before and during the construction process. Sustainability used as part of criteria for selecting the developer partner.
5.1.1 **Total Tonnes of CO2 & DEC rating of building to be occupied:** The proposals will deliver the Councils CO2 reduction target of 40% below building regulations (2010) by reducing by 225 tonnes per annum.