



PRELIMINARY ASSESSMENTS REPORT

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CODE FOR SUSTAINABLE HOME

-

RE-SUBMISSION

At

55 ROCHESTER PLACE

&

3A WILMOT PLACE

LONDON NW1 9JU

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1.0 Summary

- i) NimbusRose have been employed, by the Micagold Limited, to provide a Pre-Assessment of Code for Sustainable Homes and BREEAM offices for the proposed development at 55 Rochester Place & 3A Wilmot Place.
- ii) The project is a mixed use scheme consisting of a 5 storeys residential block that comprises of 4 flats to Wilmot Place and a 4 storey mixed block with 1 residential flat and 1 commercial unit to Rochester Place.
- iii) The London Borough of Camden policy, when considering new residential developments, is that at least 10% renewable energy sources can be produced on site.
- iv) Solar heating panels are considered to be the most appropriate solution for achieving the 10% reduction. To achieve this, it is necessary that 25m² of the roof is available for the solar panels.
- v) The solar panels will be connected to individual boiler systems. The heat produced will serve the hot water services.
- vi) This system will help reduce the CO₂ emissions by 1.71 kgCO₂/m²/yr.
- vii) The Pre Assessment for the Code for Sustainable Home for the residential units has achieved 69.41% and achieved a level 3 of the Code.



2.0 Introduction

- (i) A Detailed Planning Application has been submitted by Charles Khoo Architect for the demolition and erection of a residential block of flats associated with a house and a commercial unit.
- (ii) With regard to Renewable Energy and Sustainability Camden council require at least 10% reduction of CO₂ emissions, of future schemes by on site renewable energy and that development are built to Code for sustainable Homes standards.
- (iii) NimbusRose has been employed, by Micagold Limited, to provide a Pre Assessment of the Code for Sustainable Homes for the residential units. As part of the report NimbusRose will provide details of the renewable energy system for the proposed development at 55 Rochester Place & 3A Wilmot Place.
- (iv) For a full understanding of the scheme, it is essential that this report is read with the drawings provided by Charles Khoo Architect (Drawings number: 234/P7K, 234/P8K, 234/P9K, 234/P10K, 234/P11K, 234/P12K, 234/P13K, 234/P14K & 234/P15K). These have been submitted as part of the Detailed Planning Re-Submission.
- (v) By virtue of the Project being at planning stage, the scheme is in the early parts of design. With this in mind there is the opportunity to further develop and detail the scheme with the sustainability issues.
- (vi) One of the drivers of the design will be to implement sustainable options as practically prove possible. Those elements that will either be implemented or considered have been described within this sustainability report.
- (vii) The project is a mixed used development comprising of a 5 storeys residential block of flats (3 one bedroom flats & 1 two bedrooms flat) and a 4 storeys residential three bedrooms flat with a commercial unit fronting Rochester Place.
- (viii) Meeting were held on the 14th of April 2008 with NimbusRose and Charles Khoo Architect with the following attendant:

- | | | |
|----------------|-----------------|------------------------|
| • Charles Khoo | Architect | Charles Khoo Architect |
| • Eddie Picton | BREEAM Assessor | NimbusRose |

3.0 Renewable Energy Sources

- (i) The council policy when considering new development is that there is an achievement of a significant and measurable reduction in CO₂ emissions and in this regard it is policy that there is at least 10% reduction of CO₂ emissions of the future scheme, by on-site renewable energy sources.
- (ii) Not all forms of renewable energy are considered suitable for this application. The following describes examples that have been considered and rejected.
- (iii) Ground source heat pump is considered to be impractical for this development considering the lack of available space to implement the technology, Furthermore the technology is not cost effective; due to the cost of drilling the boreholes and the long payback period.
- (iv) Solar heating and photovoltaic panels are considered to be particularly appropriate for a domestic environment and their use will be developed further as the design progresses. In the mean time, an idea of what can be achieved is described below.
- (v) Wood and straw fuels have been currently precluded, due to problems associated in controlling the supply to a multi-tenanted building and associated difficulties in fuel delivery and storage.
- (vi) With regard to wind turbines, the operation noise levels and shadow flicker problems associated with them do not currently make them suitable for this project.
- (vii) From rule of thumbs calculation the following can be demonstrated for residential energy consumption:

| | kWh/m ² /yr | KgCO ₂ /m ² /yr |
|--------------------------|------------------------|---------------------------------------|
| Electricity | 27 | 11.61 |
| Heating & gas appliances | 24 | 4.56 |
| Hot Water Services | 36 | 6.84 |
| TOTAL | 87 | 23.01 |

- (viii) Achieving 10% renewable target means producing 8.7kWh/m²/yr on site with renewable energy.
- (ix) As already said, the solar panel could be the alternative that can be developed in the proposed new built to achieve the target.
- (x) With the Ecotube panel developed by Riomay it is possible to produce 1200kWh per annum per panel. The total surface area of the flats being of around 304 square meters, each panel can provide 3.95 kWh/m²/yr of hot water.
- (xi) In order to achieve the 8.7kWh/m²/yr required for the 10% renewable we will need to install a minimum of 3 panels on the roof. This will require less than 25m² of roof available and reduce the CO₂ emissions from 23.01 kgCO₂/m²/yr to 21.30 kgCO₂/m²/yr.



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- (xii) The solar panels will be connected to individual systems and will serve the hot water services with the heat produced.
- (xiii) It is highlighted that access on the roof must be provided for the maintenance of the panels.



4.0 Code for Sustainable-Homes

- (i) The Pre Assessment for the Code for Sustainable Homes can be found in the Appendix A at the end of this report.
- (ii) The Pre Assessment for the Code for Sustainable Homes comprises of nine main categories where credits are awarded.
- (iii) The categories and percentage of total score are as follow:
- | | |
|--|--------|
| • Energy and CO ₂ Emissions | 36.40% |
| • Water | 9.00% |
| • Materials | 7.20% |
| • Surface and Water Run-off | 2.20% |
| • Waste | 6.40% |
| • Pollution | 2.80% |
| • Health and Wellbeing | 14.00% |
| • Management | 10.00% |
| • Ecology | 12.00% |
- (iv) For the Energy and CO₂ emissions category it is understood that the developer will reduce the CO₂ emissions by using wet solar panel. The heat losses of the whole building will be reduced with secondary glazing provided to sash windows. The developer will also use low energy light fittings and PIRs; it is noted that the external lighting is very limited. The developer will also aim to provide cycle storage for 64% of dwellings. Even though a home office cannot be proposed, the developer will try to provide a designated study area in the living rooms of each flats / house.
- (v) In the Water category no rainwater butts will be installed due to the lack of landscaping but the developer will provide sanitary equipment that helps reduce water consumption as much as it is possible.
- (vi) From experience it is understood that it very difficult to ensure that materials used are responsibly source. All materials used by the developer will be products with a minimum of "A rating" from the Green guide. This is mandatory in the Materials category to achieve a level 3 of the Code for Sustainable Homes.
- (vii) In the surface and water run-off category the developer will attenuate the water run-off by providing porous paving on the courtyard, terrace and patio. The new development is not located in a flood risk area.
- (viii) For the waste category, the developer will supply each flat and house with internal storage of a total capacity of 30 litres minimum and it is understood that Camden Council operate a minimum of a fortnightly collection scheme. Composting facilities need to be organised with the local authorities. During the construction, the on-site waste will be monitored and reported.



- (ix) Particular consideration must be taken by the developer at detail design stage to ensure that the maximum possible points are scored in the Pollution category.
- (x) Health and Wellbeing is currently giving a fair score with the scheme providing day lighting in the living rooms and dining rooms. It is highlighted that roof lights are proposed in the new scheme which is in a low level housing area and therefore offers a view of the sky from the top floors. The house is proposed with a patio which will provide private space.
- (xi) High quality standard management will need to be provided during the construction in order to obtain the maximum score in this category.
- (xii) In the Ecology category, points can be scored by default due to the non ecological existing land. The developer will enhance the wildlife habitat by greening the unit A roof with a brown roof.
- (xiii) The total score for the Pre Assessment for the Code for Sustainable Homes is 69.41% with a level 3 achieved.



5.0 Conclusion

- (i) High efficiency solar panels are the key to renewable energy that will produce 10% of the total energy consume on site by the proposed development.
- (ii) The Pre Assessment for the Code for Sustainable Home for the residential units has achieved 69.41%.



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6.0 Appendix A

| Categories of Environmental Impact | Credits in Category (% of Tot. Categories) | Code Categories | Available Credits | Credits Achieved | Code Criteria | Design Stage Evidence | Post Construction Stage Evidence |
|--------------------------------------|--|--|-------------------|--|---|-----------------------|----------------------------------|
| Category 1 | | | | | | | |
| Energy and CO2 Emissions | 29 (36.40%) | Dwelling Emission Rate | 15 | 5 | 25 % improvement of DER over TER | | |
| | | Building Fabric | 2 | 2 | Heat Loss Parameter (HLP) ≤ 1.10 | | |
| | | Internal Lighting | 2 | 2 | ≥75 % Dedicated energy efficient internal fittings | | |
| | | Drying Space | 1 | 1 | Indoor Drying line availability | | |
| | | Energy Labelled White Goods | 2 | 2 | A+ & A rating EU Energy Efficiency Labeling Scheme | | |
| | | External Lighting | 2 | 2 | Dedicated energy efficient external fittings and adequately controlled | | |
| | | LZC Technologies | 2 | 1 | 10% energy is supplied from LZC Technologies | | |
| | | Cycle Storage | 2 | 2 | 2 Cycle storage for every two dwelling | | |
| | | Home Office | 1 | 1 | Sufficient space for Office room in home | | |
| | | Approximate weighted value of each credit | 1.25 | 18 | Total Credit achieved | | |
| CATEGORY 1 - TOTAL PERCENTAGE | | | 22.50 | Percentage equivalent achieved in this category 62 | | | |
| Category 2 | | | | | | | |
| Water | 6 (9.00%) | Indoor Water Use | 5 | 3 | Water consumption (≤ 105 litres/person/day) | | |
| | | External Water Use | 1 | 1 | No communal garden space - Credit achieved by default | | |
| | | Approximate weighted value of each credit | 1.50 | 4 | Total Credit achieved | | |
| CATEGORY 2 - TOTAL PERCENTAGE | | | 5.00 | Percentage equivalent achieved in this category 67 | | | |
| Category 3 | | | | | | | |
| Materials | 24 (7.20%) | Environmental Impact of Materials | 15 | 12 | All materials to be A rated on the Green Guide ratings | | |
| | | Responsible Sourcing of Materials -> | | | | | |
| | | Basic Building Elements | 6 | 0 | 80% of materials responsibly sourced will not be achieved | | |
| | | Finishing Elements | 3 | 0 | 80% of finishing element responsibly sourced will not be achieved | | |
| | | Approximate weighted value of each credit | 0.30 | 12 | Total Credit achieved | | |
| CATEGORY 3 - TOTAL PERCENTAGE | | | 1.60 | Percentage equivalent achieved in this category 50 | | | |
| Category 4 | | | | | | | |
| Surface Water Run-off | 4 (2.20%) | Management of SWR from dev | 2 | 2 | 2 credits available for using SUDS | | |
| | | Flood Risk | 2 | 2 | Flood Zones 1, TBC Environmental agency not able to advise the zone. | | |
| | | Approximate weighted value of each credit | 0.55 | 4 | Total Credit achieved | | |
| CATEGORY 4 - TOTAL PERCENTAGE | | | 2.20 | Percentage equivalent achieved in this category 100 | | | |
| Category 5 | | | | | | | |
| Waste | 7 (6.40%) | Storage of non-recyclable waste and recyclable household waste | 4 | 4 | Adequate internal storage for recyclable and non recyclable waste is provided with a local Authority Collection scheme. | | |
| | | Construction Site Waste Management | 2 | 2 | Monitoring & reporting of on-site waste | | |
| | | Composting | 1 | 0 | Home composting facilities need to be organised with the local authority | | |
| | | Approximate weighted value of each credit | 0.91 | 6 | Total Credit achieved | | |
| CATEGORY 5 - TOTAL PERCENTAGE | | | 5.40 | Percentage equivalent achieved in this category 88 | | | |
| Category 6 | | | | | | | |
| Pollution | 4 (2.80%) | Global Warming Potential of Insulants | 1 | 1 | All insulated Materials have GWP < 5 | | |
| | | NOx Emissions | 3 | 3 | Heating - nitrogen oxides emissions ≤ 40 mg/kWh | | |
| | | Approximate weighted value of each credit | 0.70 | 4 | Total Credit achieved | | |
| CATEGORY 6 - TOTAL PERCENTAGE | | | 2.80 | Percentage equivalent achieved in this category 100 | | | |
| Category 7 | | | | | | | |
| Health and Wellbeing | 12 (14.00%) | Daylighting | 3 | 1 | Average daylighting factors of at least 1.5% for living rooms, dining rooms and studies | | |
| | | Sound Insulation | 4 | 3 | Airborne insulation SdB higher /Impact sound insulation SdB lower than BR part E | | |
| | | Private Space | 1 | 0 | No Private/semi private outdoor space has been provided | | |
| | | Lifetime Homes | 4 | 4 | Dwelling assessed on lifetime homes principles | | |
| | | Approximate weighted value of each credit | 1.17 | 8 | Total Credit achieved | | |
| CATEGORY 7 - TOTAL PERCENTAGE | | | 9.33 | Percentage equivalent achieved in this category 67 | | | |
| Category 8 | | | | | | | |
| Management | 9 (10.00%) | Home User Guide | 3 | 3 | Provision of user guide on off. home operation | | |
| | | Considerate Constructors Scheme | 2 | 2 | Commitment to Best Practice CCS | | |
| | | Construction Site Impacts | 2 | 2 | Monitor and report on energy use/CO2 | | |
| | | Security | 2 | 2 | Crime Prevention Design Advisor | | |
| | | Approximate weighted value of each credit | 1.11 | 9 | Total Credit achieved | | |
| CATEGORY 8 - TOTAL PERCENTAGE | | | 10.00 | Percentage equivalent achieved in this category 100 | | | |
| Category 9 | | | | | | | |
| Ecology | 9 (12.00%) | Ecological value of site | 1 | 1 | Credits awarded for Low Ecological Value | | |
| | | Ecological enhancement | 1 | 0 | Not considered to have ecological features so no enhancement can be undertaken. | | |
| | | Protection of ecological features | 1 | 1 | Credits awarded by default for Low Ecological Value | | |
| | | Change in ecological value of site | 4 | 2 | Overall change in species per hectare is neutral | | |
| | | Building footprint | 2 | 2 | Ratio of Internal Floor Area is greater than 3:1 for houses and 4:1 for flats | | |
| | | Approximate weighted value of each credit | 1.33 | 6 | Total Credit achieved | | |
| CATEGORY 9 - TOTAL PERCENTAGE | | | 8.00 | Percentage equivalent achieved in this category 67 | | | |