

May 2024

SUSTAINABILITY STATEMENT

144 SOUTHAMPTON STREET

READING RG1 2RD

SUMMARY

This sustainability statement has been prepared in support the application for planning permission for 144 Southampton Street. 144 is a mid-terraced property grade II listed building. The full details of this property are presented in the separate document (The Heritage Statement) with this application. 144 is a 4-storey building including a basement and a converted loft. The building has become derelict and unlivable through several years of neglect and left unoccupied. This application is for conversion of the existing house into 4 HMOs units and provision of a new drive to provide access for delivery and emergency vehicles. 144 is situated within walking distance from Reading town Centre and is well served by public transport. The proposal provides a secure shelter for 6 bicycles and bins collection area close to the main road.

CONSTRUCTION METHODS

The conversion will involve removing the existing first floor bathroom, demolition of existing bathroom stud partitions, new stud partitions to incorporate 4 new en suites in the first and second floors plus general repairs and refurbishments. The project will incorporate the use of all construction materials to be eco-friendly from responsible and sustainable sources. The proposal shall also include (where possible) sourcing materials from the BRE Green Guide for major building elements. Where possible, the reuse and recycling of materials from existing buildings will be incorporated. The development shall not use insulation materials containing substances known to contribute to stratospheric ozone depletion or with the potential to contribute to global warming.

External Walls

Existing external walls are built of 330mm thick solid brickwork. In order to comply with the current Building regulations for the refurbishment of this building a U-value of 30W/m²K must be achieved. To achieve this value, it is proposed to glue 50mm thick Celotex insulation with building adhesive directly on the walls plaster surface and apply 12.5mm thick plasterboards on dabs and finish with skim plaster.

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Celotex insulation is an effective insulating product that is made with minimum 50% recycled material, which helps reducing the landfill waste and conserves energy required for heating purposes due to its thermal properties reduces the rate of heat loss with smaller thickness compared with other types of insulations.

Scaling Ceilings and Loft

Existing roof is built with 100X50 timber rafters spaced approximately 400mm apart. Part of the roof forms scaling ceilings in the first floor converted loft. The scaling ceilings should achieve a maximum U-value of 0.16W/m²K to comply with the current Building Regulations for a refurbishment work. The following steps should be taken to insulate scaling ceilings:

- Remove existing ceilings to expose roof rafters.
- Increase the depth of rafters by adding 10mm thick strips of wood to the underside of rafters,
- Insert 110mm thick Celotex insulation between existing rafters.
- Apply vapor barrier membrane to cover all area of the scaling ceilings.
- Fix 12.5mm thick plasterboard over vapor barrier and finish with skim plaster.

Insulate existing loft with 400mm thick Rockwool rolls. Rockwool is made from volcanic rocks, which are versatile natural material, eco-friendly and sustainable.

Glazing

Heat loss through glazing is highest than other external elements of a building. Heat loss through windows varies between 25-47% depending on the type of glazing and the overall area of windows. The maximum U-Value according to Building regulations for all new glazing has to be 1.2W/m²k.

In most projects involving a listed building, a secondary glazing is specified to reduce the rate of heat loss through single glazed traditional windows. However, this solution is not preferred due to aesthetic reasons and restriction in opening windows when is needed, which is prone to be removed by the occupants.

An alternative solution that is more effective in reducing the rate of heat loss than double glazing is the use of Vacuum Glazing that achieves 0.4W/m²k U-value, which looks like single glazing and its overall thickness of 6.2mm can be easily fitted in the original windows. Vacuum Glazing also more effective in reducing transmission of sound than double glazing.

Energy use

The thermal performance of proposed vacuum glazing is even lower than triple glazing. It would reduce the rate of heat loss through existing single glazed (4.8-5.8 W/m²k) by 12 to 14.5 times.

All new light fixtures both internal and external will be installed with LED bulbs which must have a luminous efficiency greater than 45 lm/W and a total output exceeding 400 lumens.

Hot water for kitchens, bathrooms, and heating systems will be electric by energy-efficient EHS Single Phase Combi Boiler or similar.

Thermal efficiency

This development will be designed in accordance with the current Building Regulation Standards for refurbishment of existing dwellings. Each thermal element will meet or exceeds the current regulations.

Water efficiency

All products such as dish-washers, and washing machines will be water consumption efficient with mandatory water efficiency labels to help people to make informed choices about how they can save water without having to make significant changes to their daily lives. This would be similar to the traffic light energy efficiency

Flood risk/ sustainable drainage

This development is located in an area of low flood risk and incorporates a surface water management strategy to reduce surface water discharge from the site. The strategy aims to reduce overall surface water runoff by incorporating Sustainable Drainage Systems taking into account a 1 in 100-year storm event including a 30% increase for climate change. All new soakaways formed on site will use proprietary soakaway crates and have a minimum capacity of 1m³/25m² of roof area drained.

Biodiversity

The site lies within the built-up area of Reading Town Centre within a residential street. The existing rear garden is covered by turf and landscaping allowing rain water to be absorbed in the ground.. There are no significant trees and nor there are any sign of endangered species present in the site.

The Environmental Act 2021 requires most development (apart from exempt

developments) to achieve a 10% net gain (BNG) that will become mandatory in April 2024. A large area of the rear garden is landscaped in the new proposal. It proposes a bushy tree and shrubs in the rear landscaped area to encourage habitat for birds and insects.

The site as it is can be considered to be of a low distinctive habitat. With the new development taking place the proposed landscaping, and plantation of new trees and shrubs would enhance the ecological value of the site and with proper and continuous management would elevate the level of distinctive habitat to a moderate level, which would be possible to achieve 10% BNG or possibly more.

CONCLUSIONS

This Sustainability Statement demonstrates that the proposed development would deliver low-carbon and sustainable construction in accordance with the Local Authorities' Sustainable Development Policies. The proposal offers limited greenhouse emissions, carefully considered impacts of climate change, and incorporated appropriate measures within the proposal. It would additionally improve the biodiversity within the site.