

2023. 055_15 Goffa Mills_Design, Sustainability, Construction and Access Statement

Site History

The existing site was redeveloped in 1970's, from the original Low Mill that was converted from a corn mill to a cotton mill in 1798. It was converted to apartments and housings in the late 1970's. It is known locally as "Goffa Mill" from its one time use by the Gofar Tyre & Rubber Company.

Existing Building

15 Goffa Mill is a two storey semi detached dwelling, built in 1974, with an on street parking to the front, a garage that has already been reduced in size. The garage was subdivided into an external store and extra interior space for the kitchen diner as a result of these modifications, the garage can no longer be used for the purpose it was originally intended and is now used only for storage.

The property was built in 1974, in 2011 the previous owners completed some internal modifications which involved taking space from the existing garage, this was approx 1/3 of the garage in order to create extra space for the ground floor kitchen and dining area, as a result of these modifications, the garage can no longer be used for the purpose it was originally intended and is now used only for storage.

The property is very dark internally, with little external glazing, meaning the lighting has to be on most of the time. There is little physical or visual connection between the house and the garden

Unfortunately the property does not have a lot of natural light throughout, the kitchen/dining area is quite dark having only one small window and the stairwell has no natural light at all, it is dark all the time, and whilst using this area we have the lights on during the daytime which is not cost effective or an efficient use of electricity.

Our Client is not wanting to increase the existing footprint of the property, in fact we propose to slightly decreasing the area in order to improve the rear elevation and provide better daylighting and views of the green.

Our Client is concerned about energy efficiency and the effects this has on the environment, hence the reason they would like to add solar panels and skylights, whilst removing the mullions in the windows which will create much needed natural light.

Proposed modifications

We propose to remove the rear porch and rear bay window, replacing them with a glazed bi-fold door and internal modifications that will improve the ground floor function. A relocated front door within the existing front store will provide a proper front entrance with cloakroom and WC, rather than the current entrance coming straight into the kitchen.

We are removing several internal ground floor walls to provide a large, sociable kitchen diner area.

Mullions to first floor windows will be removed to increase daylight penetration and views out of the building.

These improvements will improve the function of the building, without eroding the external space, lowering energy consumption and improving the buildings physical and visual connection to the garden, external public amenity space and river beyond

Construction and Sustainability

The proposed development at 15 Goffa Mill will meet or exceed the requirements of the Building Regulations where technically and economically feasible.

The proposal will include or consider the following low energy features to reduce carbon dioxide emissions resulting from operation of the improved dwelling:

- Replacement of old fabric with new to regs standard and beyond where economically feasible
- Increased daylighting within the building will lead to less reliance on artificial lighting
- New glazing will be of a lower U-value than existing resulting in less heat loss
- Increased south facing glazing will lead to higher solar heat gains and to less reliance on heating
- Removal of rear porch and bay window and replacement with new construction will result in an overall heat loss reduction

Low energy light fittings in the existing part of the dwelling and in the extension;
Insulated hot water tank, if specified, to comply with Domestic Building Services Compliance Guide;
Heating provided by a highly efficient condensing boiler and regulated by adequate heating controls, i.e. programmer, room thermostats and TRVs;

All the new glazing elements in the extension will have low U-value and low g-value (solar heat transmittance) conserving the heat within the dwelling and preventing overheating in the summer;
All the new opaque elements (walls, floor, roof) will meet ,or improve on, the maximum U-value targets for these elements;

All the above elements form part of the Building Regulations compliance assessment and will be carried out at detailed design stage. The compliance check will be followed by issue of an Energy Performance Certificate (EPC) confirming the energy rating of the new flat and demonstrating its environmental rating according to Standard Assessment Procedure (SAP).

The SAP calculations and Building Regulations compliance check does not, however, take into account the impact of unregulated energy on the dwelling's total CO2 emissions. To further ensure that the dwelling reduces its impact on the environment, all the white goods, if specified, will be low energy (rated A+ and above).

Good levels of natural daylight will be achieved for the scheme. This will reduce reliance on artificial lighting and thus limit energy consumption.

Shading control systems in the form of occupier controlled interior blinds/curtains will offer efficient solar control as they provide both solar shading and glare control, which in turn improves occupier comfort and reduces the risk of overheating within the dwellings.

To achieve a reduced indoor water use of < 95 litres/person/day, a combination of the following water efficient fittings are proposed for the dwellings:

- Dual flush WCs - cisterns with both a half flush and full flush. The half flush delivers 3 litres for the removal of liquids, whilst the full flush delivers 6 litres for a long flush. These cisterns save over 33% of water when compared to a 6 litre cistern.
- Flow restrictors & aerators - restrictors fit within the existing plumbing structure of the shower head or connection pipe to taps to restrict water flow and reduce the outlet flow and pressure. Aerators restrict the flow of water but maintain the pressure by adding air to the water giving a perception of a power shower/taps without the water and energy use.
- Appliances - where dishwashers and washing machines are specified, consideration will be given to low water consuming appliances with water usage figures as specified in the table below, or similar.

The design proposals for the property will incorporate climate change mitigation and adaptation features as far as technically and economically feasible bearing in mind the compact size of the development and its limited scope for change in terms of the building's geometry or orientation.

The use of locally sourced materials will be prioritised, where feasible, to reduce transport related emissions and to support local supply chains.

Preference will be given to the selection of sustainable materials with a low environmental impact over their life cycle, as well as sustainable procurement and waste disposal.

Sustainable construction practices include good site management to encourage resource efficiency, increase material recovery and avoid the disposal of waste to landfill.

The following sustainable construction practices will be considered for the proposed development:

- Reducing construction and excavation waste to landfill.
- Ensuring the products used in construction are responsibly sourced.
- Best practice policies should be adopted in respect of air and/or water pollution arising from site activities

Where feasible timber used on site will be reclaimed, re-used or responsibly sourced.

Discounted Measures

Air Source Heat Pump.

This has not been included in the design as the existing building fabric is not considered to be a sufficiently air tight construction

This is a small domestic project on modest budget, We feel that the improvements we are proposing are appropriate for the scale of development