RESOURCES AND ENERGY STATEMENT

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Ecological and Environmental benefits of the green roof

Control of rainwater and precipitation
The steady increase in urban development continues to reduce the total area of permeable ground available to absorb rainwater run off.
Hard construction materials (like roof tiles, concrete paving and tarmac roadways etc.), discharge water very quickly reducing effective evaporation and loading the drainage systems which in turn can contribute to flooding.

Green roofs can play a significant role in helping to manage storm water run-off. Even the thinnest extensive green roof system will absorb 40% of the average rainfall and equally importantly, the remaining 60% will drain off at a much slower rate compared to an exposed roof. This significantly reduces the pressure on the drainage systems and allowing much faster evaporation of accumulated moisture. Intensive green roofs with their deeper soil levels can actually retain up to 90% of the average rainfall.

Many European countries have already recognized this problem and provide legislation for rainwater management, and in return offer significant tax reduction incentives to owners of commercial or industrial buildings who install green roof systems.

Energy Conservation
An unprotected or poorly insulated roof can lead to overheating of rooms directly below it as hard impervious construction materials such as concrete, stone, asphalt or tarmac, absorb solar energy raising temperatures.
Green Roofs improve the thermal performance of buildings, helping to keep them cool during warm weather by reducing heat absorption and allow air conditioning costs to be reduced.
In winter a green roof provides additional insulation so reducing heating costs for the building. Planting can also act as a wind break thereby reducing wind chill.

Air Quality Improvement
Green roofs retain and therefore reduce airborne dust helping to filter and improve air quality by attracting particles to the damp surfaces of the vegetation and soil. Plants also absorb gaseous pollutants through their leaves and metabolize them so removing them from the environment.
During the natural process of photosynthesis, plants convert carbon dioxide to oxygen which improves the immediate air quality.

Noise reduction
The plants and substrate contribute as a sound barrier providing excellent acoustic performance towards noise reduction. When the green roof is wet this enhances the reduction even further.

Sustainable habitat for plants & wildlife
With continued urban expansion, vital natural habitat is lost every day for many of our indigenous plants, insect and bird species.
Green roofs provide a practical and effective alternative, helping to both restore and sustain a natural habitat. With Green Roofs it is possible not only to create new living areas, but also recreate the natural habitat for many of our endangered species of plants and insects and provide safe and undisturbed nesting sites for birds.

Use of recycled materials
Many of the materials used in green roof construction are manufactured from recycled building materials, plastics and rubber reducing landfill disposal.

In addition to the water retentive and associated benefits of the green roof proposed are described above. Within the landscape the surface are to be preliminarily permeable in then make up to minimize surface water run off.

It is proposed that a water butt or similar storage facility be installed for irrigation of the landscape. In addition the viability of storing grey water for use in within the building will be investigated.
All cisterns, taps, fittings will be specified to provide an optimum balance of cost and water usage.

Levels of thermal performance of the building fabric above the minimum standards required for energy efficient use for the life of the building.

Where possible it is proposed to use recycled or materials from a renewable source.

The selection of the energy supplier to the building proposes to use ECO friendly provider.