PROMETHEAN
PLANNING

Jasmine House,
High Street,
Henfield
BN5 9HN

RAINWATER HARVESTING MAINTENANCE AND MANAGEMENT PLAN

V2
15th March 2025

Prepared by Ben Kirk MSc

Location

The site is located in the Henfield Conservation Area

The property is a Grade II Listed Building. Designated on 09/05/1980 with List entry number 1192605

The property contains a number of addresses, these are listed as:

- The Garden Flat Jasmine House High Street Henfield West Sussex BN5 9HN
- BN5 Magazine First Floor Jasmine House High Street Henfield West Sussex BN5 9HN
- Goodness Henfield Jasmine House High Street Henfield West Sussex BN5 9HN
- Jasmine House High Street Henfield West Sussex

The Proposal

The property comprises a florists and café / juice bar on the ground floor with a garden flat to the rear. The first floor comprises office space with ancillary storage rooms at second floor.

The proposal is for the part change of use and extension of the building to create a florists and café / juice bar on the ground floor along with 2 x 1 bedroom studio flats and 2 x 1 bed studio flats across the first and second floor.

Water neutrality

The application site falls within the Sussex North Water Supply Zone, where increased demand for mains-water would exacerbate demand for the continued use/scale of public groundwater abstractions at Hardham Water Works contributing to associated adverse effect upon the integrity of the Arun Valley SAC, SPA and Ramsar sites.

Therefore, based on the evidence it is reasonable to conclude that, without mitigation, the proposal would result in an adverse effect on the integrity of the Arun Valley sites, either alone or in combination with other plans and projects.

A water neutrality strategy dated 4th July 2024 has been approved which proposes rainwater harvesting to reduce the existing and proposed water usage.

The following sets out the maintenance and management of the rainwater harvesting system.

Rainwater harvesting

Rainwater Harvesting is proposed to be installed to meet the water demand for the florist which uses entirely non potable water and for non-potable water in the flats.

The water shall be stored in an underground tank located to the west end of the plot.

Ensuring certainty of the supply to meet the demand

From the figures provided in the water neutrality report dated 4th July 2024 it is clear that the rainwater harvesting system will meet the non potable water demand for the site and will meet the required 35 days of storage, which will provide sufficient supply during periods of drought.

Where drought periods extend beyond 35 days, the rainwater harvesting system has been designed to allow for up to 60 days of drought tolerance and so there is no need for an automatic mains backup.

This will ensure that sufficient water is available at all times, even during extended periods of drought.

Filtration Measures proposed to ensure water quality

The rainwater harvesting supply will undergo a process of filtration in accordance with BS EN 16941-1:2018, to ensure water quality is suitable for non potable use.

The water will pass through leaf guards and a water filter which will remove coarse particles, upstream of the storage and fine particles will be retained by sedimentation and floatation.

All water will then be filtered with a UV filter to remove microorganisms before being distributed.

BS EN 16941-1:2018 states that frequent testing should not normally be required for rainwater harvesting systems to ensure the water quality. It states that observations for water quality should be made during maintenance visits and testing should be carried out where the system is not operating satisfactorily.

Annual water samples will be tested for the following in accordance with BS EN 16941-1:2018 :

- pH
- TOC
- Colour
- Turbidity
- Suspended solids
- Conductivity
- Cl, NO3, SO4
- Na, Ca, Mg, Al
- Ni, Cr, Cu, Pb
- Total & Dissolved Fe
- Mn
- Ammonium/Ammonia
- TVC, E.Coli, Coliforms, Pseudomonas aeruginosa, Enterococci, Clostridium perfringens

Maintenance and Management Plan

Responsibilities.

The following sets out the long-term management and maintenance of the rainwater harvesting systems at the proposed development.

It is vital that the occupants have a robust inspection and maintenance plan for the lifetime of the development to ensure the quality and yield of the water being supplied ensuring that the proposed development will remain water neutral.

Industry guidance, such as that provided in BS EN 16941-1:2018 and manufacturers guidance has been used to provide the maintenance and management plan.

As the system will be considered as a private water supply it will be governed by the Water Supply (water Quality) Regulations 2016. These are regulated by the local council's Environmental Health Officer or Pollution Control Officer.

The regulations in England and Wales do not require monitoring to be undertaken where the water supply is to a single domestic dwelling unless concerns are raised by the owner or occupier.

However, it is understood that the Local Authority have taken the decision to regulate all of these private supplies on a local basis. The applicant is therefore happy to commit to provide the testing results and documentation to the local authority within a period of 14 days of request in writing.

The Drinking Water Inspectorate's Private Water Supply regulations sets out that it is the responsibility of the homeowner to ensure that all necessary maintenance activities are carried out in a timely manner.

The occupants of the property shall be aware of the system but it is expected that the occupants will enter in to a maintenance agreement with a company that has specialist knowledge of the systems. It is expected that as a minimum, the maintenance work will be carried out by a competent person who must have prior knowledge of the rainwater harvesting systems onsite.

Treatment of water supply.

Preliminary treatment such as leaf guards on gutters and a water filter will be provided prior to the water reaching the storage tank.

A first flush diverter will be included to divert particles contained in rainwater away from the tank and to a suitable drain. These measures will prevent coarse solids and organic matter from entering the storage tank.

Fine particles will be separated either by sedimentation or flotation to the water surface.

A calmed inlet will be incorporated in the tank to prevent the sediment being disturbed by the inflow of water. Removal of the sediment will be carried out on a 6 monthly basis.

A floating pump will be used to extract the water from the tank, set above the sediment level
Maintenance of the system

The annual maintenance inspection shall include:

- Inspection and cleaning of the tank
- Cleaning of gutters
- Inspection of filters
- Inspection of pumps
- Inspection of overflow areas
- Testing of the water supply

The results of the annual maintenance inspection and all sample testing shall be recorded and shall be kept with the property for the lifetime of the development.

Filters shall be changed on a 3 monthly basis.

Contingency measures for system issues.

If a water sample failed, the point of use would be investigated by a British Water certified engineer. This would be reported to the LPA.

Drain down points for each water pipeline will be installed for ease of cleaning and sterilization before re-activation of the system after it has been out of use due to lack of rainfall/use.

Should the system fail, it would be investigated and repaired by a British Water certified engineer. This would likely mean that the system could be out of action for 7-10 days.

In these circumstances the occupants would seek a supply of bottled water or other supply of water sourced from outside the Arun Valley sites' catchment area.

The British Water certified engineer will undertake the completion of a Regulation 6 risk assessment by a suitably competent person (as required by the Private Water Supply (England) Regulations 2016) prior to the water supply being put into use and this will be provided to the Environmental Health Officer at the LPA prior to occupation of the unit.

The above is considered to be a detailed plan which provides sufficient information to ensure the supply is safely maintained and that the development remains water neutral.