Hurston Place, Hurston Lane,
Pulborough, RH20 2EW

February 2024

Water Neutrality Statement

Introduction

The enclosed statement is aimed to show how it is possible to build and provide ongoing maintenance for an outdoor swimming pool and achieve water neutrality at the same time.

This statement is being submitted to support and complement the planning application for pool and associated house at Hurston Place, Hurston Lane, Pulborough, RH20 2EW.

Background

The site is a private residence known as Hurston Place. The property is listed but it does not fall within the boundary of the South Downs National Park.

The application seeks consent to build an open-air heated in ground reinforced concrete pool with fully insulated shell. Pool usage summer season only April – September.

The proposed pool dimensions are 5m x 11m with depths of 1.2m shallow – 2m deep and a free board of 100mm from coping to working skimmer height.

Baseline calculations

As there is no existing pool at the property, the calculations baseline usage for existing is to be zero.

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Overall demands of proposed pool

Pool build water consumption – this is a one-off water use to construct the pool:
This figure is based on standard cement mortar mixes for pools block-work construction at 120sq.m., its waterproof rendering at 90sq.m., its cement-based adhesives and grouting for final tile finishes at 90sq.m. A further 10% has been added for cleaning and washing down.

Total usage 4,048 litres:
All concrete pours for floor and wall cavities are batched off site and delivered in by external concrete contractor. No water is to be used from site.

Pool volume:
The swimming pool volume is 88,000 litres.

Post-commissioning and regular maintenance

The filtration system will require regular cleaning. This is done via a process known as backwashing. This process reverses the flow of pump water through the pool's filter, ejecting any dirt and debris to a drainage outlet.

The amount of backwashing that is required is dependent on how dirty the filters are. It takes between 1-1.5 minutes to complete a backwash cycle for a residential pool with average usage. It is recommended this process should be carried out fortnightly. The amount of water that is consumed per backwash will depend on the filtration rate of the filter.

For the proposed pool, the filters' filtration rate is 22,500 litres per hour. This calculates down to 375-562 litres backwash. The filter though will only require backwashing for the time the pool is operational i.e. April – September – 26 weeks, backwashing fortnightly will equal on average 13 times per season. For the reminder of the year, October – March the swimming pool will be in its dormant winterised state, with the filtration system drained for frost protection.

Calculation of water demand for pool build and initial filling

1 x only water usage:
Pool build + pool volume = 4,048 + 88,000 = total 92,048 litres

Calculation for ongoing annual maintenance

April – September:
Pool backwashing = 13 x 562 litres = total 7,306 litres per annum

Water reduction

The swimming pool is to be fitted with an automatic solar cover to minimise evaporation when the pool is covered.

The potential pool fill of 88,000 litres will be undertaken by bulk off-site tanker filling. It is proposed that the main hi-rate sand filter is fitted with a multi-cyclone pre-filter, to further reduce the need for backwashing.

Water offsetting

It is proposed that the swimming pool's overflow be terminated to a 10,000 litre underground holding tank. This tank will then be used to pump-feed the swimming pool auto top-up system.

The swimming pool will also have a surface area of 55sq.m. for rainfall catchment – this is equal to 55 litres of water captured and harvested per every 1mm of rainfall.

Conclusion

According to Southern Water's information, on average, long term rainfall patterns for Pulborough in West Sussex, the data shows a 49.5mm average per month. This gives the potential using of the proposed scheme to harvest and capture 2,722 litres rainwater per month. This is potentially 16,335 litres per open swimming pool season from April to September.

This figure of 16,355 litres equates to more than 120% over capacity for annual maintenance requirements, and recaptures the 4,048 litres used for the initial build.

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