

Cooper Associates

Consulting Structural Engineers



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August 2024

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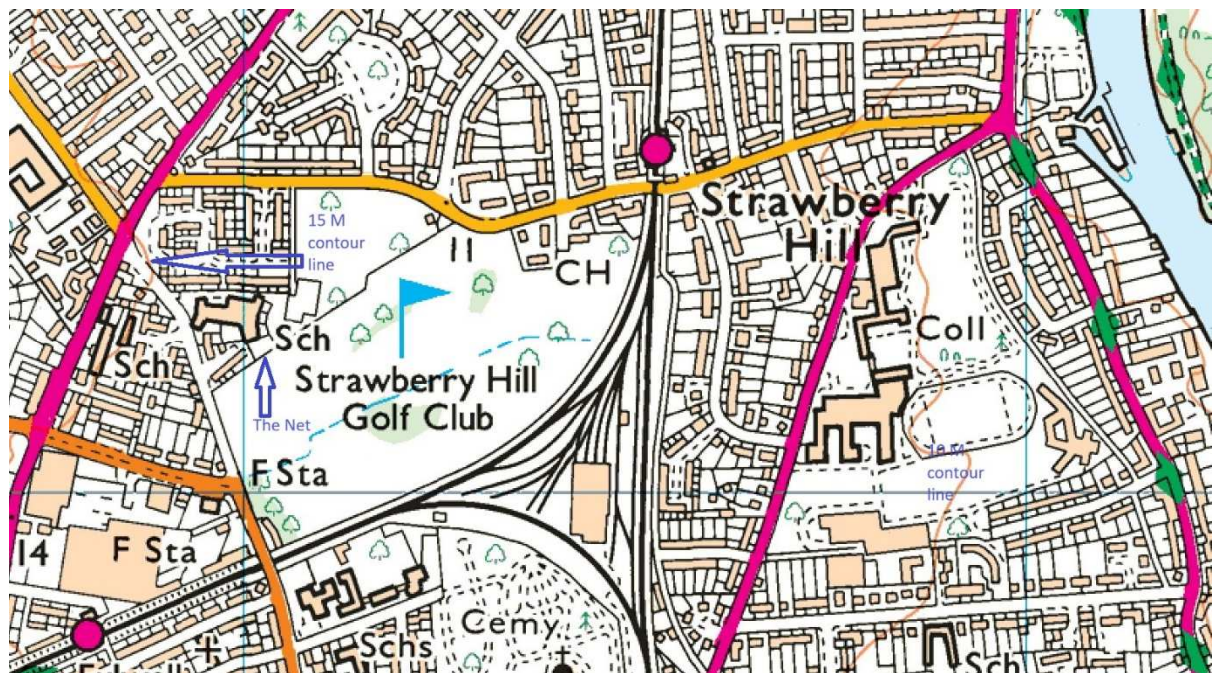
Flood and rainwater assessment:

Strawberry Hill Golf Club, Wellesley Road, Twickenham, TW2 5SD

INTRODUCTION

Cooper Associates have been instructed to undertake a Flood Risk and Drainage Assessment in support of the proposed erection of 'golf ball stop netting'. This measures 7.4 metres in height and 30 metres in length.

This report is to support a planning application by the Strawberry Hill Golf Club.

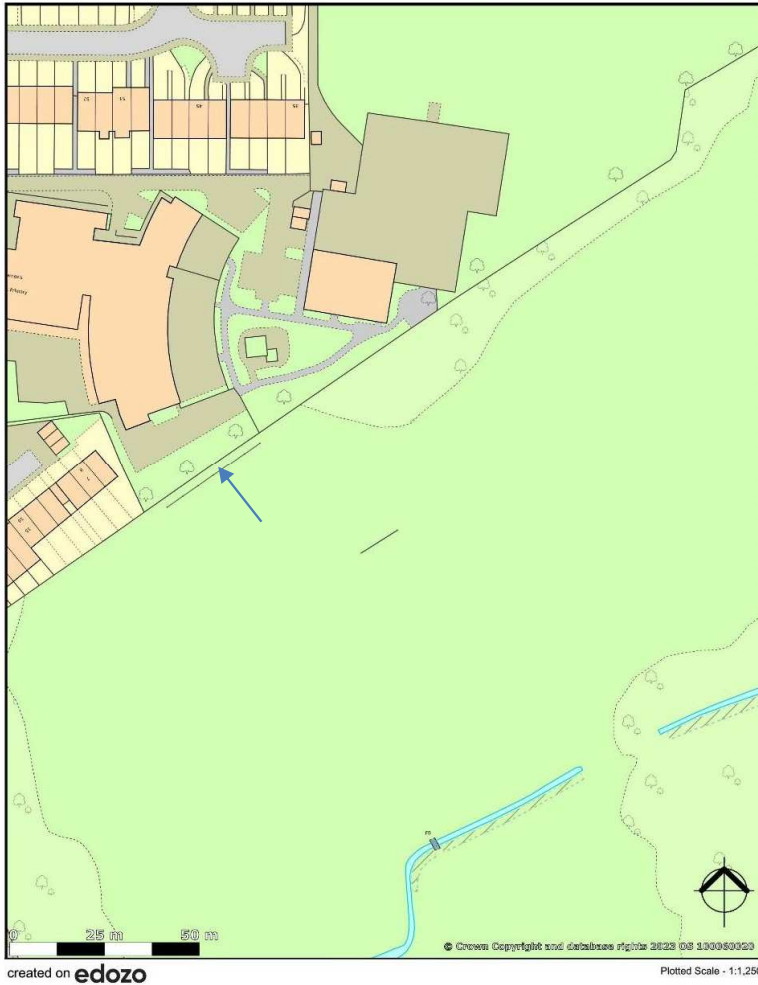


Site location: Fig 1

Cooper Associates Structural Engineers Limited

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PROPOSED BLOCK PLAN

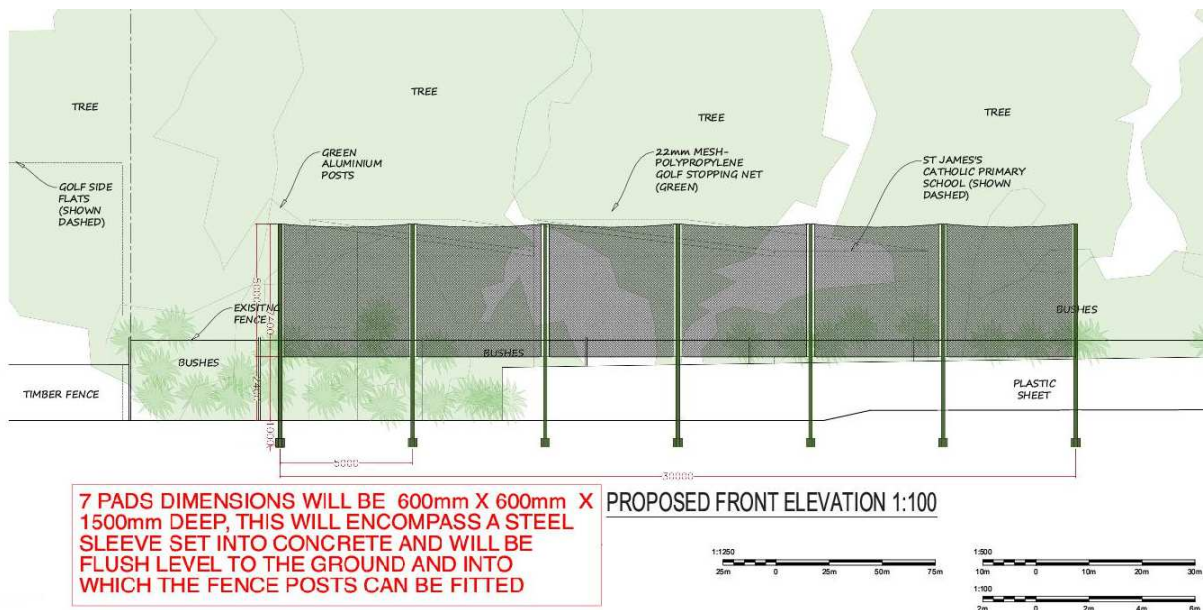


Arrow indicates the golf ball stop netting, 30 metres in length.

The netting is illustrated below and is founded on 7 relatively small isolated concrete pads.

Net location: Fig 2 above

Elevation on the Net: Fig 3 below



DISCUSSION

The net will be located to the west of a large open space - the Golf Club grounds. These grounds are in an active residential area (Fig 1).

The River Thames is to the East of the site and is tidally influenced at this location. The site is situated within an area which benefits from defences in the form of raised linear defences along the River Thames, and the Thames Barrier.

The Thames Barrier became operational in 1982 and protects London against tidal flooding and future sea level rise from climate change. The TE2100 study states that defences will be maintained and improved over the next 100 years to account for climate change.

WATER LEVELS

The Environmental Agency provides a series of product 4 & produce 5/6 information to determine future flood levels. Their Estuary Model Node Location Maps show that our property is located at node 2.2 along the Thames River.

This gives:

2008	Extreme water level	5.01m
	Statutory Defence Level	5.54m
2065 to 2100	Design Water Level	5.48m
	Defence Level	5.95m
2100	Design Water Level	5.92m
	Future Defence Level	6.40m

The ground level in the area is located between contour lines 15m to the West and 10m to the east – (Map fig 1) and so is located well above any risk of the Thames flooding in the foreseeable future.

MAPING SHOWING FLOOD RISKS



Flood map for planning

Your reference: **Golf Club** Location (easting/northing): **515453/172282** Created: **6 Aug 2024 16:18**

Your selected location is in flood zone 1, an area with a low probability of flooding.

The following maps show that the ground is in Flood Zone 1 with a low probability of flooding because of surface water only

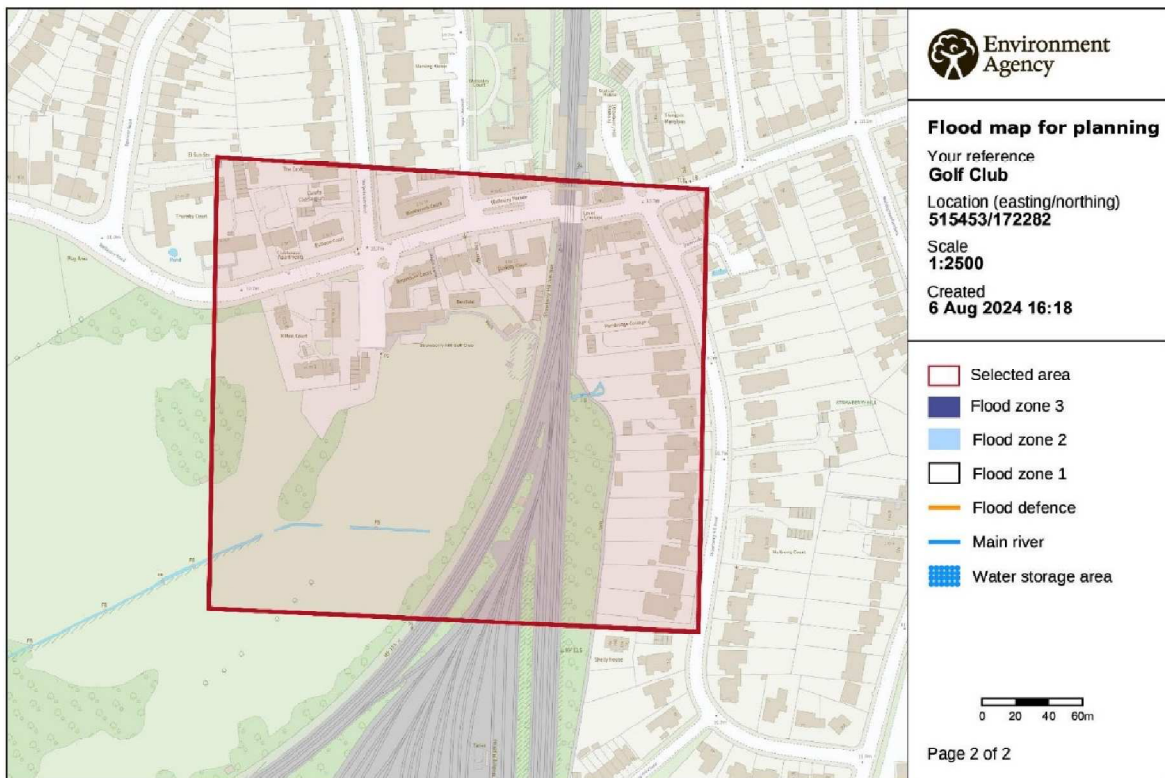
You will need to do a flood risk assessment if your site is **any of the following:**

- bigger than 1 hectare (ha)
- In an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

Notes

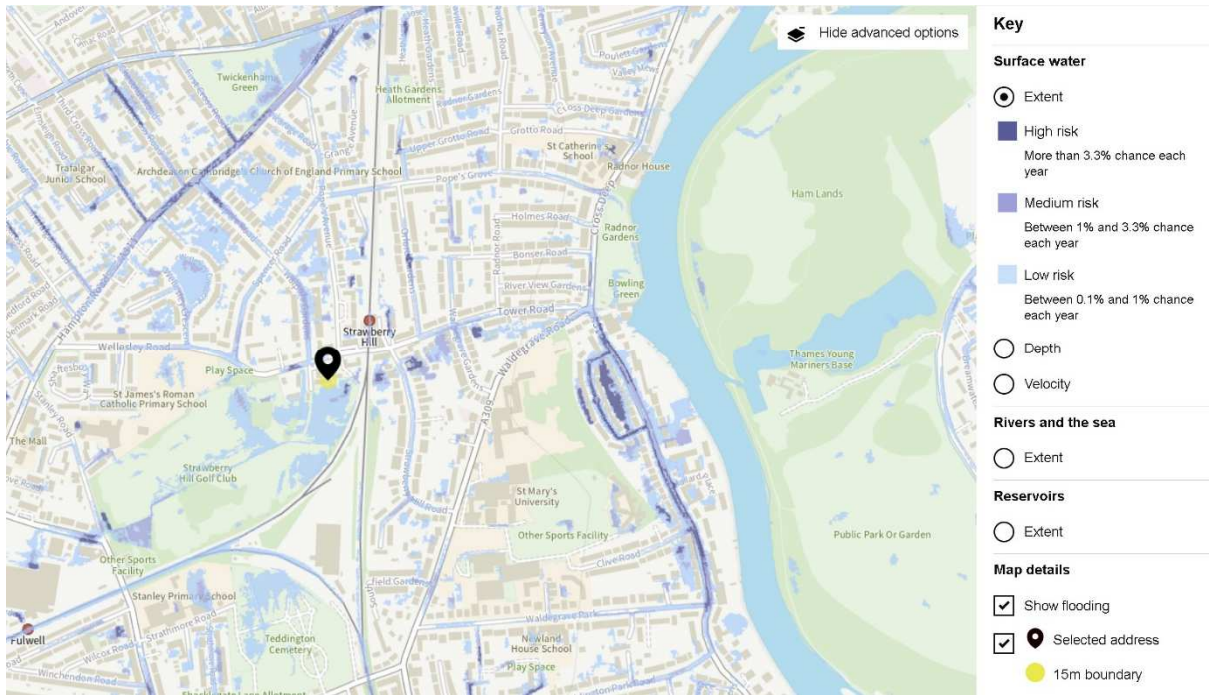
The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

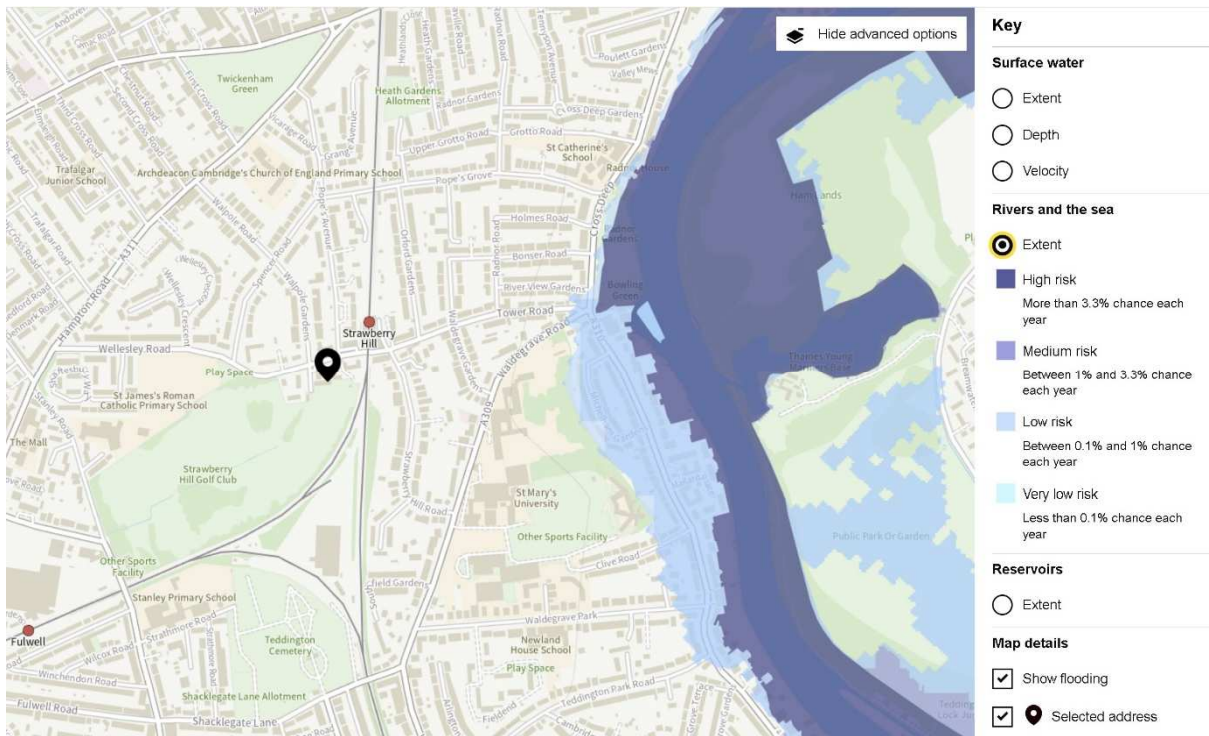


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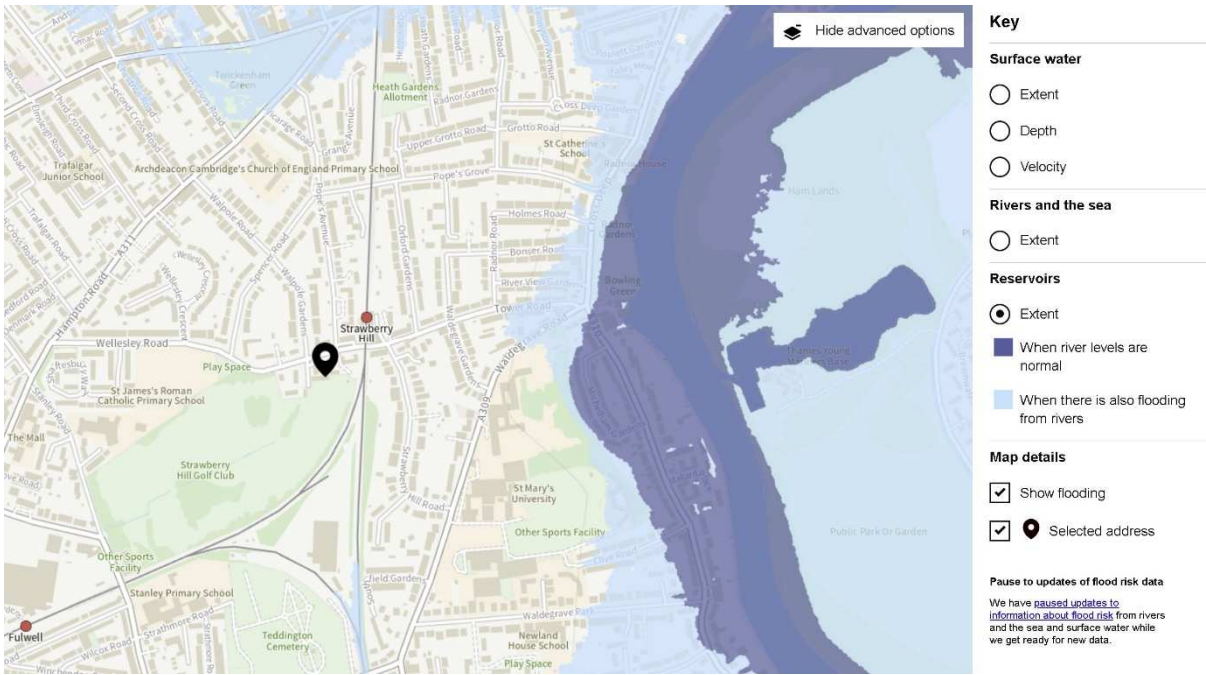
Flood Zone Map: Fig 4



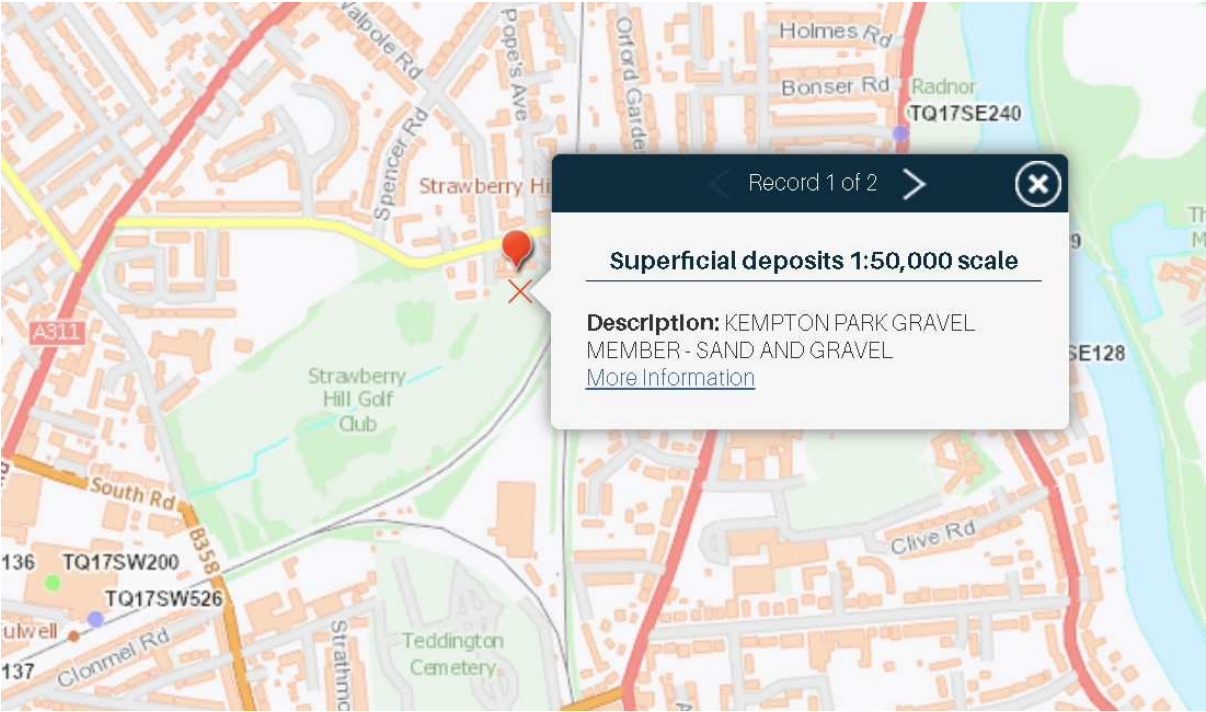
Surface Water Map: Fig 5



River and Sea Map: Fig 6



Reservoir Map: Fig 7



Geological Map: Fig 8

PROPOSED DRAINAGE STATEMENT

The mapping shows that beyond a low risk of surface water flooding, the area is not at risk of flooding.

The ground conditions are shown on the British Geological Survey Viewer (Fig 8) to be *Kempton Park Gravel Member – Sand and Gravel*, which is typical of the area. These are free draining Gravels. Any ground water can quickly pass through them.

Figure 3 above shows that a limited number of concrete bases will be formed in the ground. These are small enough and far enough away from each other to avoid any meaningful obstruction to the flow of ground water.

No impermeable layers are being placed over the ground as part of this development.

CONCLUSION

The proposed erection of a 'golf ball stop netting' will have no measurable impact on the drainage to the area.

The risk of flooding either before or after the installation is very low from surface water and if this did happen, the water would drain away quickly through the gravels that form the ground in the area.

This report was prepared by

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Martin Cooper, **Cooper Associates.**