London Borough of Richmond upon Thames,
Civic Centre,
44 York St,
Twickenham TW1 3BZ

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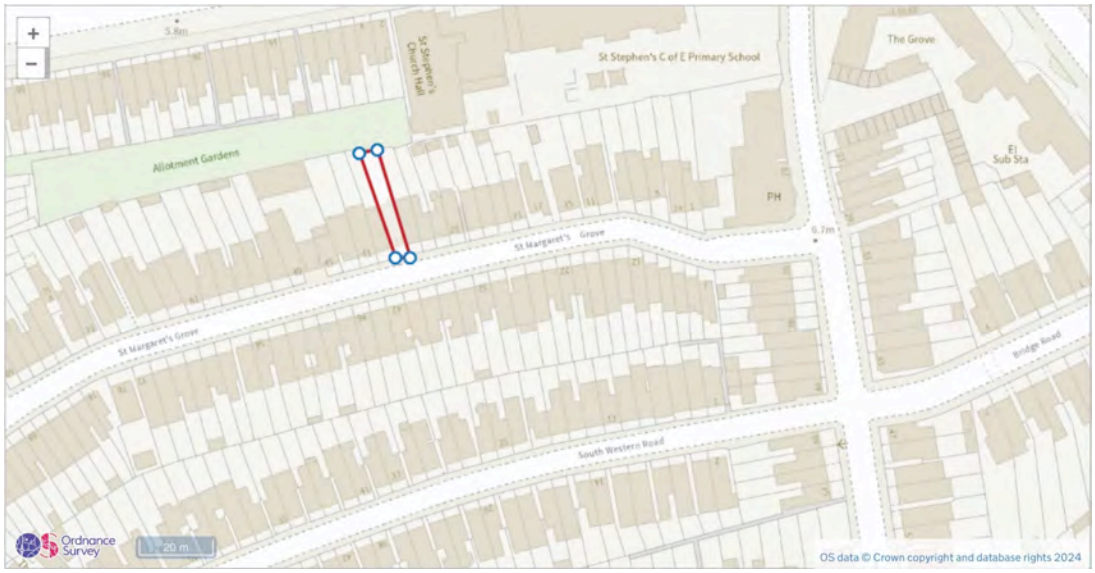
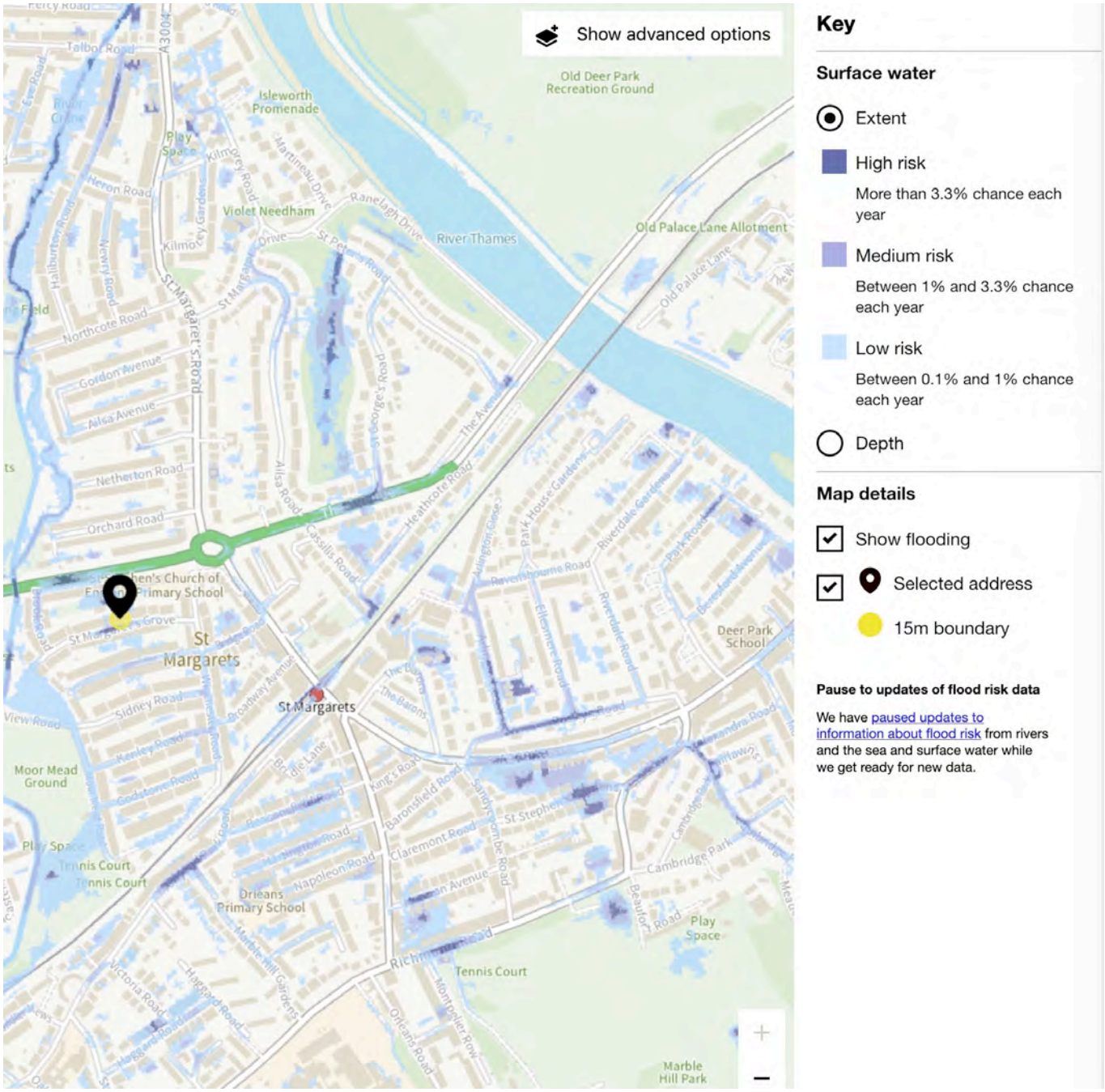
Flood Risk Assessment

The site is within a Flood Zone 2 within an area that is at risk of flooding from the River Thames, but which benefits from significant flood defences . This area covers a large swathe of London with flood protection provided by the Thames Barrier and other flood defences along the riverbanks. The River Thames is not expected to overtop these flood defence mechanisms, even in an extreme 1 in 1000 year event.
There is therefore a very low probability of a flooding event occurring to the property from the River Thames.

The Environment Agency reservoir flooding maps show that the site is also potentially at risk of flooding from three reservoirs within the River Thames catchment. However, the site is a considerable distance from any of the reservoirs. The reservoirs are national critical infrastructure and are actively managed to meet a high level of safety standards. This includes an ISO 9000 accredited reservoir surveillance management process and regular inspections to the requirements of the Reservoirs Act 1975. For these reasons, the risk of failure of these reservoirs with consequent impact on the application property is minimal.

Flooding can also potentially arise from heavy rainfall when surface water cannot be absorbed into the ground or enter drainage systems, and when ordinary smaller watercourses and drains cannot hold the volume of water flowing through them. Heavy rain may not be able to drain away causing “flash flooding” and groundwater may rise above surface levels and overflow onto surrounding land. The Environment Agency’s Flood Risk Map confirms that the property is a “high” risk of flooding from surface water. See below & attached.





Information surrounding potential methods to further reduce surface water run-off, such as through the incorporation of incorporate Sustainable Drainage Systems (SuDS), can be found below.

The SuDS Manual (2015), discusses the SuDS approach to managing surface water runoff which is intended to mimic the natural catchment process as closely as is possible. The approach sets out the design objectives in respect of SuDS:

- Use of surface water runoff as a resource;
- Manage rainwater close to where it falls (at source);
- Manage runoff on the surface (above ground);
- Allow rainwater to soak into the ground (infiltration);
- Promote evapotranspiration;
- Slow and store runoff to mimic natural runoff rates and volumes;

Flood Mitigation Measures:-

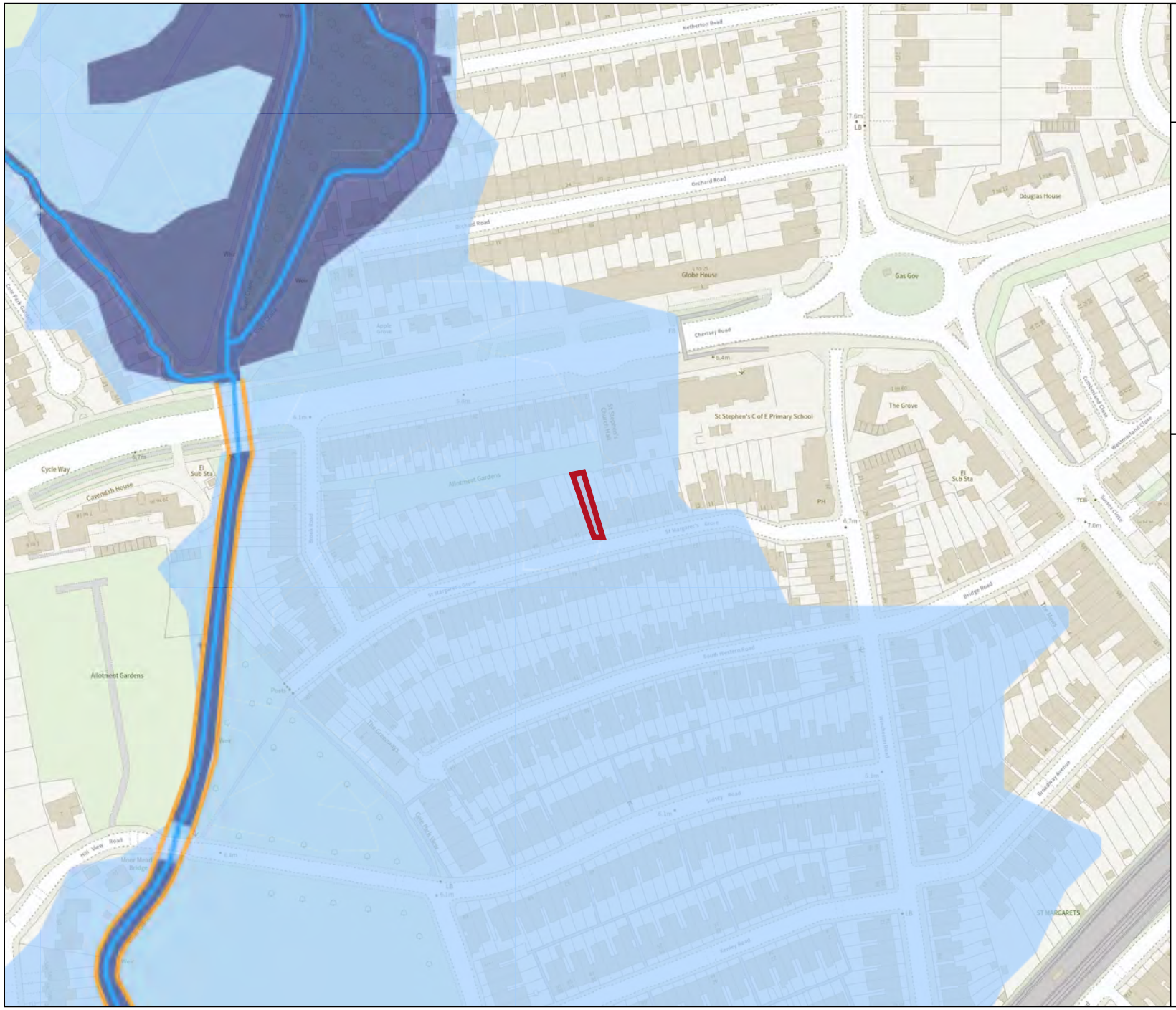
1.Components that capture rainwater and facilitate its use within the building or local environment. Components that facilitate the infiltration of water into the ground. These often include temporary storage zones to accommodate runoff volumes before slow release to the soil.

The garden is of sufficient size to facilitate a soak away for the rainwater from the rear of the house. A French drain will be used adjacent to the extension. The garden is grassed and the only hard surface is the patio at the back of the garden.

Other considerations not thought feasible in this instance:

- Components that convey flows to downstream storage systems (e.g. swales, watercourses).
- Storage Systems Components that control the flows and, where possible, volumes of runoff being discharged from the site, by storing water and releasing it slowly (attenuation). These systems may also provide further treatment of the runoff (e.g. ponds, wetlands, and detention basins).

2. The ground floor level will be set no lower than the existing level.
3. The floor construction is solid in-situ concrete with hydrophilic infill strips (Dualite or similar) at the interfaces with the existing slab and flanking walls. These provide an effective barrier to flood water penetration. Beneath the slab is a compacted hardcore with a damp proof membrane to the underside of the slab to break capillary action and seepage from the ground below.
4. The external wall build-up from outside to inside is made up of:
- London stock brickwork, providing a durable and weather-resistant shield against rain.
- a 30mm cavity with water-resistant timber sections to promote the flow of air to prevent damp and to allow water to drain away from the internal face of the wall build-up.
-a breather membrane to allow the wall to breathe and to avoid trapping the moisture within the wall, thus reducing the need for repair after the event of a flood.
-a vapour barrier
-horizontally-laid plasterboard
-water-resistant paint finish.
5. There are no services laid in the floor itself.
6. All fixings, such as wall ties and screws, are to be stainless steel, to resist corrosion.
7. Electrical sockets are set out at 450mm above the finished floor level in compliance with Part M.
8. The gas boiler will be set at high level and would not be affected in the event of a flood.
9. Where possible in the scope of works, non-return valves will be installed into the system to prevent the back-flow into the property.
The occupants will also be encouraged to subscribe to the Environment Agency's Flood Warning service https://www.gov.uk/sign-up-for-flood-warnings.



Environment Agency

Flood map for planning

Your reference
<Unspecified>

Location (easting/northing)
516502/174382

Scale
1:2500

Created
11 Jun 2024 16:47

- Selected area
- Flood zone 3
- Flood zone 2
- Flood zone 1
- Flood defence
- Main river
- Water storage area

0 20 40 60m