Flood Risk Assessment

30 Chase Gardens, Twickenham TW2 7PB
Garage Relocation

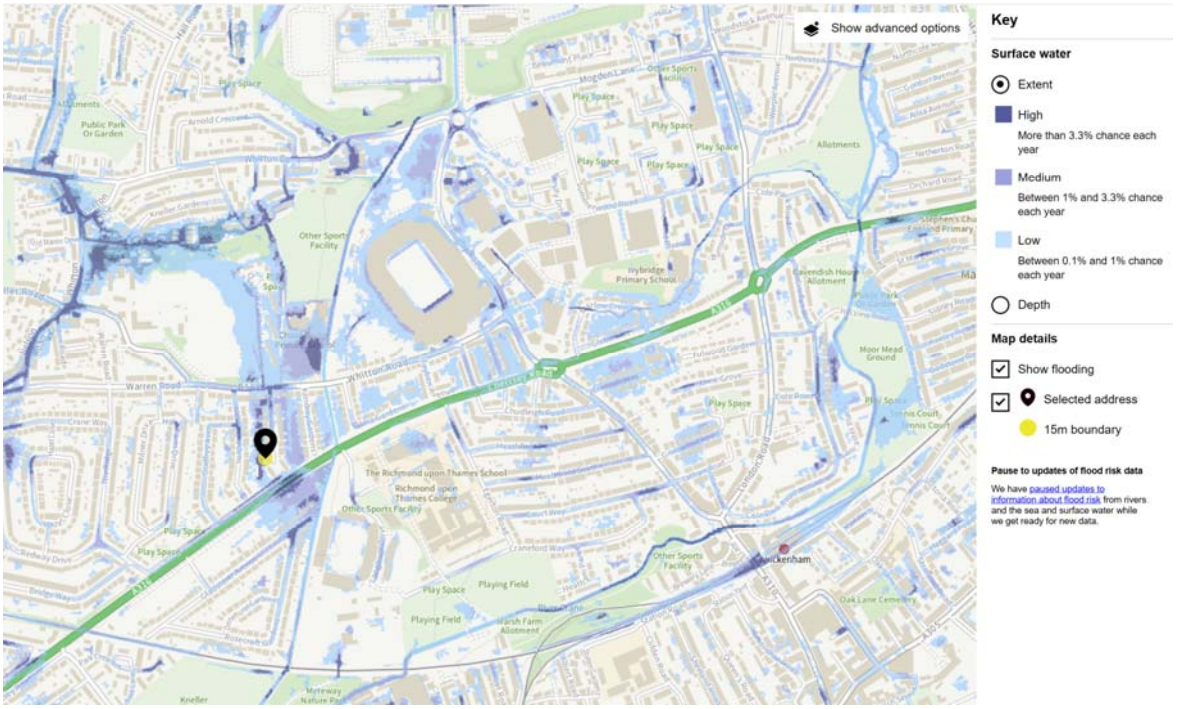
23 September 2024

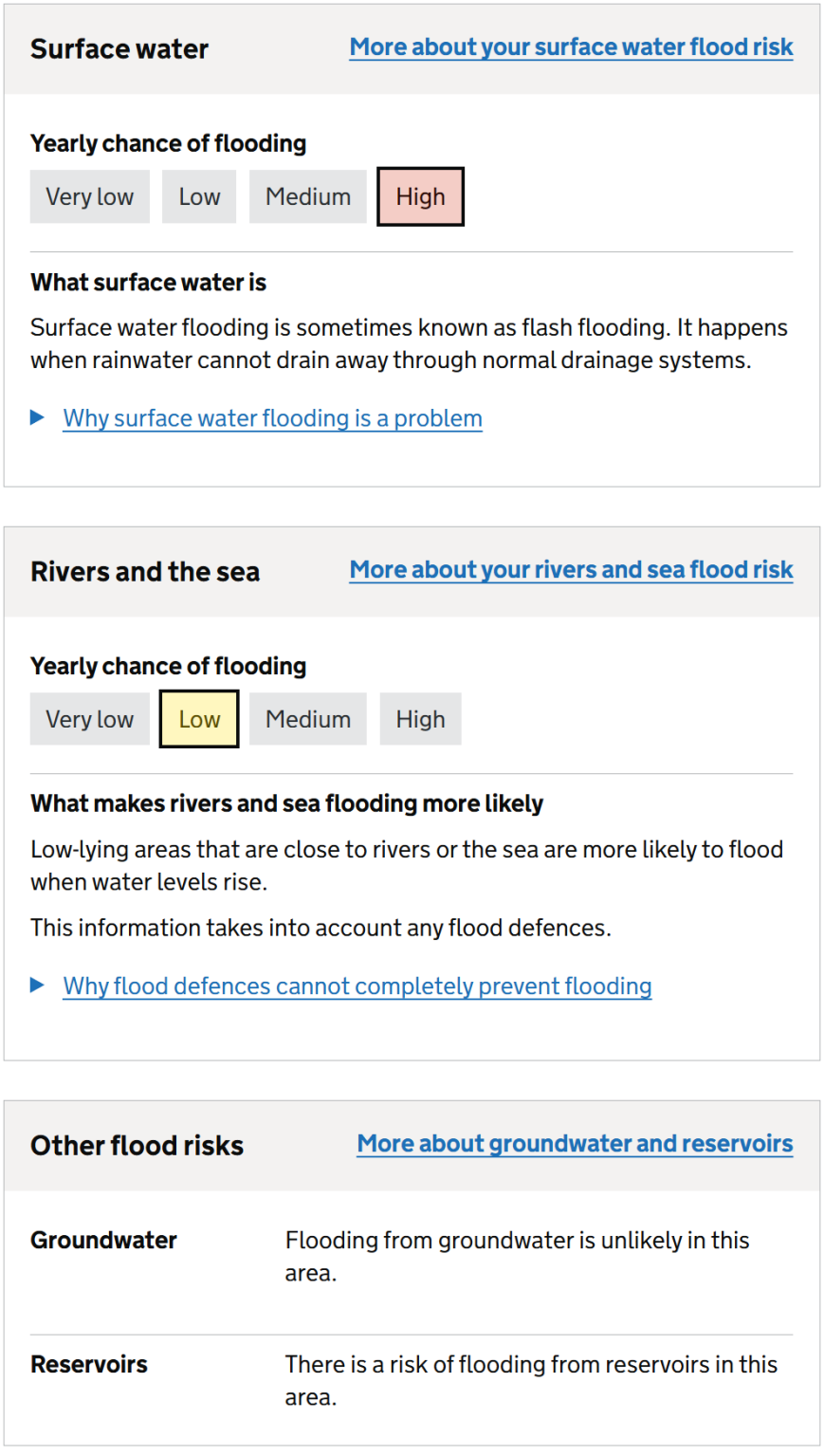
The Site

The application site is a semi-detached dwelling house with an existing rear garage, the proposal is to reposition the garage building to the far end of the rear garden. The site is positioned on the Western Side of Chase Gardens. The property is not listed and is not within a Conservation Area. Similar residential properties surround the site and similar projects are found in the local area.

1.0 Identify Risk

The highest risk of flooding at this location is from **surface water**.



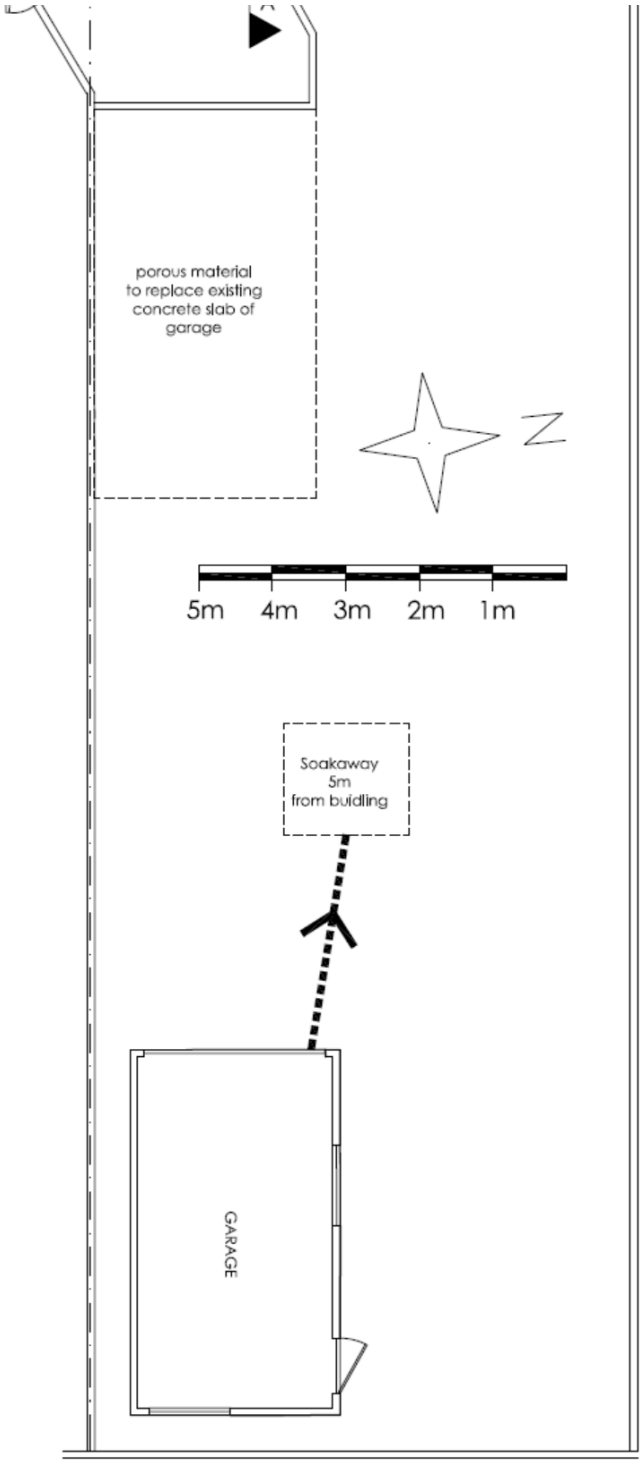


2.0 Implications of the proposal

- We acknowledge that all new structures will impact on where flood water will go, this could include the dispersing of flood water flows beyond the site boundaries.
- The greater the size of the building's footprint the greater the impact on flood flows.

3.0 Mitigation Measures

- Rain water collected from the roof of the garage will be directed to a soakaway in the rear garden subject to soil infiltration tests.
- New external hard surface areas will have porous paving.



4.0 Resistance and Resilience Measures

We confirm that all floor levels within proposed will be set no lower than the existing levels.

The construction will be completed in accordance with the document '*Improving the Flood Performance of New dwellings*'.

The internal ground floor level of the extension will be extended through at the same level as existing building and above the surrounding ground level. The proposed details for the external walls, internal walls, ground floors and building services and fitting will be incorporated as appropriate when detailed construction design has been completed.

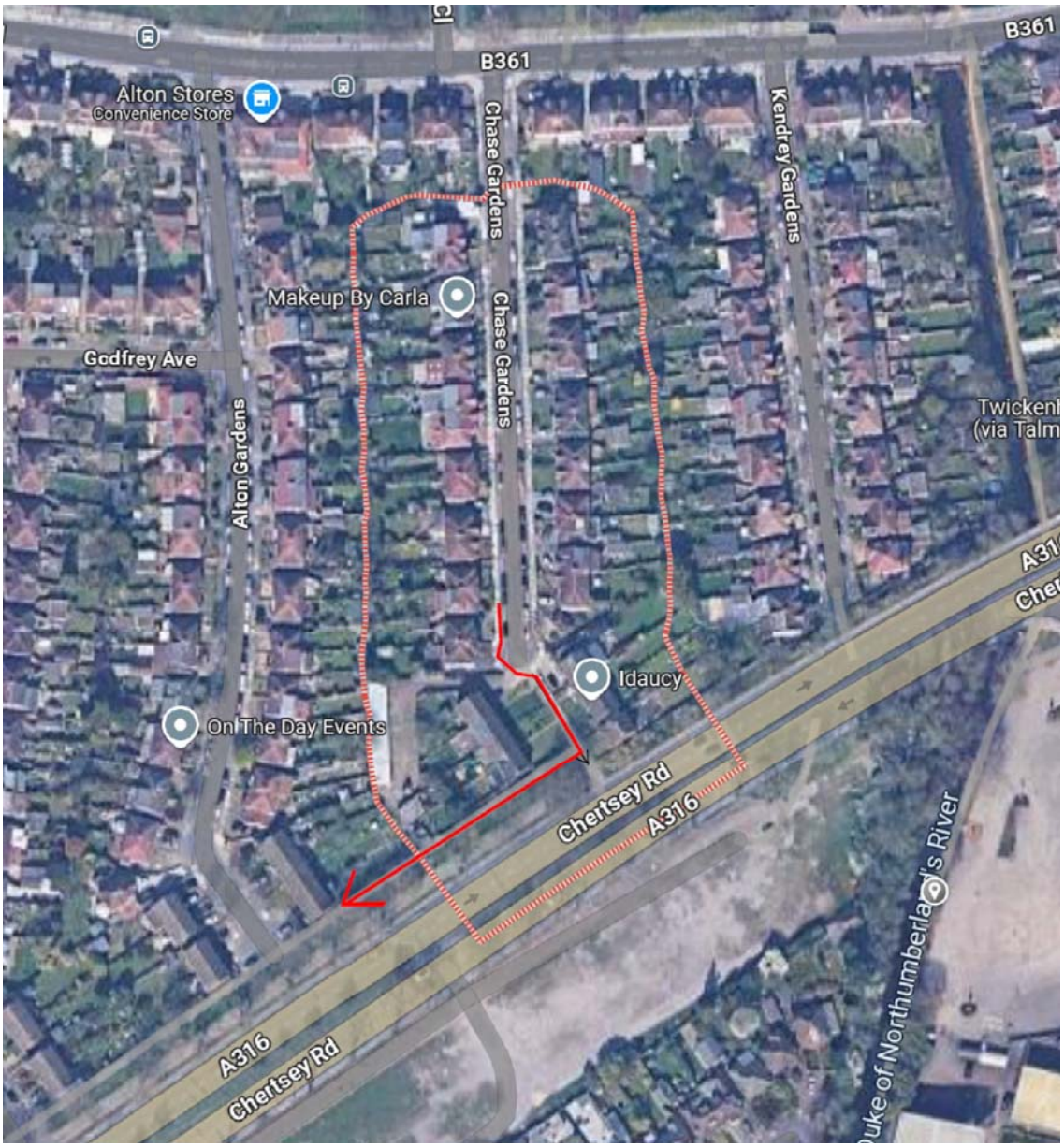
The flood resilience and resistance techniques are as follows:

- Ground floor slab will be ground bearing concrete slab with closed cell insulation and 1200 gauge DPM.
- No external vents or air bricks will be used below a height of 600mm
- Closed cell type insulation will be used for cavity fill, if insulated
- No under floor ferrous pipe work will be used for building services, and all penetrations sealed.
- All electric fixtures and fittings will be set above 450mm level.
- External doors are provided with good quality seal and double glazing which should be able to resist flood waters.

5.0 Personal Flood Plan

- The occupants would sign up to the EA early warning system and in a flood event turn off electricity and put out sandbags.
- Below is a simple map showing how the occupants can reach a safer locality in a flood event

Evacuation Route from Flood Zone 3 to Flood Zone 1



The occupant will complete a personal flood plan template produced by the Government can be found at:
https://www.gov.uk/government/publications/personal-flood-plan and let the Environment Agency know when they've completed the flood plan by calling Floodline on 0345 988 1188.

5.0 6. Managing Surface Water Runoff

All developments should not result in an increase in surface water runoff, and where possible, should demonstrate an improvement in terms of rates and volumes of surface water runoff. Sustainable Drainage Systems (SuDS) should be used to reduce and manage surface water run-off to and from proposed developments as near to source as possible.

Generally the aim should be to discharge surface water run-off as high up the following hierarchy of drainage options as reasonably practicable and subject to suitability:
1. Into the ground (infiltration)
2. To a surface water body
3. To a surface water sewer, highway drain, or another drainage system
4. To a combined sewer

SuDS techniques can be used to reduce the rate and volume and improve the water quality of surface water discharges from sites to the receiving environment (i.e. natural watercourse or public sewer etc.). The SuDS Manual24 identified several processes that can be used to manage and control runoff from developed areas. Each option can provide opportunities for storm water control, flood risk management, water conservation and groundwater recharge.

· **Infiltration:** the soaking of water into the ground. This is the most desirable solution as it mimics the natural hydrological process. Where groundwater sources are vulnerable or there is risk of contamination, infiltration techniques are not suitable.

· **Detention/Attenuation:** the slowing down of surface flows before their transfer downstream, usually achieved by creating a storage volume and a constrained outlet.

· **Conveyance**: the transfer of surface runoff from one place to another, e.g. through open channels, pipes and trenches.

· **Water Harvesting:** the direct capture and use of runoff on site, e.g. for domestic use (flushing toilets) or irrigation of urban landscapes. The ability of these systems to perform a flood risk management function will be dependent on their scale, and whether there will be a suitable amount of storage always available in the event of a flood.

See diagram in Section 3 showing location of Soakaway in rear garden collecting rainwater from proposed extension.