Significant lengths of the main tunnel are located beneath the River Thames, where there are no buildings and a limited amount of infrastructure. Where the tunnel alignment does run underneath buildings, the risk of any adverse effects from our works is expected to be low.

The use of modern tunnelling methods and the depth of our tunnels, which are generally much deeper than most other tunnels in London, minimises the likelihood of any potential ground movement.

Settlement of the ground
For this project, settlement is a term used to describe how the ground can move due to the construction of new infrastructure below the surface.

The construction of the shafts, tunnels and combined sewer overflow (CSO) interception works for the Thames Tunnel project will cause some small movements in the ground.

The extent of the ground movements caused by construction will depend on a number of factors, including the size and depth of the construction works, as well as the existing soil conditions.

Our knowledge of the effects on the ground tunnelling of tunnelling includes recent information from major tunnelling projects in London, including the Jubilee Line Extension and the Channel Tunnel Rail Link.

These projects have established proven methods to assess the impact of these ground movements on infrastructure and buildings.
Protection against the effects of settlement

To control and limit ground movement we will:

- align the proposed tunnels to reduce the number of affected properties
- use the latest tunnelling methods and equipment
- assess the potential effects of ground movement in advance and, where necessary, carry out protective measures
- monitor actual ground movement during and after tunnelling to check that the ground is reacting as predicted

Where required, we will also monitor the structure of individual buildings.

We will calculate the predicted level of settlement that may occur due to our tunnelling works. Following this, we will carry out assessments to determine how ground movement caused by the tunnelling works may impact buildings.

We will identify buildings which we consider need any protective measures, so that these can be implemented prior to the start of any relevant construction work in the area. We will also identify any individual buildings that may need to be monitored.

The method used for assessing settlement will be similar to that used for the Channel Tunnel Rail Link, the Jubilee Line extension, and Crossrail.

Before we undertake construction works, we will carry out a defects survey on buildings located over, or close to, our tunnels and worksites where we consider this to be required.

The survey will be undertaken by a qualified, independent surveyor and will involve a visual inspection, including internal and external photographs of the building.

A ‘record of condition’ will be produced and will be available to the property owner in hardcopy or electronic version. This document will provide a reliable record of the existing condition of the building, before relevant construction works start in the area.

If damage does occur, we will commission a second survey and compare the results to determine the cause and extent of any damage.

A more detailed structural survey may be carried out for any buildings that are more at risk, due to factors such as age or condition, as part of our assessment works to determine additional protective measures that may be needed.

All surveys and any subsequent protective works that may be required will be carried out at our expense.

Repairs

If the construction of our works causes settlement that damages a building, this will be repaired. The repairs will be organised and undertaken by us. Alternatively the property owner may claim the cost of repair, provided that these costs are agreed with us beforehand.

Listed buildings

Some buildings are listed because of their special architectural or historic interest. Assessments for listed buildings will take account of sensitive features or any aspects with a heritage value to ensure they are protected.

We will assess listed buildings in conjunction with heritage specialists.

A Listed Building Consent will be required for implementing any necessary protective measures for listed buildings, and these protective works will be carried out prior to any construction works within the vicinity. Where required, monitoring of the structure may also require a Listed Building Consent.

For further information see our website: www.thamestunnelconsultation.co.uk or call us on 0800 0721 086.

Phase two consultation (Autumn 2011)