



CS/S2059

Anthony Swaine Architecture Ltd.
The Bastion Tower
16 Pound Lane
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13th of October 2022

RE: PROPOSED BASEMENT STRUCTURES - BOWER COTTAGE, SOLE STREET, GRAVESEND, KENT, DA12 3AX

ABP have been approached by Anthony Swaine Architecture LTD to provide engineering design and details for proposed alterations and extensions to Bower Cottage. This brief report highlights the proposals with respect to the basement elements only in order to discharge a planning condition.

To summarise, the basic proposal is to convert an existing cellar basement within the footprint of the existing building along with construction of a new extension to this existing cellar from outside the building footprint in order to achieve suitable access to the existing cellar.

To achieve these proposals, ABP propose to underpin the entire Northeast facing external wall down to the proposed excavated basement depth from the Southeast side along to where the basement structure terminates. The remaining length of wall is to be underpinned but stepped upwards to a standard 1m depth at the North side corner. This stabilises the main external wall to then allow excavation works to be carried out more safely, because the existing foundations will not be undermined during the excavation process when constructing the basement extension.

The underpinning works will also provide a sufficient stabilising mass to both the existing and proposed basements with respect to sliding due to applied active forces from the retained ground. The underpins adjacent to the proposed basement are to have an extended 400mm long toe at the base, with steel dowel bars placed in order to tie this thickened underpin base to the proposed basement floor slab. There will also be a missed underpin to allow for the proposed opening into the existing cellar, steel supports will be installed above the missed pin to support the existing external wall over along with precast concrete lintels for the proposed opening through the existing cellar masonry wall.

Cont'd

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Carrying out these underpins ensures there is no additional surcharge onto the existing and proposed basement structures as the existing cellar basement walls do not line up with the existing external walls above ground level.

The proposed basement extension consists of a 250mm Thick RC slab which will tie into the underpins as previously stated, along with construction of a reinforced 325mm thick Stepoc retaining wall. The Stepoc wall will be tied into the base slab with use of steel reinforcement. A 325mm thick Stepoc wall has been selected to allow construction of a 300mm wide new external cavity wall for the proposed two-storey extension above. The excavation and construction of the proposed basement extensions is to be temporarily propped in accordance with the relevant specialist's design.

It is then proposed to underpin the existing solid masonry cellar walls around the perimeter of the existing cellar to the depth of the proposed basement slab excavation. This is also to omit to the risk of undermining the existing walls and causing failure due to instability. These underpins will have steel dowel bars fitted which will then key centrally into the proposed RC ground bearing slab.

Once this is completed, the existing exposed earth wall to the cellar is to be cleared of any loose material and a 100mm masonry brickwork wall constructed 125mm in front of it, which will remain as an internal facing brick wall to comply with the relevant planning condition. The 125mm void behind the inner brick wall will then be mass filled with concrete (with mesh having been placed centrally to this void prior to constructing the 100mm thick brick wall internally to this which acts as a shutter to the inner face).

These proposals ensure that existing loads are controlled and directed at depth to allow for safer construction and to ensure the existing building is not put at risk by the works.

Yours Sincerely,



CHARLES SILLETT
FOR ALAN BAXTER PARTNERSHIP LLP