The Wilkinson Partnership

Forensic Geotechnical & Structural Engineers

Assessment of Boundary Retaining Wall

at

The Town Forge, Malmesbury, SN16 9AT

for

Mr Andrew Poynton



Ref: POY/0214/jw/001.1

19th January 2022

Contents:

		Page
1.	Introduction	3
2.	Ground Condition	4
3.	Observations	5
4.	Discussion	6
5.	Conclusions	6

1. Introduction

Scope: This report is intended give an appraisal of the structural condition of the southern boundary retaining wall and its suitability for the proposed development of the car park as described in Planning Application 21/00372/FUL.

Brief Description: The retaining wall forms the boundary between the parking area of The Town Forge and the rear courtyard of No 84 High Street.

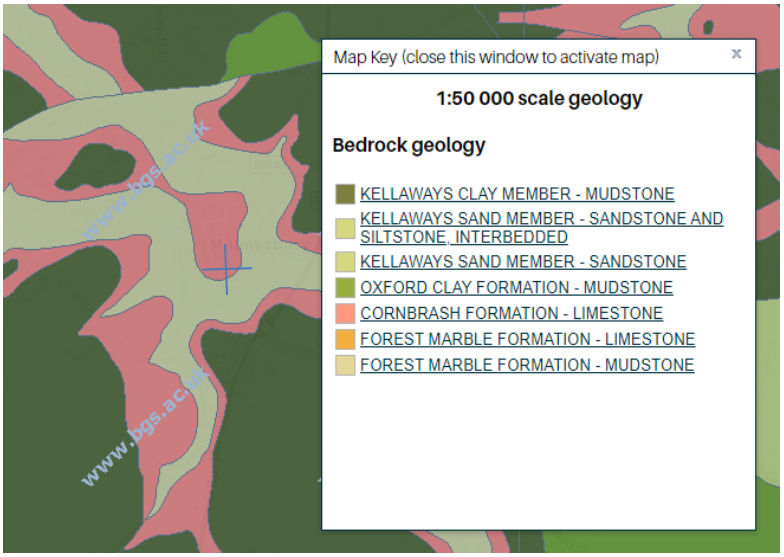
The general topography has a significant slope from north to south and this retaining wall, along with many others in the vicinity, will have been constructed to form 'cut and fill' terraces in the slope suitable for the construction of buildings.

The wall is constructed of stone with mortar joints. The thickness of the wall is unknown. The age of the wall is unknown.

Date of inspection: 17th December 2021

2. Ground Conditions

British Geological Survey data shows that the bedrock soil conditions in the area are LIMESTONE and there are no overlying superficial deposits recorded.



BedrocK

The LIMESTONE is a highly competent material and suitable for all types of foundation.

3. Observations

When viewed from the rear courtyard of No 84 High Street the wall appears in very good condition.

The height of the wall varies from 4.2m at its western end down to 3.3m at the eastern end where it abuts an adjoining property.

The front face of the wall has been built to a slope of approx. 8°.

There is no sign of any movement or misalignment nor any evidence of past repairs to the wall. Neither is there any cracking or other evidence of movement at the top of the wall.

The mortar joints are in good condition.

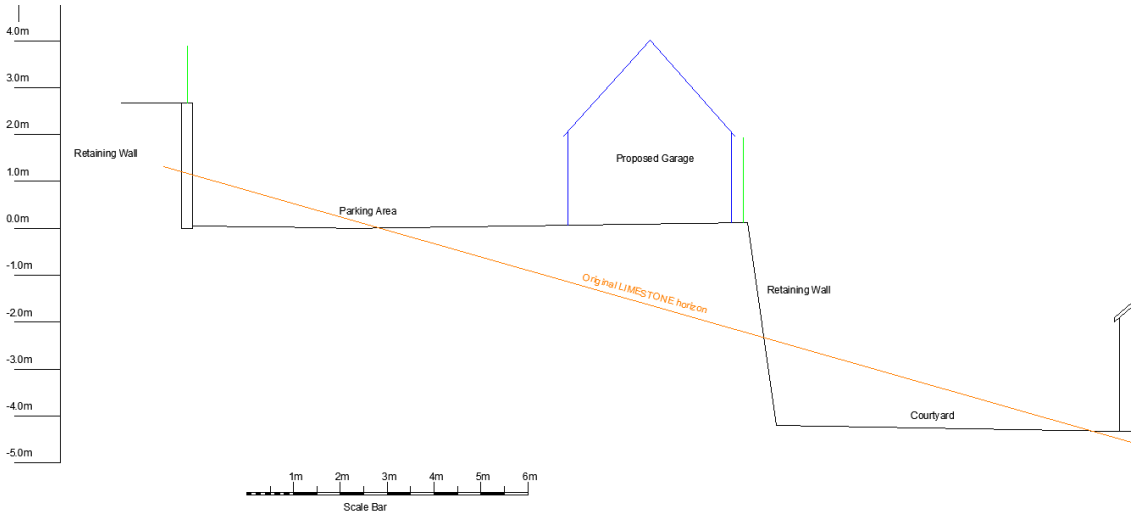


Face of Retaining Wall



Slope to Front Face and Concrete Band

There is also a 100mm high horizontal band of concrete approx. halfway up the wall face. This will represt the demarcation between the lower part of the wall which is facing the intact rock profile and the upper part of the wall which will be retaining the fill material (most likely crushed rock) used to create the terraces in the slope.



North – South Section

4. Discussion

This retaining wall is in excellent condition and has clearly performed well over is lifetime. It has for many years successfully supported the parking area to the Town Forge and previously a telephone exchange which has been used not only for passenger cars but also mid-sized commercial vehicles.

With regard to the wall's capacity to support the surcharge of the proposed building is not possible, without a detailed investigation to establish the thickness of the construction and the precise nature of the backfill, to establish the full capacity of this wall by calculation.

However, it can be said with a high degree of certainty the wall can support a traffic load, which in this situation would equate to a uniform characteristic surcharge of 7.5 kPa, over the parking area.

The proposed new garage/workshop is intended to be of timber construction with a clay tiled roof.

The new loading on the retaining wall would then be:

Loading	**Value kPa**
Domestic Garage floor live load	2.5
Roof - live	0.6
Roof - dead	0.5
Timber superstructure	0.1
TOTAL	**3.7 kPa**

Assuming that the floor level is maintained at the current tarmac level then no additional dead load will result from the floor slab.

5. Conclusions

From my investigation and observations, I can confirm that in my Professional opinion in respect of this structure is as follows:

A. The wall is in excellent condition and is performing well.
B. The proposed new garage and workshop will reduce the loading on this wall, effectively by excluding commercial vehicles from its footprint.
C. The garage/workshop proposal presents no threat to the integrity of the retaining wall and there are no structural or geotechnical reasons why the proposal should not be allowed to proceed.

John Wilkinson B.Sc., C.Eng., MICE
Tel: 07836 506578
Email: john@wilkinson-partnership.com
Web: http://www.wilkinson-partnership.co.uk