MARSH DESIGN LIMITED

STRUCTURAL DESIGN CONSULTANTS & SURVEY REPORTS

51, Trinity Street
Huddersfield
HD1 4DN

Company No: 457 2796
01484 - 341426

20 December 2023
Our Ref: MDL – 9625

Mr. Francis Plant
100, Bedale Drive
Skelmanthorpe
Huddersfield
HD8 9EU

Dear Francis

Inspection of Trial Hole Excavations for Foundations
100, Bedale Drive, Skelmanthorpe, Huddersfield

Further to your recent instructions, an inspection of the trial holes excavated to expose the foundations at your property has now been undertaken.

Trial holes were undertaken to expose the depth and thickness of the existing foundations at three corners of the property: front left, rear left and rear right hand corners.

<u>Trial Hole 1 – Front Left Corner</u>

Depth to Top of Foundation	=	350mm
Thickness of Concrete	=	150mm
Projection of Foundation	=	200mm
Substrata	=	Clay

Trial Hole 2 – Rear Left Corner

Depth to Top of Foundation	=	100mm
Thickness of Concrete	=	150mm
Projection of Foundation	=	170mm
Substrata	=	Clay

Trial Hole 3 – Rear Right Corner

Depth to Top of Foundation	=	700mm
Thickness of Concrete	=	120mm
Projection of Foundation	=	100mm
Substrata	=	Clay

In each of the trial holes, the underlying ground conditions were confirmed to be of a clay nature, with an assumed minimum ground bearing pressure of at least 100 kN/m^2.

Inspection of Existing Structure

An inspection of the external walls of the existing bungalow dwelling was undertaken, and no evidence of structural movement cracking, defect or distress was noted to the main structural fabric of the building, thus confirming the adequacy and bearing capacity of the underlying substrata.

Foundation Loading Calculations

It is intended to build a first floor extension above the existing bungalow thus imposing additional loads onto the foundation.

Allowing for a traditional masonry cavity wall construction, our calculations have confirmed that the existing foundations are structurally adequate to o sustain the proposed increased loads upon them.

Summary & Conclusions

It is our opinion that the existing foundations and the underlying clay substrata conditions are adequate to support an increased loading from the proposed first floor extensions to the existing bungalow dwelling.

Architectural layouts and construction methods are yet to be finalised, however, our foundation check calculations have confirmed that the existing foundations can support a traditional masonry cavity wall construction if this is to be the preferred method of construction for the proposed first floor extensions.

Yours faithfully,

D. Haigh B. Eng (Hons)
Director
For and on behalf of
MARSH DESIGN LIMITED

MarshDesignLtd STRUCTURAL ENGINEERS www.marshdesign.co.uk	Project: 100, Bedale Drive, Skelmanthorpe				Job No.: 9625	
	Calcs for: Check on Existing Foundations for Increased Load				Start page no./Revision: FND 1	
	Calcs by: DSH	Calcs Date: 20/12/2023	Checked by:	Checked Date:	Approved by:	Approved Date:

New strip footing foundation required for Gable Elevation of Proposed Extended Bungalow.
Based upon existing foundations minimum 500mm wide & 120mm deep.

For preliminary design assume sub-strata with a minimum allowable GBP = 100 kN/m².

Loads

Roof	=	1/2 x 4.0m x 2.3 kN/m²	=	4.6 kN/m
Wall	=	5.0m x 4.6 kN/m²	=	23.0 kN/m
G. Floor	=	1/2 x 2.0m x 7.6 kN/m²	=	7.6 kN/m
Upper Floors	=	1 x 1/2 x 4.0m x 2.0 kN/m²	=	4.0 kN/m
Footing	=	0.5 x 0.12 x 23.6 kN/m³	=	1.4 kN/m
Surcharge	=	1.0 x 2.5 kN/m²	=	2.5 kN/m
		Total	=	43.1 kN/m

500 x 120 Strip Footings

$$GBP = \frac{43.1}{0.50} = 86.2 \text{ kN/m}^2 < 100 \text{ kN/m}^2$$

SATISFACTORY