

Shipton Parish Council

Phone Box Triangle "The Land" (wall repair)

Brief to Structural Engineer (with appendix photos)

1) BACKGROUND:

- i) Shipton Parish Council own a small triangle of land of approximately 180 m² situated at the Kilham Lane/high street road junction.
- ii) The land is in the village conservation area.
- iii) The land is surrounded on all three sides by highways owned and controlled tarmac roads
- iv) The Highways roads and verge abut directly onto the land & its boundaries.
- v) Dry stone Cotswold walls are on 2 sides (Kilham Lane & The Slip Road)
- vi) The Cotswold stone walls average circa 1.5 meters in height.
- vii) The Cotswold stone walls operate as retaining walls for many tons of soil, that were back filled to enable the land to create a flat surface next to the high street to enable it to house various utilities:
 - Telephone box with electrical supply - still in use as a defibrillator station.
 - BT Broad fibre broad band station current and in use.
 - Electric company wooden power pole currently in use
 - Bus stop sign (redundant, but should remain)
 - Parish council notice board (redundant and not wanted)
 - Park bench, (collapsed rotten and not wanted)
- viii) There is a large old & possibly dying tree situated on the land at the corner of the Kilham Lane & slip road, which is unneeded and whose root structure is far too close to the wall and should be removed as part of any re-build initiative.
- ix) The Cotswold stone walls have several plants such as ivy and elderflower growing from the wall structure.
- x) Much of the stonework on the slip road side has been badly affected by damp and old age and plant roots and has delaminated and is crumbling and in some places has already collapsed.
- xi) The Glos Highways & Infra structure department made a prelim survey on the 25th October 2023 by Atkins which caused them to officially close the slip road, deeming it to be dangerous from a possibility of collapse, Highways shared this survey with the Parish Council on the 5th Jan 2024.
- xii) Highways recommendations are listed below including some safety fencing to prevent falls.

2) Summary of The Highways prelim ATKINS report states

"The retaining wall was generally in very poor condition with extensive cracking, particularly along the south wall which is a symptom of freeze-thaw weathering. This has likely been caused by damp conditions due to shading from the adjacent house. The east end of the south wall had partially collapsed with significant masonry loss, resulting in a road closure. The west wall exhibited similar cracking of the dry stones although to a lesser extent. There was significant vegetation obscuring the wall and small trees beginning to grow from the base and on top of the wall"

The recommendations for this wall are as follows:

Given the extensive degradation of the retaining wall and that a section has already partially collapsed, it is recommended that the entire wall is rebuilt, and a routine inspection programme implemented in the future. It is likely that the ivy is aiding the structural integrity of the wall, and it should therefore be removed with caution. The stones used to construct the new wall should be

tougher and less susceptible to damp conditions and freeze-thaw damage. To prevent a fall from height, a timber fence should be installed along the top of the wall.

3) Next steps are for the Parish Council are for it to brief a Structural Engineering practice to prepare remedial proposals to meet CDM (construction design management regulations, and which would also include project management, and its associated responsibilities)

The Parish recognise that although "The Land" is small in size its proximity to the roads & utilities and the sloping nature of the geography means that it is vital that the project is well specified meets all legal and planning requirements (of which there are likely to be several) and is then placed into the hands of an insured and practicing structural engineer practice to manage and deliver the project.

The process will require a design certificate from the designer/project manager which can be used initially as a sign off with Highways and then as a final project completion sign off.

As part of the process the Parish will expect the designer/ project managers to confirm whether the project also requires a Check Certificate or whether its small size and height exempts it.

The attached photos and measurements are for rough reference only and it is expected that the Structural Engineer will compile their proposal from their own detailed site visits.

4) Success Criteria & Considerations.

- i) The completed work should provide a secure triangle of land capable of housing the existing utilities, uninterrupted in their usage and blending appropriately into the village architecture.
- ii) The supporting concrete retaining walls and the outer facing Cotswold Stone walling should be robust enough to last for the next 100 years. (which means that very little of the existing Cotswold stones, if any, which have already been weathered for at least 50 years could be re-used, coupled to the fact that mixing old and new Cotswold stones together creates an unsightly patchwork.)
- iii) We are talking about the removal and re-build of the current Cotswold walling.
To retain correctly the amount of soil that supports the triangle "Land" it is obvious that some form of modern concrete prefabricated/ precast building materials with appropriate foundations & drainage will be required as the key part of the structure. The Cotswold stone outer face will be purely decorative.
- iv) As advised in the Highways survey (2) a safety fence will be required on top of the wall .
- v) As part of the project utilities exploration questions will need to be completed with utilities to understand clearly about any subterranean pipes or cables. (NB: replies can take several weeks) Also the ground needs to be scanned for any undocumented pipes etc: before digging.
- vi) Correct drainage is vital for the long term survival of the wall, and there are no obvious drains to connect to now, although the tarmac roads do run down hill to the nearby river and ford.
A Utilities liaison plan with Highways and Environment will be required before construction, to produce and incorporate a clear drainage plan.
- vii) Cotswold stone walls that use curved bends like the current one are notorious for being key structural failure points, and we would be happy to consider a 90 degree corner.
- viii) Joining two entirely different types of stone together (concrete and Cotswold stone) will require the incorporation of expansion joints, to manage the thermal load and the stone differentials.

- ix) The "Land" is situated in the village conservation area so appropriate planning permissions and advice from concerned agencies will be required.
- x) The old tree, will almost certainly be required to be professionally removed, and will require appropriate felling licences, its stump and roots could well provide a problem to the construction team, and it is probably going to be necessary to bore out the stump and main root system ,prior to construction commencing, which professional tree surgeons can normally undertake.
- xi) The proposal would need the designer to identify construction phases to ensure that the stability of the slope is not compromised during the excavation of soil during the temporary stage of construction.
- xii) We would wish to see as part of the design brief guides and estimates of likely costs for the wall per m² and some rough time estimates.

5) In summary list of deliverables:

1. Utilities search and liaison
2. Liaison with Environmental Agency and Gloucester County Council & Cotswold planning
3. Preliminary design for the retaining wall, fence and cost estimate
4. Detail design for the retaining wall and the designer risk assessment
5. The Principal Designer role as required under the CDM Regulations
6. Management of the Construction Phase of the works

5) Photo appendices:

Appendix 1 - pics 1-> 3 Slip road side

Appendix 2 - pics 4 -> 6 Kilham Road side

Appendix 3 - Pics 7 -> 10 utilities on the Land (1)

Appendix 4 - Pics 11 -> 13 utilities on the Land (2)

APPENDIX 1 -Slip Road side



Photo 1



Photo 2



photo 3

APENDIX 2- Kilham Lane side



photo 4



photo 5



photo 6

APPENDIX 3: The land surface & Utilities (1)

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APPENDIX 4: The land surface & Utilities (2)

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