

Dear Mr Malloy,

Following my survey of the existing masonry wall at Thehovels, Tarbock Hall Lodge on 19/04/2021, please find below my observations of the walls' current condition and recommendations.

**Observations:**

**Section A (West Gable Wall):**

- The wall retains approximately 500mm of earth to the West side.
- A tree stump is present directly behind the wall on the West side (see Figure 14) and is still living.
- There is evidence of tree branches growing through the bed joints as well as other vegetation (see Figures 5 & 8).
- The wall is leaning to the West by approximately 2.5° (see Figures 5 & 6).
- The wall is bowing, likely due to the outer leaf separating from the inner leaf towards the top of the gable (see Figures 5, 6 & 9).
- Many of the bricks have spalled and the pointing is almost non-existent in some locations (see Figures 10 & 11).
- A number of bricks appear to have fallen from the wall over time (see Figure 7).
- The infill to the South of this wall is leaning to the East and does not appear stable (see Figures 12 & 13). This infill is not part of the original construction and should be demolished at the earliest opportunity.

**Section B (North Wall – West half):**

- The wall retains up to 750mm of earth to the North side.
- Two large tree stumps are present directly behind the wall on the North side (see Figure 15) and appear to still be living.
- Generally, the wall is leaning to the North by approximately 1.0° (see Figure 18). However, measurements of the most Westerly brick pier on the South face of the wall indicated that it was leaning to the South by approximately 1.5° (see Figure 17). The cause of this irregularity could not be identified.
- The two Westerly brick piers are bowing (see Figures 16 & 17).
- A section of the wall has previously been infilled with brickwork that is clearly not part of the original construction (see Figure 19).
- Many of the bricks have spalled and the pointing is almost non-existent in some locations (see Figure 19).
- The West Gable has largely detached from the North wall due to its movement and the presence of tree branches growing through the bed joints (see Figure 5).

**Section C (North Wall – East half):**

- The wall retains approximately 600mm of earth to the North side, although this increases to approximately 800mm at the Easterly end due to the step down in level on the South side.
- A number of mature trees are growing directly behind the wall (see Figures 2, 3 & 20-25), with the roots of some abutting the wall (see Figures 24 & 25).
- Generally, the wall is leaning to the South as can be clearly seen by a purely visual inspection (see Figures 26 & 27). Measurements at the piers showed the piers leaning to the South by up to 3.5°. This is most likely due to the surcharge from the earth and trees to the North of the wall.
- The Easterly end of the wall is approximately 2.4m in height and does not have a pier to provide lateral restraint. As can be seen on Figure 30, the end of the wall has clearly been repaired/re-built at some point in the past.

- Some of the piers have been repaired with concrete brickwork at some time in the past (see Figures 28 & 29).
- Many of the bricks have spalled and the pointing is almost non-existent in some locations.

#### **Recommendations:**

I do not consider any of these walls to be safe in their current condition. I am therefore making the following recommendations:

- The walls shall be demolished as they pose a significant hazard in their current condition. I consider that to propose the use of these walls to serve a structural function in the proposed re-build of "Thehovels" would be a failure of me to discharge my duties as "Designer" under the Construction (Design and Management) Regulations, 2015. I am recommending that those bricks that are in a suitable condition are re-used to build the outer leaf of the proposed development, thereby preserving the historic/visual feature of this asset. The East portion of the North wall does not form a part of "thehovels" re-build project, however, I am also recommending that the wall is demolished, and re-built to the design of a suitably qualified and experienced structural engineer, re-using the bricks as possible. I am recommending that the feature chimney breast at the West gable be re-built to match the existing.  
As there are a number of areas of the wall that have been repaired/re-built with different bricks, the proposed approach will greatly restore the appearance of this feature.
- The retained earth and trees behind the walls shall be removed to avoid damage to the re-built walls. The level of the ground behind the wall shall be reduced such that the re-built wall is not retaining earth. I advise that the top portion of the existing wall (above retained ground level) is demolished prior to removal of trees and earth as doing so may exacerbate the instability of the wall. The ground behind the wall shall be suitably battered back and a French drain installed around the North, West and East of the proposed development to ensure water is not retained behind the wall in the event of flooding. As an alternative to battering the earth behind the wall a separate retaining wall (e.g. Gabion wall) could be constructed and set back from the re-built wall.
- New foundations shall be designed and installed prior to re-building the walls. The foundations shall be designed as strip footings on the clay strata by a suitably qualified and experienced structural engineer, taking cognisance of the remaining trees in the facility and the trees that have been removed.

I thank you for the opportunity to be involved in this exciting restoration project.